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Foreword

Dear Aspirants,

This magazine by the Plutus IAS team is designed in such a fashion that it holistically covers all the relevant and important topics for the Civil Services Exam to make aspirants exam-ready. Plutus IAS Current Affairs Magazine is a secondary source of information; the newspaper will remain the primary source for the preparation of Current Affairs.

Now, Current Affairs are no longer merely current; they are Contemporary Affairs. Questions asked in both Prelims as well as the Mains assess the conceptual clarity of an aspirant. This magazine is prepared with the aim of helping you understand the interlinkages of both Static and Dynamic news events and internalize the concepts required to crack this examination.

The Plutus IAS team wishes you all the best. Prepare for the UPSC Civil Services Examination with a calm, composed, or serene mind and some patience to crack this examination in one go.

Team
Plutus IAS

Sources:
The Hindu | The Indian Express | The Economic Times | Press Information Bureau | PRS Legislative Research | IDSA: Institute for Defense Studies and Analysis | Yojana and Kurukshetra | Lok Sabha and Rajya Sabha Debates.



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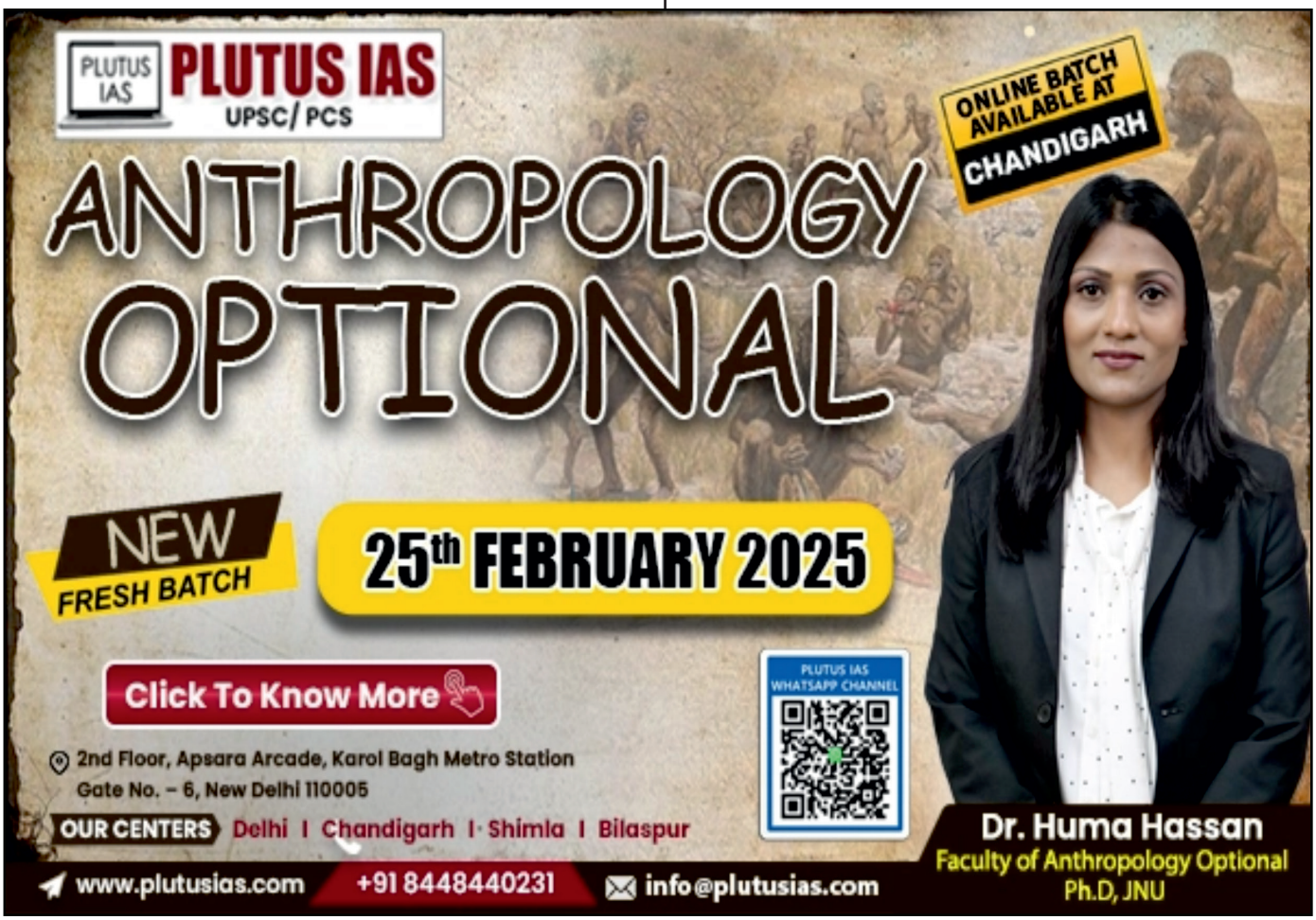
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THE SPEAKER: GUARDIAN OF PARLIAMENT

WHY IN THE NEWS?

Lok Sabha Speaker Om Birla's appeal for political parties to formulate an internal code of conduct for members has drawn attention during the 85th Session of the All India Presiding Officers' Conference (AIPOC) in Patna. This initiative aims to address concerns over the decline in decorum within legislative bodies and the reduction in legislative sittings. Birla emphasized the importance of leveraging digital technologies, AI, and social media to enhance legislative operations, particularly through platforms like the National e-Vidhan application. He also highlighted the goal of realizing the One Nation, One Legislative Platform by 2025. The conference, attended by over 300 delegates, seeks to promote better functioning and modernization of legislative bodies in India.



THE OFFICE OF THE SPEAKER:

1. Constitutional provisions:

The office of the Speaker of the Lok Sabha is established under the Constitution of India. The primary constitutional provisions relating to the Speaker are found in Article 93 and other related provisions:

Article 93: This article deals with the election of the Speaker and Deputy Speaker of the Lok Sabha. It stipulates that the Lok Sabha must elect a Speaker and a Deputy Speaker as soon as it convenes after its first meeting following the general elections.

Article 94: This article outlines the conditions under which the Speaker can vacate office, including resignation or removal through a resolution passed by a majority of the Lok Sabha.

Article 95: Deals with the role of the Deputy Speaker in the absence of the Speaker.

Article 105: This article provides for the privileges and powers of members of Parliament, including the Speaker, who has the authority to maintain order and discipline in the House.

Article 100: Concerns the proceedings of the Lok Sabha, including how voting is conducted, which the Speaker oversees.

2. Background and Origin of the Office

The office of the Speaker of the Lok Sabha has its origins in the British colonial era, and its evolution reflects the growing demands for legislative independence and democratic representation in India.

1. **Pre-Independence Era:** The Government of India Act of 1919 (Montague-Chelmsford Reforms) created the positions of President and Deputy President of the Legislative Assembly (now the Lok Sabha). These officials were the precursors to the modern-day Speaker and Deputy Speaker. In the Government of India Act of 1935, the titles were changed to Speaker and Deputy Speaker, aligning them with the British parliamentary system.
2. **Post-Independence:** The first Speaker of independent India was GV Mavalankar, who served from 1952 to 1956. He helped set the foundation for the role and function of the Speaker in the newly-formed Lok Sabha.
3. **Constitutional Role:** The office was formally institutionalized in the Constitution of India when it was adopted in 1950, giving the Speaker a central role in maintaining the legislative processes and the integrity of the parliamentary system in India

3. Independence of the Office

1. **Security of Tenure**: The Speaker's tenure is tied to the life of the Lok Sabha, typically lasting for five years unless the Lok Sabha is dissolved earlier. The Speaker cannot be easily removed or displaced, providing security of tenure to ensure their independence.
2. **Removal Process**: The Speaker can only be removed by a resolution passed by a majority of the Lok Sabha members. This ensures that the Speaker's removal is a democratic process and requires broad support within the House. The Speaker can also resign voluntarily by submitting their resignation to the Deputy Speaker.
3. **Impartiality**: The Speaker must act impartially, even though they are typically from the ruling party. Once elected, the Speaker is expected to rise above party politics and ensure fair treatment of all members of the Lok Sabha. The Speaker's conduct cannot be criticized or discussed in the Lok Sabha unless through a substantive motion, ensuring they are shielded from partisan attacks.
4. **Casting Vote**: The Speaker's casting vote is used only in the event of a tie during voting. This decision is made impartially, and the Speaker does not use their vote to influence outcomes unless necessary to break a deadlock.
5. **Salary and Benefits:** The Speaker's salary and allowances are fixed by Parliament and are paid from the Consolidated Fund of India, ensuring the Speaker's financial independence from external influences.

ROLE OF SPEAKER IN PARLIAMENTARY PROCEEDING:

1. **Presiding Over Sessions:** The Speaker chairs the Lok Sabha sessions, ensuring orderly debates and maintaining decorum.
2. **Ruling on Points of Order:** The Speaker is the final authority on points of order, clarifying procedural matters during debates.
3. **Impartiality:** The Speaker must act neutrally, treating all members equally, regardless of party affiliation.
4. **Casting Vote:** In case of a tie-in voting, the Speaker casts a deciding vote to break the deadlock.
5. **Certifying Money Bills:** The Speaker certifies Money Bills, ensuring they follow special procedures and are introduced only in the Lok Sabha.
6. **Disqualifying Members:** The Speaker decides on the disqualification of members under the Anti-Defection Law (Tenth Schedule).
7. **Referring Bills to Committees:** The Speaker refers bills to committees for detailed review and appoints committee chairpersons.
8. **Representing the Lok Sabha:** The Speaker acts as the spokesperson for the Lok Sabha in external matters and formal events.

ISSUES WITH THE OFFICE OF THE SPEAKER:

1. **Partisanship:** The Speaker is sometimes seen as biased toward the ruling party, compromising impartiality.
2. **Use of Discretion:** Criticism arises when the Speaker's discretion in decisions like

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disqualification or time allocation appears arbitrary or biased.

3. **Lack of Transparency:** The decision-making process, especially on disqualification or bill certification, can seem non-transparent.
4. **Delayed Decisions on Disqualification:** Delays in deciding on disqualification cases, particularly under the Anti-Defection Law, affect the integrity of the House.
5. **Handling of Disruptions:** The Speaker's response to disruptions and disorderly conduct can sometimes be insufficient.
6. **Judicial Review:** The Supreme Court has intervened in the Speaker's decisions, indicating concerns about impartiality.
7. **Perception of Weakness:** The Speaker is sometimes viewed as ineffective in managing disruptions or ensuring smooth proceedings.
8. **Political Pressures:** The office may be influenced by political pressures, affecting the Speaker's independence.

SUGGESTION TO STRENGTHEN THE OFFICE OF THE SPEAKER:

1. **Independent Selection Process:** Ensure a transparent, neutral election process for the Speaker to reduce political bias.
2. **Clearer Disqualification Rules:** Establish transparent, timely procedures for disqualification under the Anti-Defection Law.
3. **Judicial Oversight:** Allow limited judicial review of the Speaker's decisions to improve accountability.
4. **Better Handling of Disruptions:** Implement stronger guidelines for managing disruptions and maintaining order in the House.
5. **Training and Capacity Building:** Provide regular training for the Speaker to enhance impartiality and procedural knowledge.
6. **Conflict-of-Interest Framework:** Establish policies to prevent partisan influence on the Speaker's decisions.
7. **Transparency in Decision-Making:** Improve communication of the Speaker's rulings to enhance public trust.
8. **Active Role in Committees:** Empower the Speaker to ensure parliamentary committees function impartially and efficiently.

CONCLUSION

The Speaker of the Lok Sabha is vital for maintaining order and impartiality in parliamentary proceedings, as outlined in the Constitution of India (Articles 93-100). Originating from the British era, the office was formalized post-independence. However, it faces challenges such as partisanship, lack of transparency, delayed decisions, and political pressures, which undermine its neutrality. To strengthen the office, suggestions include an independent selection process, clearer disqualification rules, judicial oversight, and better management of disruptions. These reforms would ensure that the Speaker can function more impartially and efficiently, fostering better governance. Speaker Om Birla's recent appeal for political parties to adopt codes of conduct and leverage digital tools emphasizes the need for modernization and accountability in the role.

UNIFORM CIVIL CODE: STRIVING FOR EQUALITY AND JUSTICE

WHY IN THE NEWS?

Uttarakhand has become the first state in India to implement the Uniform Civil Code (UCC), bringing uniform laws across all religions on marriage, inheritance, and civil matters. Key reforms include banning polygamy, granting equal property rights to daughters, and mandating the registration of live-in relationships with equal property rights for children born from them. The law also sets a uniform marriage age—21 for men and 18 for women. These changes are seen as a major step towards gender equality and social reform, potentially inspiring other states to follow suit.

WHAT IS THE UNIFORM CIVIL CODE (UCC)?

The Uniform Civil Code (UCC) refers to a set of common laws governing personal matters—such as marriage, divorce, inheritance, maintenance, adoption, and property succession—that apply to all citizens, regardless of their religion, community, or gender. In India, personal laws currently differ across religious communities, meaning that Muslims, Hindus, Christians, and others are governed by their respective religious personal laws. The UCC aims to replace these diverse laws with a single, unified legal framework. The main objectives of the UCC are:

1. **Equality and Justice**: Ensuring equal rights for all citizens, especially women, by removing discrimination present in some religious laws (e.g., inheritance laws, polygamy).
2. **Secularism**: Establishing a secular legal system where civil matters are not influenced by religious beliefs.
3. **National Integration**: Promoting national unity by creating common laws that unify citizens irrespective of their religion. While Article 44 of the Indian Constitution encourages the state to implement a UCC, it has not been fully adopted across the country due to concerns about religious freedom, diversity, and the potential impact on cultural and personal beliefs. Some states, like Goa, already have a form of UCC in practice, while Uttarakhand adopted it in 2024.



WHY DID UTTARAKHAND TAKE IT AS A DECISION?

1. **Promoting Gender Equality:** One of the primary goals of the UCC in Uttarakhand is to ensure equal rights for all citizens, particularly women. By abolishing practices like polygamy and ensuring equal inheritance rights for daughters across all communities, the UCC aims to address gender imbalances that exist under some religious personal laws.
2. **National Integration and Secularism:** The UCC seeks to promote national integration by unifying personal laws, ensuring that all citizens, regardless of their religion, are governed by the same set of laws. This strengthens the concept of secularism, where the state does not favour any religion in personal matters.
3. **Fulfilling Constitutional Mandates:** Article 44 of the Indian Constitution urges the state to take steps toward securing a UCC. By implementing it, Uttarakhand is fulfilling this constitutional directive, aiming to bring about uniformity in civil matters like marriage, inheritance, and divorce.
4. **Reforming Outdated Practices:** The implementation of the UCC helps to address outdated and discriminatory practices in certain communities, such as polygamy (permitted under Muslim personal law) and the practice of talaq-e-biddat (instant divorce under Muslim law), which the Supreme Court has already deemed arbitrary in some cases.
5. **Modernizing the Legal System:** The UCC provides a standardized, modernized approach to personal laws, making legal processes more efficient and equitable. It helps align the legal system with contemporary values of equality, human rights, and social justice.
6. **Boosting Legal Efficiency:** A uniform set of laws simplifies the legal process by removing confusion and fragmentation in the application of personal laws, resulting in more efficient and accessible justice for all citizens, regardless of their background.

KEY PROVISION OF THE UNIFORM CIVIL CODE (UCC) IN UTTARAKHAND:

1. **Ban on Polygamy:** Prohibits polygamy for all citizens, ensuring gender equality.

2. **Equal Property Rights for Daughters:** Grants daughters equal inheritance and property rights across all religions.
3. **Live-in Relationships:** Requires registration of live-in relationships, with children born in them having equal property rights.
4. **Minimum Marriage Age:** Set the marriage age at 21 for men and 18 for women to prevent child marriages.
5. **Prohibition on Second Marriage:** Bars remarriage while a spouse is alive, preventing bigamy.
6. **Codification of Personal Laws:** Standardizes personal laws for transparency and equality.
7. **Secular Approach:** Ensures personal laws are not influenced by religious practices, promoting a unified legal framework.

SIGNIFICANCE OF UNIFORM CIVIL CODE (UCC) IN INDIA:

1. **Promotes Equality**: The UCC aims to ensure gender equality, particularly by granting women equal rights in areas like inheritance, marriage, and divorce, addressing discriminatory practices in various religious personal laws.
2. **Secularism**: It helps uphold India's secular constitution by ensuring that civil laws governing personal matters like marriage, divorce, and inheritance are not influenced by religious beliefs, fostering a unified legal framework.
3. **National Integration**: The UCC promotes national integration by applying the same set of laws to all citizens, regardless of their religion, fostering a sense of unity and reducing legal disparities across different communities.
4. **Social Justice**: By standardizing laws across religions, the UCC can eliminate outdated and discriminatory practices, such as polygamy and child marriage, which persist in some religious personal laws.
5. **Simplification of Legal Processes**: A common set of laws would streamline legal procedures, making them more efficient, transparent, and accessible for all citizens, regardless of their religion or community.
6. **Modernization**: The UCC aligns the legal system with evolving social norms, helping adapt laws to modern times and promoting individual freedoms, inclusivity, and progressive values.
7. **Fulfilling Constitutional Mandates**: The UCC aligns with Article 44 of the Indian Constitution, which directs the state to work towards securing a common set of laws for all citizens, thereby fulfilling an important constitutional objective.

CHALLENGES IN ITS IMPLEMENTATION :

1. **Religious and Cultural Diversity:** India is a nation with diverse religious and cultural traditions. Each community has its own personal laws governing marriage, divorce, inheritance, and other family matters. Imposing a single code could infringe upon the religious autonomy and cultural practices of these communities.
2. **Lack of Consensus:** There is no consensus among various communities, political parties, and even within the legal and academic circles regarding the need for and the contours of a UCC. Many religious groups view it as an infringement on their religious freedom.
3. **Potential for Social Unrest:** Implementing a UCC without adequate consultation and consensus-building could lead to social unrest and communal tensions, particularly if it is perceived as an imposition by the majority community.
4. **Practical Difficulties:** Drafting and implementing a UCC that is fair, just, and applicable to all communities in a diverse country like India is a complex and challenging task. It requires careful consideration of various religious, cultural, and social factors.
5. **Constitutional Concerns:** Some argue that a UCC could potentially infringe upon the fundamental right to freedom of religion guaranteed by the Indian Constitution.

CONCLUSION

Uttarakhand's implementation of the Uniform Civil Code (UCC) is a significant step toward gender equality, national integration, and a secular legal framework. Key provisions like banning polygamy,

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granting equal property rights to daughters, and setting a uniform marriage age aim to create a unified legal system that applies to all citizens, regardless of religion. Challenges such as religious diversity, lack of consensus, and the potential for social unrest remain. The complex task of creating a fair and inclusive UCC requires careful consultation and consideration of constitutional rights. Uttarakhand's move could inspire other states to adopt similar reforms, fostering a more equitable and progressive society.

AADHAAR AUTHENTICATION FOR GOOD GOVERNANCE

WHY IN THE NEWS?

The Centre has notified the Aadhaar Authentication for Good Governance (Social Welfare, Innovation, Knowledge) Amendment Rules, 2025. The Ministry of Electronics and IT said that Aadhaar Authentication has been expanded to government and private entities for providing various services in the public interest, boosting innovation, knowledge, and public service enhancement. The amendments will enhance the scope for residents to avail themselves of many new services seamlessly, with regard to e-commerce, travel, tourism, hospitality, and health services. The amended rules will also promote the ease of living and livelihood.



AADHAAR RULES: KEY LIGHTS

Aadhaar Card Rule	Description
Aadhaar Number	A 12-digit unique identification number issued by UIDAI (Unique Identification Authority of India) based on biometric and demographic data.
Eligibility for Aadhaar	All Indian residents, including citizens and foreigners residing in India for more than 182 days, are eligible to get an Aadhaar number.
Aadhaar Authentication	A process where the UID number and associated biometric/demographic data are verified against the Central Identities Data Repository (CIDR).
Types of Aadhaar Authentication	1. **Demographic Authentication** 2. **OTP Authentication** 3. **Biometric Authentication** 4. **Multi-factor Authentication**
Biometric Data	Includes fingerprints, iris scan, and facial recognition, used for verifying identity.

Aadhaar Linking	Aadhaar needs to be linked with various services like PAN, bank accounts, mobile numbers, and government schemes for easier verification.
Voluntary Use	Aadhaar authentication is voluntary for certain services, like registering for UPSC exams, but it is mandatory for others, like filing taxes and receiving subsidies.
Aadhaar e-KYC	Aadhaar can be used for Electronic Know Your Customer (e-KYC), a paperless and digital way to verify identity.
Privacy and Security	Aadhaar data is protected by strict privacy regulations. UIDAI provides security measures to safeguard data.
Aadhaar and Children	Children below 5 years are not required to provide biometric data, but they must be enrolled with demographic details.
Aadhaar-based Authentication in Exams	In exams like UPSC, Aadhaar can be used for fingerprint, facial recognition, and QR code scanning for identity verification.
Updating Aadhaar Details	Individuals can update personal details such as an address, phone number, or photograph through UIDAI's online portal or centres.
Aadhaar Card for Non-Residents	Non-residents can apply for Aadhaar if they meet the eligibility criteria of living in India for over 182 days.

BASIC ABOUT AADHAAR:

Category	Description
What is Aadhaar?	A 12-digit unique identity number is issued to all Indian residents by the Unique Identification Authority of India (UIDAI).
How it Works	Aadhaar is based on biometrics (fingerprints, iris, face) and demographic information.
Voluntary Service	Aadhaar is a voluntary service available to anyone, regardless of age, gender, or documentation.
Uses of Aadhaar	Verifying identity for various services (bank accounts, passport applications, government benefits, etc.).
	Can be used both online and offline for identity verification.
Benefits of Aadhaar	Eliminates the need for multiple documents to access services.
	Simplifies mobility, as identity can be verified anywhere in the country.
	Helps reduce fraud and supports social inclusion and economic security.

How to Get Aadhaar	Enrol for an Aadhaar number for free by providing demographic and biometric information.
	For more information, you can contact UIDAI's toll-free number at 1947.

Aadhaar for Good Governance:

1. **Expansion of Aadhaar Authentication:** Enhances the scope of Aadhaar authentication to promote good governance, social welfare, and innovation. Aims to improve service delivery in sectors like e-commerce, travel, tourism, hospitality, and health.
2. **Inclusion of Non-Government Entities:** Allows both government and non-government entities to use Aadhaar authentication for public interest services.
3. **Focus on Ease of Living:** Aims to improve access to services and enhance ease of living for residents by facilitating seamless service delivery.
4. **Trusted Transactions:** Ensures secure and reliable transactions by enabling trusted identity verification for both service providers and seekers.
5. **Streamlined Approval Process:** Entities seeking Aadhaar authentication must apply with required details to the concerned ministry or department. Applications will be reviewed by UIDAI and approved by MeitY based on recommendations.
6. **Encouragement for Innovation:** The amendment encourages the development of digital solutions leveraging Aadhaar authentication for various services.
7. **Strengthening Partnerships:** Aims to foster stronger partnerships between government and private entities for enhanced governance solutions.
8. **Improved Access to Aadhaar-Enabled Services:** Expected to provide individuals with better access to Aadhaar-enabled services, improving efficiency and service delivery.
9. **Promoting Transparency and Inclusivity:** The amendment seeks to promote transparency and inclusivity in the decision-making process, benefiting residents and service providers.

WHAT ARE THE ISSUES WITH AADHAAR USE?

1. **Data Theft:** Criminals can potentially steal biometric data (like fingerprints or iris scans) for fraudulent activities, compromising security.
2. **Authentication Failures:** Aadhaar authentication can fail due to various reasons, which could delay the distribution of benefits and services.
3. **Security Concerns:** There are concerns about security and privacy vulnerabilities associated with the Aadhaar system.
4. **Violation of Rights:** Some argue that Aadhaar may violate people's right to privacy, especially regarding the collection and use of personal data.
5. **Ambiguity in Biometric Information:** The Supreme Court struck down certain provisions of the Aadhaar Act, including allowing private corporations to use biometric data for authentication.
6. **Inadequate Facilities:** There are concerns about inadequate facilities for Aadhaar registration, updating details, and retrieving lost Aadhaar numbers.
7. **Errors in Aadhaar Information:** Errors may occur in Aadhaar applications, such as spelling mistakes, mismatched photos, or discrepancies between Aadhaar and other documents like PAN cards.

WAY FORWARD:

1. **Strengthen Security:** Enhance security measures to protect biometric data from theft and breaches.
2. **Improve Accessibility:** Expand Aadhaar centres and improve services for data updates and retrieval, especially in remote areas.

3. **Address Privacy:** Ensure strict adherence to privacy regulations and clear consent for data use.
4. **Reduce Errors:** Streamline registration to minimize data errors and improve quality control.
5. **Enhance Authentication:** Improve authentication reliability to prevent failures that delay service delivery.
6. **Promote Awareness:** Increase public knowledge of Aadhaar's voluntary/mandatory use and transparency in data handling.
7. **Encourage Innovation:** Support digital services and solutions using Aadhaar to improve public service delivery.
8. **Foster Public-Private Partnerships:** Strengthen collaborations between government and private entities for seamless, secure services.
9. **Periodic Review:** Regularly update Aadhaar policies to address emerging tech, security, and public needs.

CONCLUSION

The recent Aadhaar Authentication for Good Governance Amendment Rules, 2025, aim to expand Aadhaar's reach, promoting better service delivery across both government and private sectors. The amendments focus on improving residents' access to services, enhancing innovation, and supporting ease of living. While Aadhaar has significant benefits, such as reducing fraud, simplifying identity verification, and promoting social inclusion, it also faces challenges, such as privacy concerns, security risks, and the potential for errors.

ARTICLE 200:DOUBLE EDGE SWORD

WHY IN THE NEWS?

The issue of Tamil Nadu Governor RN Ravi withholding assent to bills passed by the state assembly has sparked a significant legal examination by the Supreme Court. The Court questioned whether the Governor's decision to withhold assent should be considered final, highlighting concerns about the Governor's discretion. Senior Advocate Rakesh Dwivedi, representing the petitioners, argued that the Governor cannot withhold assent indefinitely. The Court pointed out that the Tamil Nadu Assembly had reconsidered and sent the bills back to the Governor in mid-November, but there was no communication from him regarding the withholding of assent nor any reasons given. This raises questions about the transparency and accountability of the Governor's actions, especially when no clear message or explanation was provided.



WHAT IS ARTICLE-200?

Article 200 of the Indian Constitution outlines the powers of the Governor in relation to the assent of bills passed by the State Legislature. It specifies the procedure the Governor must follow after a bill is passed by the Legislative Assembly (or both Houses, in states with a Legislative Council) of a state.

- **Presentation to the Governor:** After a bill is passed by the State Legislature, it is presented to the Governor for assent.
- **Governor's Options:** Assent to the bill, Withhold assent to the bill, Reserve the bill for the President's consideration in certain cases.
- **Returning Bills:** If the Governor withholds assent (except for Money Bills), the bill can be returned to the Legislature for reconsideration with a message. If passed again, the Governor must assent.
- **Reservation for President:** The Governor can reserve a bill for the President if it undermines the powers of the High Court.

WHY WAS ARTICLE 200 ADDED TO THE CONSTITUTION

Article 200 was added to the Indian Constitution to regulate the Govern or's role in handling bills passed by the State Legislature, ensuring a balance of power and protecting constitutional integrity.

1. **Preventing Unconstitutional Legislation**: It allows the Governor to withhold assent or return bills for reconsideration, preventing hasty or unconstitutional laws.
2. **Ensuring Gubernatorial Accountability**: The Governor must act within a reasonable time and communicate reasons for withholding assent, ensuring accountability.
3. **Safeguarding Constitutional Principles**: It allows the Governor to reserve bills for the President if they undermine constitutional principles, such as judicial powers.
4. **Preventing Legislative Overreach**: By enabling the return of bills for reconsideration, it adds a layer of scrutiny, preventing extreme decisions by the Legislature.

WHAT ARE THE CONCERNS OVER ARTICLE-200

1. **Indefinite Delays:** Lack of a time frame for granting assent can lead to prolonged delays, creating a constitutional impasse and hindering governance.
2. **Partisanship and Political Influence:** Governors may act under central government influence, leading to political manipulation and accusations of undermining federalism, especially in opposition-ruled states.
3. **Lack of Transparency:** The Governor's reasons for withholding assent or reserving bills for the President are often unclear, raising concerns about accountability and transparency.
4. **Constitutional Impasse:** Delays or refusals to assent can result in deadlocks, disrupting the functioning of state legislatures and delaying important laws.
5. **Impact on Legislative Independence:** The Governor's power to return bills for reconsideration can undermine state legislative autonomy, potentially exerting influence over the legislative process.
6. **Legal and Political Conflicts:** Disputes between the Governor and state governments can escalate into legal and political confrontations, further straining state-central relations.

WAY FORWARD

1. **Time-bound decision-making:** Governors should be mandated to act within a specified time frame to prevent delays.
2. **Clear guidelines for discretionary powers:** Establishing a clearer framework for the Governor's role could ensure that their actions are transparent and accountable.
3. **Strengthened judicial oversight:** Judicial review of the Governor's actions could help prevent misuse of powers and ensure adherence to constitutional principles.
4. **Enhanced Communication:** Governors must communicate reasons for withholding assent or reserving bills promptly, promoting transparency.
5. **Limit Discretionary Powers:** Discretionary powers should be used sparingly and based on constitutional principles, not political motives.
6. **Strengthening Federal Relations:** Governors should act impartially to maintain the balance of power between state and central governments.

CONCLUSION

Article 200 plays a crucial role in maintaining a balance of power between the Governor and the State Legislature. concerns about delays, partisanship, and transparency highlight the need for clearer guidelines and reforms to ensure that the Governor's powers are used responsibly, in accordance with constitutional principles, and with respect for state autonomy. The ongoing legal scrutiny by the Supreme Court underscores the importance of addressing these issues to strengthen India's democratic framework.

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PRELIMS QUESTION:

1. With reference to the office of the Speaker of the Lok Sabha, consider the following statements:

1. The Speaker is elected by the members of the Rajya Sabha, not the Lok Sabha.
2. The Speaker has the authority to certify Money Bills before they are presented to the President.
3. The Speaker's tenure is tied to the life of the Lok Sabha, typically lasting five years unless the Lok Sabha is dissolved earlier.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

2. With reference to the Uniform Civil Code (UCC), consider the following statements:

1. The UCC aims to implement a common legal framework for personal laws in India.
2. UCC is only applicable to Hindus and not to other religious groups in India.
3. The UCC is mandated by Article 44 of the Indian Constitution.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

3. With reference to the Aadhaar Authentication for Good Governance (Social Welfare, Innovation, Knowledge) Amendment Rules, 2025, which of the following statements is/are correct?

1. The amendments expand Aadhaar authentication to both government and private entities for the provision of services in the public interest.
2. The amendment allows the use of Aadhaar authentication for private corporations in all sectors, including healthcare.

Select the correct answer using the code given below:

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

4. With reference to Article 200 of the Indian Constitution, consider the following statements:

1. The Governor has the authority to withhold assent to bills passed by the State Legislature indefinitely without providing any reasons.
2. The Governor must reserve for the President's consideration any bill that undermines the powers of the High Court or contradicts central laws.
3. The Governor is required to provide reasons for withholding assent to bills within a reasonable time.

How many of the above-givenstatements are correct?

A. Only one

B. Only two

C. All three

D. None

ANSWER

1. B	**2. A**	**3. A**	**4. B**

MAINS QUESTION:

1. Critically examine the role of the Speaker of the Lok Sabha in ensuring the impartial functioning of the House and suggest measures to strengthen the office.

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(250 words, 15 marks)

2 Uttarakhand's decision to implement the Uniform Civil Code (UCC) marks a significant step towards gender equality and social reform in India." Discuss the key provisions of the UCC and analyze the challenges in its implementation.

(250 words, 15 marks)

3. Discuss both the potential benefits and challenges of expanding Aadhaar authentication for both government and private entities. How can these amendments improve service delivery and governance, and what are the major concerns that need to be addressed to ensure its effectiveness?

(250 words, 15 marks)

4. Discuss the concerns surrounding Article 200 of the Indian Constitution and suggest reforms to ensure the proper exercise of the Governor's powers in the assent process.

(250 words, 15 marks





DEEPENING INDIA-US NUCLEAR COOPERATION: A NEW ERA IN BILATERAL TIES

WHY IN THE NEWS?

This development is making headlines because it marks a significant diplomatic breakthrough between India and the United States. The US has removed three key Indian institutions – Indian Rare Earths, the Indira Gandhi Atomic Research Centre (IGCAR), and the Bhabha Atomic Research Centre (BARC) – from its Entity List, a move that had long restricted collaboration between the two nations in critical scientific and technological sectors. The removal of these entities from the list signals a deeper partnership, particularly in areas like nuclear energy, clean energy technologies, and rare earth minerals, all of which are vital for global sustainability efforts. The decision opens the door for increased cooperation between India and the US in advanced research and development, fostering greater access to cutting-edge technologies that could benefit both countries, particularly in the race to address climate change and enhance green energy supply chains.



KEY FACTS ABOUT IGCAR, BARC, AND INDIAN RARE EARTHS:

Aspect	IGCAR (Indira Gandhi Centre for Atomic Research)	BARC (Bhabha Atomic Research Centre)	Indian Rare Earths (IREL)
Establishment	1971	1954	1950
Location	Kalpakkam, Tamil Nadu, India	Mumbai, Maharashtra, India	Mumbai, Maharashtra, India
Parent Organization	Department of Atomic Energy (DAE)	Department of Atomic Energy (DAE)	Department of Atomic Energy (DAE)
Primary Focus	Nuclear research, fast breeder reactors, reactor engineering, and fuel cycle development.	Nuclear science and engineering, including reactor development and nuclear fuel cycle.	Mining, processing, and refining of rare earth minerals and metals.

Main Facilities	Fast Breeder Test Reactor (FBTR), KAMINI Reactor, Prototype Fast Breeder Reactor (PFBR)	Research reactors, nuclear fuel cycle, radiation processing, and research labs.	Mineral separation plants, Rare Earth Extraction Plants, REPM Plants.
Notable Achievements	Development of fast breeder reactors, reprocessing technologies, and sodium-cooled reactors.	Development of India's nuclear power reactors, fast breeder reactors, and reprocessing.	First commercial production of rare earth compounds in India.
Key Research Areas	Nuclear reactor technology, materials science, fuel reprocessing, reactor safety.	Nuclear reactor design, radiation safety, fuel cycle, and advanced nuclear technologies.	Rare earth mineral extraction, refining, and production of high-purity rare earth compounds.

EVOLUTION OF INDIA- USA COOPERATIONS IN NUCLEAR TECHNOLOGY:

1. Indo-US Nuclear Deal (123 Agreement)

- **2005:** U.S. President George W. Bush and Indian PM Manmohan Singh announced a joint framework for nuclear cooperation.
- **2006:** U.S. Congress passed the Hyde Act, allowing nuclear cooperation with India.
- **2008:** The 123 Agreement was signed, allowing India to access U.S. nuclear technology for civilian purposes, despite not signing the Non-Proliferation Treaty (NPT).

2. Membership to Global Nuclear Groupings

- **2008:** Nuclear Suppliers Group (NSG) Waiver granted, allowing India to access nuclear materials and technology.
- **2016:** India joined the Missile Technology Control Regime (MTCR).
- **2017:** India became a member of the Wassenaar Arrangement for controlling arms and dual-use technology exports.
- **2018:** India joined the Australia Group to control the spread of chemical and biological weapons.

3. Access to Nuclear Technology

- **Nuclear Fuel & Reactors:** India gained access to civilian nuclear reactors and uranium, addressing energy needs.
- **Advanced Reactor Designs & Technology:** Allowed access to state-of-the-art reactor designs, nuclear security, and waste management technologies.

KEY MILESTONES:

Year	Event	Significance
2005	India-US Joint Statement	Beginning of nuclear cooperation
2006	U.S. Hyde Act	U.S. agreed to share nuclear technology with India
2008	123 Agreement & NSG Waiver	Access to nuclear technology and materials
2016	India Joins MTCR	Access to missile and space technology

2017	India Joins Wassenaar Arrangement	Cooperation on dual-use technologies
2018	India Joins Australia Group	Control over chemical and biological weapons

SIGNIFICANCE OF NUCLEAR COOPERATION WITH THE USA:

1. **Energy and Economic Growth:** The deal grants India access to nuclear fuel and technology, helping address its growing energy needs. It allows U.S. companies to build reactors in India, supporting plans to expand nuclear power capacity.
2. **Strategic Significance:** The deal strengthens U.S.-India relations, positioning India as a strategic partner to counterbalance China's rising influence in the Indo-Pacific. It also solidifies India's role in regional stability and counterterrorism.
3. **Nonproliferation Efforts:** India agrees to IAEA safeguards on its civilian reactors and continues its nuclear testing moratorium. Critics argue the deal undermines the NPT by enabling a non-signatory state to access nuclear technology, but proponents emphasize India's strong nonproliferation record.
4. **Impact on Global Nonproliferation:** The deal challenges the NPT's framework, as India, not an NPT signatory, gains access to nuclear technology. However, India has shown restraint in nuclear technology exports, unlike countries like Pakistan.
5. **China and Regional Dynamics:** The deal serves as a counterbalance to China, although it raises concerns about regional nuclear competition. India's expanding nuclear capabilities could influence its leverage in Asia.
6. **Nuclear Technology Transfer:** The deal allows dual-use technology, raising concerns it could aid India's weapons program, but critics note India's advanced nuclear capabilities and responsible track record.

WHY SLOW PROCESS IN NUCLEAR COOPERATION:

1. **Legal and Regulatory Hurdles:** The U.S. required congressional approval for nuclear trade with India, which took over 3 years (2005-2008). India's nuclear liability law (2010) further delayed U.S. supplier involvement.
2. **Nonproliferation Concerns:** Critics feared the deal would undermine the NPT and encourage proliferation. India's agreement to allow inspections of 14 reactors by the IAEA required extensive negotiations.
3. **Political Resistance:** The deal faced opposition in both India's Parliament (2008) and U.S. Congress, with concerns over security and sovereignty slowing progress.
4. **Technical Challenges:** The deal involved building nuclear reactors and ensuring safety standards, leading to delays in reactor construction and implementation.
5. **Geopolitical Sensitivities:** Diplomatic concerns, particularly over China's rise and Pakistan's nuclear capabilities, added complexity to the negotiations.
6. **Implementation Delays:** India's commitment to placing reactors under IAEA safeguards took years, with full implementation of safeguards expected by 2014.

WAYS TO HASTEN THE NUCLEAR TECHNOLOGY COOPERATION:

1. **Streamline Regulatory Processes:** Simplifying legal approvals and removing liability barriers can expedite cooperation.
2. **Enhance Technical Collaboration:** Strengthening joint research and development efforts can speed up nuclear technology sharing.
3. **Diplomatic Engagement:** Strengthening diplomatic ties can address geopolitical sensitivities and accelerate trust-building in the region.
4. **Faster Safeguard Implementation:** Expedited implementation of safeguards and reactors under IAEA inspections can improve transparency and speed up progress.

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5. **Private Sector Involvement:** Encouraging private-sector partnerships and investments in nuclear technology can accelerate development and increase the pace of implementation.

6. **Addressing Regional Security Concerns:** Addressing security concerns, particularly with neighbouring countries, can help reduce tensions and ensure smoother cooperation.

7. **Establishing Clear, Long-Term Commitments:** Creating clear, long-term agreements and frameworks for cooperation between India and the U.S. can provide stability and reduce delays in decision-making.

CONCLUSION

The recent diplomatic breakthrough between India and the U.S., with the removal of key Indian institutions like IGCAR, BARC, and Indian Rare Earths from the U.S. Entity List, marks a pivotal moment in their nuclear cooperation. This development not only strengthens their strategic and economic ties but also opens new avenues for collaboration in advanced technologies such as nuclear energy, clean energy, and rare earth minerals, crucial for addressing global sustainability challenges. While the progress in nuclear cooperation has been slow due to legal, geopolitical, and technical obstacles, efforts to streamline regulatory processes, enhance technical collaboration, and foster private sector involvement can hasten this partnership.

BRIDGING NATIONS: THE GROWING PARTNERSHIP BETWEEN INDIA AND INDONESIA

WHY IN THE NEWS?

Indonesian President Prabowo Subianto's visit to India is set to deepen the strategic partnership between the two countries, reflecting Indonesia's ambition to play a larger role globally. Despite occasional differences in global outlook, the growing collaboration between India and Indonesia, bolstered by successful foreign ministerial relations and shared G20 presidencies, points to a more coherent partnership. A key challenge lies in how India's Foreign Minister, S. Jaishankar, connects with Indonesia's new foreign minister, Sugiono, to strengthen this high-profile relationship further.



EVOLUTION OF INDIA - INDONESIA BILATERAL RELATIONS:

Phase	Timeline	Key Events and Developments
Phase 1: Foundation and Early Engagement	1950 - 1970	Formal diplomatic relations were established in 1950. Bandung Conference in 1955, both co-founders of the Non-Aligned Movement (NAM). Cooperation on anti-colonial struggles and sovereignty.

Phase 2: Expanding Ties and Strategic Cooperation	1970 - 2000	Increased focus on regional cooperation and multilateral diplomacy. The signing of MoUs on defence, trade, and other sectors. 1992: Start of India's "Look East Policy". 1998: Greater defense and economic collaboration.
Phase 3: Comprehensive Partnership and Strategic Engagement	2000 - 2014	2001 MoU, formalizing bilateral cooperation. 2005: Upgrade to Strategic Partnership. Growth in trade, defence, and cultural exchange. Enhanced collaboration in regional security and defence.
Phase 4: Enhanced Strategic Partnership and Global Cooperation	2014 - Present	"Act East" policy boosts cooperation in defence, trade, and regional security. 2017: Bilateral trade surpasses $20 billion. 2018: Modi's visit solidifies Comprehensive Economic Partnership. Focus on maritime security, climate change, and sustainable development.

Areas of Cooperation:

1. **Maritime Security**: Joint naval exercises (e.g., Samudra Shakti, IND-INDO CORPAT) to enhance interoperability and address piracy, terrorism, and other maritime threats.
2. **Defense & Security:**

- **Strategic Partnership:** Joint military training, technology sharing, and defence exports (e.g., BrahMos, Light Combat Aircraft).
- **Military Engagements:** Increased naval operations like INS Sindhukesari's operational turnarounds.

3. **Trade & Economic Cooperation:** Bilateral trade reached USD 38.85 billion in 2022-23, with strong ties in energy (coal, palm oil) and infrastructure, including Sabang Port development.
4. **Cultural & People-to-People Ties:** Shared cultural history through the Ramayana and Mahabharata; cultural exchanges via the Swami Vivekananda Cultural Centre.
5. **Education & Capacity-Building:** Capacity-building programs like ITEC and scholarships for Indonesian students in India. Humanitarian support, such as Operation Samudra Maitri post-2018 earthquake and tsunami.
6. **Regional & Multilateral Cooperation:** Active participation in forums like ASEAN, IORA, G20, and East Asia Summit, focusing on maritime security, trade, and climate change.
7. **Science & Technology:** Collaboration in space, IT, and green tech; alignment on climate action and the International Solar Alliance.
8. **Climate Change & Sustainability:** Joint initiatives on renewable energy, climate resilience, and disaster management.

SIGNIFICANCE OF INDONESIA FOR INDIA:

1. **Strategic Partner:** Key to India's Indo-Pacific vision, supporting free, open, and inclusive maritime security, especially through multilateral forums (EAS, IORA).

2. **Maritime Security & Connectivity:** Critical for securing shipping lanes, with initiatives like Sabang Port improving access to the Malacca Strait.
3. **Economic Cooperation:** Major trade partner, with USD 38.85 billion in trade; significant supplier of coal and palm oil.
4. **Defense Ties:** Joint naval exercises and defence exports, including BrahMos missiles.
5. **Cultural Ties:** Shared history, especially through Ramayana and Mahabharata; cultural centres foster bilateral exchanges.
6. **Counterbalance to China:** Helps India mitigate China's growing influence in the region.

RAISING CONCERN IN INDIA -INDONESIA RELATIONS:

1. **Trade Imbalance:** India's trade deficit with Indonesia was USD 21 billion in 2022-23, with imports (mainly coal and palm oil) outpacing exports.
2. **Regulatory Hurdles:** Different defence acquisition processes hinder joint ventures and defence cooperation.
3. **China's Influence:** Indonesia's involvement in China's Belt and Road Initiative (e.g., high-speed rail projects) raises concerns for India.
4. **Connectivity Issues:** Limited air connectivity (20 flights/week) and visa challenges restrict business and tourism exchanges.
5. **Political Focus:** Indonesia's ASEAN-centric approach sometimes diverts attention from deeper bilateral engagement with India.
6. **Economic Underutilization:** Bilateral trade potential is USD 61 billion, but current trade is underperforming at USD 38.85 billion.
7. **Defense Delays:** Joint defence projects, like BrahMos missiles, face slow progress due to differing procurement systems.
8. **Environmental Concerns:** Palm oil imports from Indonesia face criticism over deforestation, impacting the trade relationship.

WAY TO STRENGTHEN BILATERAL TIES:

1. **Boost Trade & Investment:** Fast-track CEPA and explore new sectors like IT, renewable energy, and manufacturing.
2. **Defense Cooperation:** Expand joint military exercises, technology transfer, and maritime security initiatives.
3. **Improve Connectivity:** Enhance direct flights, ease visa processes, and develop port infrastructure like Sabang.
4. **Cultural Exchanges:** Promote shared cultural heritage, yoga, and religious exchanges, fostering people-to-people links.
5. **Tech & Research Collaboration:** Partner on R&D and technology projects in areas like renewable energy and healthcare.
6. **Maritime Security:** Expand initiatives like IND-INDO CORPAT and Samudra Shakti to strengthen regional security.
7. **Multilateral Engagement:** Collaborate more within ASEAN, IORA, and the East Asia Summit on security and growth.
8. **Sustainable Development:** Work on climate change, disaster resilience, and joint projects under the International Solar Alliance.

CONCLUSION

India-Indonesia relations have grown strong, focusing on defence, trade, maritime security, and cultural exchange. Despite challenges like trade imbalances, regulatory issues, and Indonesia's ties with China, both countries have maintained close cooperation on regional platforms like ASEAN and G20. To strengthen ties, efforts should focus on fast-tracking the CEPA, expanding defense and trade collaboration, improving connectivity, and enhancing cultural ties. Increased cooperation in renewable energy and technology will unlock further potential, solidifying their role as key Indo-Pacific partners.

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NAVY OPERATIONS: LEADING WITH STRENGTH AND STRATEGY

WHY IN THE NEWS?

The Indian Navy's contingent, led by Lieutenant Commander Sahil Ahluwalia, took centre stage with its tableau focusing on "Aatmanirbhar Bharat" (self-reliant India). The tableau featured newly commissioned indigenous warships such as the INS Surat, INS Nilgiri, and INS Vaghsheer. This presentation underscored the Navy's role in securing India's maritime borders with a focus on indigenisation in defence production.



WHAT IS THE IMPORTANCE OF INDIAN OCEAN REGIONS FOR INDIA?

1. **Trade and Commerce:** The Indian Ocean serves as a major conduit for India's international trade, connecting it to markets in the Middle East, Africa, and East Asia.
2. **Energy Security:** A large portion of India's oil imports pass through the Indian Ocean, making it crucial for the country's energy security.
3. **Maritime Security:** India has a long coastline and a vested interest in securing the Indian Ocean to protect trade routes and prevent threats like piracy and territorial disputes.
4. **Naval Power Projection:** The region allows India to project its naval power and exert influence, enhancing its strategic positioning in the Indian Ocean.
5. **Strategic Location:** India's geographical position in the Indian Ocean provides a strategic advantage for monitoring regional activities and responding to emerging threats.

INDIA'S RECENT OPERATIONS IN THE INDIAN OCEAN REGIONS:

Operation Name	Year	Purpose
Operation Rahat	2015	Humanitarian evacuation of Indian citizens from Yemen amid civil war.
Operation Samudra Maitri	2015	Humanitarian aid to Nepal after the earthquake; providing assistance and relief.
Operation Nisar	2016	Evacuation of Indian nationals from South Sudan during civil unrest.
Operation Sea Breeze	2017	Naval exercise to strengthen maritime cooperation with other regional powers.
Operation Sankalp	2019	Anti-piracy operations in the Gulf of Aden to ensure maritime security.
Operation Maitri	2020	Humanitarian aid to the Maldives and other Indian Ocean nations during the COVID-19 pandemic.
Operation Vanilla	2020	Humanitarian and rescue operations in Madagascar and the surrounding region after Cyclone Diane.
Operation Calm Sea	2021	Focused on maritime security, including counter-piracy operations and humanitarian assistance in the Gulf of Aden.
Operation "Sagar"	2020-on-going	Indian Navy's commitment to providing humanitarian assistance and disaster relief across Indian Ocean littoral states, with ongoing missions like COVID-19 aid.

6. **Fishing Industry:** The Indian Ocean is a key source of fish, supporting India's fishing industry and coastal economy.
7. **Geopolitical Influence:** Control over the Indian Ocean allows India to expand its geopolitical influence, acting as a counterbalance to other global powers in the region, such as China.
8. **Trade Routes and Global Connectivity:** The Indian Ocean is home to some of the world's busiest and most critical maritime trade routes, such as the Strait of Malacca, which are essential for global commerce.
9. **Strategic Military Alliances:** India's position in the Indian Ocean enables it to build strategic military partnerships with other maritime powers like the United States, Australia, and Japan through initiatives such as the Quad (Quadrilateral Security Dialogue).
10. **Access to Strategic Islands:** India's control over key islands in the Indian Ocean, such as the Andaman and Nicobar Islands, strengthens its security and surveillance capabilities in the region.

WHAT MAKES INDIA THE FIRST RESPONDENT IN THE INDIAN OCEAN REGION?

1. **Anti-Piracy Operations:** India has actively contributed to global anti-piracy efforts, particularly in the Gulf of Aden, where it deployed naval forces to protect shipping lanes and safeguard international trade from piracy.
2. **Search and Rescue Missions:** India frequently leads or assists in search and rescue operations for missing ships and aircraft in the vast expanse of the Indian Ocean, often being the first nation to respond to such emergencies.
3. **Disaster Relief Efforts:** India has consistently been at the forefront of providing disaster relief in the region, especially during natural disasters like cyclones, tsunamis, and earthquakes. India's prompt response helps mitigate the human and economic impacts of these events.
4. **Diplomatic and Regional Leadership:** India leads in forums like the Indian Ocean Rim Association (IORA) and Indian Ocean Naval Symposium (IONS), strengthening diplomatic ties and enabling coordinated responses to regional crises.
5. **Rapid Deployment Capabilities:** India's military has rapid deployment forces, including amphibious and airlift capabilities, allowing quick assistance in disaster relief or security situations.
6. **Multilateral Cooperation:** India collaborates with global powers (US, Japan, Australia) and regional allies to enhance security and disaster management, boosting its role as a regional security provider.
7. **Humanitarian and Civil Support:** India also provides non-military aid such as medical support, food, and rebuilding efforts, expanding its role beyond defence to humanitarian assistance.

WHAT IS THE CHALLENGE TO THE FIRST RESPONDENT IN THE INDIAN OCEAN REGION?

1. **Militarization and Geopolitical Tensions:** The growing presence of powers like China and the U.S. in the region complicates India's security role, especially with China's String of Pearls strategy and increased naval activities.
2. **Non-Traditional Threats:** Issues like piracy, terrorism, drug trafficking, and illegal migration undermine India's ability to respond effectively, especially when these threats are transnational.
3. **Debt Trap Diplomacy:** China's economic influence in the region, through the Belt and Road Initiative (BRI), places countries like Sri Lanka and the Maldives under economic pressure, limiting India's diplomatic leverage.
4. **Regional Cooperation Challenges:** India's role as a first responder is affected by reluctance from some countries to collaborate due to ties with China, limiting joint security and humanitarian efforts.
5. **Climate Crisis:** Rising sea levels and environmental disasters put small island nations at risk, requiring India to manage both humanitarian responses and the migration crisis.

FUTURE APPROACH TO FIRST RESPODENT IN INDIAN OCEAN REGION

1. **Enhance Multilateral Engagement:** Strengthen partnerships within regional forums like IORA and the Indo-Pacific Oceans Initiative (IPOI) to ensure broader collaboration.
2. **Build Defense and Infrastructure:** Invest in maritime surveillance, port infrastructure, and rapid-response capabilities to secure sea lanes and provide swift disaster relief.
3. **Improve Coordination:** Foster better cooperation between India's military, coast guard, and other agencies for coordinated, efficient responses to crises.
4. **Boost Humanitarian Capabilities:** Strengthen disaster relief infrastructure and rapid deployment to enhance India's role as the first responder in humanitarian crises.
5. **Address Non-Traditional Threats:** Enhance maritime law enforcement and intelligence sharing with regional countries to combat piracy, human trafficking, and drug smuggling.
6. **Promote Maritime Governance:** Advocate for stronger maritime laws and regional cooperation to ensure freedom of navigation and peaceful conflict resolution.
7. **Focus on Climate Action:** Lead initiatives to help island nations adapt to climate change, reducing the risk of displacement and fostering sustainable development.
8. **Counter China's Influence:** Engage in economic diplomacy and strengthen defense ties with regional partners to counterbalance China's growing presence and offer alternative development models.

CONCLUSION

The Indian Ocean Region (IOR) is crucial for India's strategic, economic, and geopolitical interests. As a key maritime power, India plays a central role in securing trade routes, ensuring energy security, and projecting naval influence. Its active participation in humanitarian operations and disaster relief further solidifies its position as the first responder in the region. However, India's role is challenged by increasing militarization, non-traditional threats, geopolitical tensions, and climate change risks. India must focus on enhancing multilateral cooperation, strengthening its maritime infrastructure, and addressing non-traditional security threats. Additionally, countering China's growing influence and fostering regional cooperation will be essential for maintaining stability and asserting India's leadership in the IOR.

FRANCE: A BEHIND CURTAIN FRIEND OF INDIA

WHY IN THE NEWS?

India and France's recent agreement to enhance cooperation in high-end technology sectors is a significant development, reflecting the growing partnership between the two nations. This includes discussions on long-standing issues in civil nuclear cooperation, setting the stage for Prime Minister Narendra Modi's upcoming visit. The Foreign Office Consultations in Paris involved key officials from both sides, including Foreign Secretary Vikram Misri and French Foreign Minister Jean-Noël Barrot. The talks also covered the upcoming Summit for Action on Artificial Intelligence, which India is set to co-chair, highlighting its role in global tech discussions. Additionally, the focus on coordinated surveillance in the Indian Ocean Region signals both countries' commitment to strengthening security and strategicties.



EVOLUTION OF INDIA-FRANCE TIES:

Year	Key Highlights
1950s	- Diplomatic relations established post-Indian independence.
	- Emphasis on cultural exchanges and shared democratic values.
	- France supported India's intellectual and educational initiatives.
1980s	- Growth in defence and technological cooperation, including civil nuclear energy.
	- Strengthened ties in trade and international diplomacy.
2014	- Prime Minister Modi's visit marks the renewal of the India-France strategic partnership.
	- Major defence cooperation (e.g., Rafale deal), clean energy initiatives, and climate change collaboration.
	- Expansion in trade relations focusing on technology, defence, and infrastructure.
2025	- Economic cooperation growth, especially in green technologies, smart cities, and infrastructure.
	- Continued defence and security collaboration, especially in cybersecurity and Indo-Pacific security.
	- Focus on science & technology cooperation in space research, AI, and digital innovation.
	- Cultural ties expanding through education exchanges, Indian diaspora, and student mobility.

KEY AREAS OF COOPERATION BETWEEN INDIA AND FRANCE:

1. **Defense & Security**: Joint military exercises, defence technology sharing, and maritime security cooperation.
2. **Economic & Trade**: Strong trade relations, investments in green technologies, and joint infrastructure projects.
3. **Clean Energy & Climate Change**: Cooperation in renewable energy, the International Solar Alliance, and climate action efforts.
4. **Science & Technology**: Collaboration on space research, AI, health tech, and innovation partnerships.
5. **Cultural & Educational Exchange**: Student exchange programs, cultural diplomacy, and promoting French language education in India.
6. **Tourism**: Joint efforts to promote tourism, especially heritage and eco-tourism, and hosting related events.
7. **Health & Medicine**: Collaboration on health projects, vaccine partnerships, and medical research.
8. **Diplomatic & Strategic Ties**: Multilateral cooperation through forums like UNESCO, G7, and G20, and regional geopolitical collaboration.

SIGNIFICANCE OF FRANCE FOR INDIA:

1. **Strategic Partnership:** France is a key strategic partner for India, with strong cooperation in defence, security, and counterterrorism.
2. **Defense Cooperation:** France is one of India's most trusted defence partners, with joint military exercises, advanced defence technologies, and the purchase of Rafale fighter jets.
3. **Trade and Economic Ties:** France is an important trading partner, with significant French investments in India. Bilateral trade covers sectors like energy, aerospace, and manufacturing.
4. **Clean Energy and Climate Action:** France plays a crucial role in India's renewable energy goals, particularly through cooperation in solar energy and participation in the International Solar Alliance.

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5. **Cultural and Educational Ties:** France is a centre for higher education and cultural exchange, with thousands of Indian students studying in France.
6. **Scientific and Technological Collaboration:** Joint ventures in space research, science and technology innovations, and collaborations on environmental sustainability are key areas of mutual interest.
7. **Tourism and Diplomacy:** France is a popular destination for Indian tourists, and both countries work together to promote tourism. The diplomatic relationship strengthens through frequent visits, summits, and cultural programs.
8. **Geopolitical Influence:** As a permanent member of the United Nations Security Council (UNSC) and a member of major international forums like G7, G20, and the EU, France supports India's role in global governance and regional security.
9. **People-to-People Connections:** France has a large Indian diaspora, fostering deeper cultural, social, and economic ties between the two nations.

ISSUES HINDERING INDIA-FRANCE RELATIONS:

1. **Trade Imbalance**: India's exports to France are low-value, while it imports high-value products, creating a trade imbalance.
2. **Visa & Immigration**: Visa restrictions, particularly for students and professionals, remain a challenge despite efforts to ease processes.
3. **Defence & Technology Transfer**: Delays in defence contracts and issues around technology and intellectual property rights complicate cooperation.
4. **Nuclear Energy**: Concerns over liability laws and nuclear safety hinder progress in nuclear power projects.
5. **Cultural Differences**: Societal and cultural differences can occasionally affect diplomatic and business interactions.
6. **Terrorism & Security**: Differences in counterterrorism strategies may arise based on national security concerns.
7. **Geopolitical Alignment**: Diverging foreign policy priorities, especially on regional issues, occasionally affect cooperation.
8. **Environmental Challenges**: Joint environmental projects face hurdles in balancing climate goals with economic needs.
9. **Bureaucratic Delays**: Slow execution of agreements in various sectors due to bureaucratic red tape.

COURSE OF ACTION TO STRENGTHEN INDIA-FRANCE TIES:

1. **Boost Bilateral Trade**: Focus on diversifying trade beyond high-value products, encourage Indian exports to France, and reduce the trade imbalance.
2. **Enhance Strategic Partnerships**: Expand cooperation in defence, space, and cybersecurity, ensuring quicker execution of defence contracts and technology transfers.
3. **Increase Cultural and People-to-People Exchanges**: Foster deeper cultural understanding through academic exchanges, tourism, and cultural programs. Encourage more French students to study in India and vice versa.
4. **Facilitate Ease of Movement**: Simplify visa processes for students, professionals, and tourists to encourage more bilateral exchanges.
5. **Collaborate on Innovation and Technology:** Enhance cooperation in clean energy, AI, and high-tech industries through joint research platforms and private sector engagement.
6. **Joint Initiatives on Global Issues:** Align both countries' policies on pressing global issues like climate change, counterterrorism, and sustainable development.
7. **Nuclear Cooperation:** Resolve issues related to nuclear liability and safety and expedite projects on nuclear energy, especially for India's energy needs.

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8. **Strengthen Diplomacy in Multilateral Forums:** Both countries should collaborate more in international organizations like the UN, G20, and WTO to advance common interests and improve their global standing.
9. **Promote Regional Security Cooperation:** Coordinate more closely on regional security challenges, especially in the Indo-Pacific, and share expertise on maritime security and counterterrorism.
10. **Support Green Energy Transition:** Work on joint projects to promote sustainable and clean energy, enhancing collaboration in green technologies.

CONCLUSION

The India-France relationship is poised for further growth, driven by shared interests in defence, clean energy, trade, and strategic cooperation. With both nations working to address issues like trade imbalances, defence technology transfers, and nuclear cooperation, their partnership can be deepened through focused efforts in these areas. Strengthening people-to-people exchanges, facilitating ease of movement, and collaborating on global issues like climate change will also be crucial to fostering a stronger bond. By continuing to build on their strategic, economic, and cultural ties, India and France have the potential to become even more significant global partners in the years to come.

PRELIMS QUESTION:

1. With reference to the recent India-U.S. nuclear cooperation, consider the following statements:

1. The U.S. has removed key Indian institutions like IGCAR, BARC, and Indian Rare Earths from its Entity List, allowing enhanced nuclear cooperation.
2. The Indo-U.S. nuclear deal (123 Agreement) was signed in 2016, granting India access to U.S. nuclear technology.
3. The cooperation aims to address global energy needs, strengthen regional stability, and foster technological advancements in nuclear energy.

How many of the above-givenstatements are correct?

A. Only one

B. Only two

C. All three

D. None

2. Which of the following events marked the formal establishment of diplomatic relations between India and Indonesia?

A. Bandung Conference, 1955

B. India-Indonesia Strategic Partnership, 2005

C. Formal diplomatic relations, 1950

D. India-Indonesia Comprehensive Economic Partnership, 2018

3. Which of the following Indian Navy warships were featured in the Indian Navy's recent tableau focusing on "Aatmanirbhar Bharat"?

A. INS Surat
B. INS Nilgiri
C. INS Vaghsheer
D. All of the above

4. With reference to the India-France bilateral relations, consider the following statements:

1. India and France established diplomatic relations shortly after India's independence in 1947.
2. The Rafale fighter jet deal between India and France was signed in 2014.
3. France has supported India's membership in the United Nations Security Council.

How many of the above-given statements are correct?

A. Only one
B. Only two
C. All three
D. None

ANSWER

1. B	**2. C**	**3. D**	**4.B**

MAINS QUESTION:

1. Discuss the significance of the removal of Indian institutions like IGCAR, BARC, and Indian Rare Earths from the U.S. Entity List. How can India and the U.S. further accelerate their nuclear technology cooperation?

(250 words, 15 marks)

2. Examine the key factors contributing to the strengthening of India-Indonesia bilateral relations in recent years. What challenges do both countries face in further deepening their cooperation?

(250 words, 15 marks)

3. Examine India's role as the first responder in the Indian Ocean Region. What challenges does India face in maintaining its position, and what steps should India take to strengthen its influence and capabilities in the region?

(250 words, 15 marks)

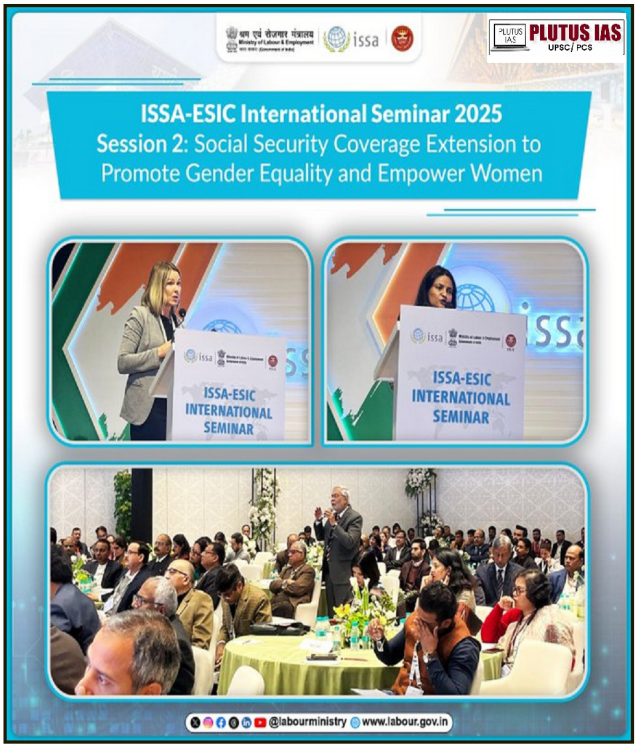
4. Discuss the key areas of cooperation between India and France and how these contribute to strengthening their bilateral relationship.

(250 words, 15 marks)





EMPOWERING THE INFORMAL SECTOR: ADVANCING SOCIAL SECURITY AND FORMALIZATION



WHY IN THE NEWS?

The international seminar hosted by the Ministry of Labour and Employment, Government of India, and the Employees' State Insurance Corporation (ESIC), in collaboration with the International Social Security Association (ISSA), has made significant waves in the news. This two-day event, held at Yashobhoomi in New Delhi, brought together over 200 participants, including policymakers, social security experts, and representatives from Asia Pacific countries. The focus of the seminar on "Formalization and Social Security Coverage for Workers in the Informal Sector" underscored the urgent need for inclusive, sustainable, and equitable social security solutions, especially for vulnerable groups.

WHAT IS THE INFORMAL SECTOR VS THE FORMAL SECTOR?

Aspect	Formal Sector	Informal Sector
Employment	Written contract between employer and employee	No formal contract; informal employment arrangements
Regulation	Heavily regulated by the government	Minimal to no government regulation or oversight
Organization	Well-organized, larger businesses, structured work environments	Unstructured, small enterprises, often family-run, low capital
Rights	Workers have legal rights (social security, paid leave, etc.)	Workers have limited or no legal rights or social protection
Taxation	Subject to income tax and other government taxes	Limited or no taxation, often off-the-books

Job Security	Better job security with clear employment terms	Job security is low, and often unstable work
Examples	Large corporations, government jobs, banks, etc.	Street vendors, casual labour, black market, the gig economy
Legal Protections	Workers are protected by labour laws	Workers are not protected by labor laws

INFORMAL SECTOR IN INDIA:

1. **Rural vs. Urban Informal Sector**

- **Rural Areas:** 80% of informal sector workers are employed, primarily in agriculture and small businesses.
- **Urban Areas:** 60-70% of urban workers are in informal jobs, including street vending, construction, and small retail.

2. **Male vs. Female Participation**

- **Male Workers:** Approx. 75% of informal sector workers are men engaged in construction, manufacturing, and transportation.
- **Female Workers:** Around 25% of informal workers are women, often in domestic work, agriculture, and small-scale services, facing challenges like lower wages and less security.

3. **Regional Disparities**

- **Southern States:** Higher formalization, yet informal employment remains significant (e.g., Kerala, Tamil Nadu).
- **Northern & Eastern States:** Higher reliance on the informal sector, especially in agriculture (e.g., Bihar, UP).
- **Western States:** The informal sector is diversified with trade, manufacturing, and construction (e.g., Maharashtra, Gujarat).

4. **Contribution to GDP**

The informal sector contributes 50-60% to India's GDP.

- **Agriculture:** 17-18% of GDP, with informal workers.
- **Services and Construction:** Significant informal workforce contributions.

IMPORTANCE OF THE INFORMAL SECTOR:

1. **Employment:** Provides millions of jobs, especially to those without job security, playing a vital role in supporting vulnerable populations.
2. **Poverty Reduction:** Offers a crucial income source, particularly in rural and underserved areas, helping reduce poverty.
3. **Skill Development:** Enables individuals to gain practical skills, which can lead to transitioning into the formal economy or self-employment.
4. **Contribution to GDP:** In regions like Asia and Sub-Saharan Africa, the informal sector contributes significantly to GDP, especially in agriculture-based economies.
5. **Flexibility:** Offers flexible work hours, making it ideal for those with caregiving or other personal responsibilities.
6. **Entrepreneurship:** Encourages small-scale entrepreneurship and innovation, addressing local market needs.
7. **Resilience:** Acts as a safety net during economic downturns, offering adaptable work opportunities when formal employment declines.

GOVT. INITIATIVE TO FORMALIZE THE INFORMAL SECTOR:

1. **E-Shram Portal:** Aimed at registering unorganized sector workers for social security benefits. Over 280 million workers have registered, offering access to insurance, job opportunities, and welfare.
2. **Labour Codes:** Four consolidated laws, Wages, Industrial Relations, Social Security, and Safety, aim to simplify labour laws, ensuring fair wages and better welfare for workers while promoting business growth.

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3. **Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM):** A pension scheme for unorganized workers (18-40 years) with incomes below ₹15,000. It offers a ₹3,000/month pension after 60. Over 50 lakh workers enrolled.
4. **PM SVANidhi (Micro Credit for Street Vendors):** Provides micro-loans (up to ₹10,000) to street vendors to restart businesses post-COVID. Over 30 lakh vendors benefited.
5. **PM Kisan Samman Nidhi (PM-KISAN):** Direct income support of ₹6,000/year for small farmers. Over 12 crore farmers are beneficiaries.
6. **World Bank Support:** The World Bank supports India's informal workforce (90% of total workers) through loans and projects aimed at financial inclusion, social security, and improved livelihoods. Over $1 billion was allocated to these initiatives.

ISSUES IN THE INFORMAL SECTOR:

1. **Female Disadvantage**: Women dominate the informal sector but face lower wages, income instability, and a lack of social safety nets, contributing to a decline in female labour force participation (21.2% in 2021).
2. **Lack of Legal Protections**: Informal jobs lack written contracts, paid leave, and minimum wage enforcement. The 2019 Wage Code has limited impact, with some jobs excluded from its scope.
3. **Tax Evasion and Data Gaps**: Informal businesses often evade taxes, and the lack of accurate economic data hinders effective policy and regulation.
4. **Poor Working Conditions**: Long hours, especially in agriculture, and the absence of guidelines contribute to poor working conditions in the informal sector.
5. **Poverty and Vulnerability**: Informal workers are more likely to be poor, with low wages affecting their nutrition and health. They are also highly vulnerable to natural disasters and lack social security support.

WAY FORWARD:

1. **Relaxation of Restrictions:** Relax restrictions on informal businesses to encourage formalization, benefiting both businesses and their employees.
2. **Self-Help Groups:** Form self-help groups to empower informal workers, foster self-sufficiency, and address issues related to working conditions.
3. **National Data System:** Establish a comprehensive statistical database on the informal economy to aid policymakers in making informed decisions.
4. **Vendor Rights and Accountability:** Grant vendors space vending rights to improve accountability for their surroundings. Provide vendor licenses in exchange for fees, which could boost local government revenue and fund public amenities (e.g., water, restrooms, waste collection).
5. **Grievance Redressal:** Implement transparent, officially regulated grievance procedures to regularly address and resolve issues faced by informal workers.
6. **Equal Pay for Women Workers:** Enforce the principle of equal pay for equal work (Article 39(d)), ensuring women farm labourers receive the same pay as their male counterparts through legislative support.

CONCLUSION

The informal sector is vital to India's economy, offering significant employment and contributing to GDP. However, it faces challenges such as poor working conditions, lack of social security, and gender inequality. Government initiatives like the E-Shram Portal and PM-SYM have helped improve financial inclusion and social protection for informal workers. To fully address these issues, a comprehensive approach is needed. This includes relaxing restrictions to encourage formalization, supporting self-help groups, enhancing data collection, and ensuring equal pay for women. Strengthening grievance redressal systems and granting vendors space rights can further improve working conditions. These steps will help create a more inclusive and equitable environment for informal workers, fostering sustainable economic growth.

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INVESTMENT LANDSCAPE IN INDIA

WHY IN THE NEWS?

India's investment landscape is evolving, with a recent State Bank of India (SBI) report highlighting key trends. The report shows a rise in private sector contributions and underscores the growing importance of External Commercial Borrowings (ECBs) in corporate financing. These developments reflect increasing confidence in the Indian economy and greater access to foreign capital. As India seeks stronger economic growth and global integration, understanding these trends is crucial for businesses, investors, and policymakers.

WHAT IS INVESTMENT?

An investment is an asset or item acquired to generate income or gain appreciation. Appreciation is the increase in the value of an asset over time. It requires the outlay of a resource today, like time, effort, and money, for a greater payoff in the future, generating a profit.

Types of Investments

1. **Stocks**: Also called equities or shares, stocks represent ownership in a company and offer the potential for growth through price appreciation and dividends.
2. **Bonds:** Bonds are debt securities where you lend money to a government or corporation in exchange for regular interest payments and the return of the principal amount at maturity.
3. **Mutual Funds:** These pool money from multiple investors to invest in a diversified portfolio of assets, such as stocks, bonds, or a mix of both.
4. **Real Estate:** Involves purchasing properties for investment, either for rental income or potential appreciation in value over time.
5. **Life Insurance Plans:** These policies not only provide financial protection for loved ones but can also serve as an investment, building cash value over time.
6. **Retirement Plans:** These long-term investments, such as pension plans or 401(k)s, help individuals save and grow their money for retirement, often with tax advantages.

STATITICS ON INVESTEMENT IN INDIA:

Category	Details
FDI Inflows	**FY2022**: $84 billion (historic high) **FY2023**: Strong inflows (official figures pending)
FDI by Sector	**Top sectors**: Services (20-25%), IT (software & hardware), Automobiles (including EVs), Construction
FDI by Country	**Top investors**: Singapore (25-30%), Mauritius, US (IT, infrastructure, manufacturing)
Foreign Portfolio Investment (FPI)	**FY2022**: $9.5 billion in inflows
Infrastructure Investments	**National Monetization Pipeline (NMP)**: Rs. 6 lakh crore (US$ 75.18 billion) over 4 years Ongoing investments in roadways, railways, airports
Domestic Investment	**Venture Capital**: Indian startups raised $24 billion in 2022

GOVT. INITIATIVES TO PROMOTE INVESTMENT:

1. **Production Linked Incentive (PLI) Scheme:** Launched across 14 sectors, such as electronics, textiles, and pharmaceuticals, this scheme has attracted significant investments, including over Rs. 12,000 crore (US$ 1.5 billion) in the electronics sector alone.

2. **Ease of Doing Business Reforms: I**ndia's ranking improved from 142 in 2015 to 63 in 2020 in the World Bank's Doing Business Report, reflecting regulatory reforms that make it easier to invest and do business in India.

3. **FDI Policy Reforms:** The government has liberalized FDI policies, allowing 100% FDI in many sectors through the automatic route. This has made India more attractive to global investors.

4. **National Monetization Pipeline (NMP):** Launched to monetize central government assets, the NMP targets investments worth Rs. 6 lakh crore (US$ 75.18 billion) over a four-year period.

5. **Foreign Investment Facilitation Portal (FIFP):** An online platform designed to streamline the approval process for foreign direct investment (FDI), improving transparency and reducing delays.

6. **Sector-Specific FDI Caps:** The government has raised FDI caps in sectors like defence (up to 74% through the automatic route) and relaxed FDI norms in areas such as civil aviation and retail.

7. **Support for Infrastructure Development:** Initiatives like the National Logistics Policy and the continued interest-free loan for state governments aim to stimulate investment in infrastructure projects.

8. **Startup Ecosystem Support:** The government has encouraged startup growth through various schemes and incentives, leading to India becoming the third-largest startup ecosystem globally with over 100 unicorns.

9. **Tax Incentives and Reductions:** Corporate tax rates have been reduced, and measures like the Goods and Services Tax (GST) have streamlined taxation, enhancing India's investment appeal.

ROLE OF INVESTMENT IN ECONOMIC GROWTH:

1. **Capital Formation:** Investment is a key driver of capital formation, which leads to the creation of new infrastructure, machinery, and technology. This boosts productivity across industries, increasing the overall output of an economy.

2. **Job Creation:** Investments, especially in industries like manufacturing, construction, and services, create new job opportunities. This leads to reduced unemployment, higher incomes, and an improvement in living standards.

3. **Increased Productivity:** Investment in new technologies, equipment, and skills enhances productivity in both the short and long term. This helps businesses become more competitive, reducing costs and improving the quality of goods and services.

4. **Innovation and Technological Advancement:** Investment, particularly in research and development (R&D), drives innovation and technological advancements. This enables the economy to stay competitive in a rapidly changing global market.

5. **Infrastructure Development:** Investment in infrastructure (roads, railways, airports, energy, etc.) is crucial for economic growth. It reduces transportation and communication costs, connects markets, and improves the efficiency of the economy.

6. **Foreign Direct Investment (FDI):** FDI brings in foreign capital, which boosts the domestic economy, introduces new technologies, and creates employment. Additionally, it promotes access to global markets and enhances the country's export potential.

7. **Private Sector Growth:** Investment fosters the growth of the private sector by enabling businesses to expand, diversify, and innovate. This leads to greater competition, which in turn improves product quality and services.

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8. **Government Revenue:** Higher levels of investment contribute to greater economic output, which generates higher tax revenues for the government. These revenues can be reinvested in public services and further infrastructure development.

WHAT ARE THE ISSUES HAUNTING INVESTMENT IN INDIA?

1. **Regulatory Complexities**: While significant reforms have been made, the regulatory environment can still be cumbersome and slow-moving in some areas, deterring potential investors.
2. **Land Acquisition Issues**: Land acquisition for large projects continues to be a challenge, particularly with bureaucratic delays, legal hurdles, and protests from local communities.
3. **Infrastructure Gaps**: Despite improvements, infrastructure gaps persist, especially in rural and semi-urban areas. Poor infrastructure increases logistics costs, making it difficult for businesses to remain competitive.
4. **Labour Laws and Skill Mismatch**: While labour laws have been rationalized, implementation issues remain. Additionally, there is a skill mismatch between what industries require and the skills available in the workforce.
5. **Taxation Uncertainty**: Although tax rates have been lowered, periodic changes in tax policies and the complexity of the Goods and Services Tax (GST) can create uncertainty for investors.
6. **Political and Economic Instability**: Fluctuations in policy or political instability at state or national levels can cause concerns for long-term investors, leading to hesitation in making major commitments.
7. **Access to Finance for Small and Medium Enterprises (SMEs)**: While large corporations may find financing opportunities relatively easier, SMEs often struggle to access funds due to stringent criteria and high interest rates.

WAY FORWARD

1. **Improved Regulatory Environment:** The government needs to continue simplifying regulations, addressing loopholes, and offering more clarity to reduce the uncertainty for investors.
2. **Infrastructure Upgrades:** Focus on modernizing and expanding infrastructure to lower business costs and improve connectivity across the country.
3. **Simplification of Land Acquisition:** A more efficient, transparent, and predictable process for acquiring land for businesses will foster investment, especially in infrastructure and manufacturing sectors.
4. **Promoting Skill Development:** Collaboration between the government, industry, and educational institutions to better align skills training with the needs of the economy can help address labour shortages and productivity gaps.
5. **Stable Tax Regime:** The government should work towards ensuring that tax policies are stable, transparent, and investor-friendly to instil greater confidence among investors.
6. **Support for SMEs**: Offering targeted financial assistance and incentivizing investment in SMEs can help broaden the base of the economy and provide greater employment opportunities.
7. **Regional Balance:** Focus on promoting investments in underdeveloped regions to ensure inclusive growth and reduce the urban-rural divide.

CONCLUSION

India's investment landscape has shown significant improvement in recent years, thanks to reforms in FDI policies, infrastructure development, and initiatives like the Production Linked Incentive (PLI) Scheme. With continued focus on improving regulatory efficiency, addressing infrastructure gaps, and supporting small and medium businesses, India can unlock its full investment potential. For both domestic and foreign investors, India presents vast opportunities for growth, innovation, and long-term economic development. However, overcoming the existing challenges and making necessary adjustments will be key to ensuring sustained growth in the years to come.

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DRIVING INNOVATION AND GROWTH: THE NATIONAL MANUFACTURING MISSION

WHY IN THE NEWS?

The announcement of the National Manufacturing Mission by the Union Minister for Finance and Corporate Affairs, Smt. Nirmala Sitharaman, in the Union Budget 2025-26, is in the news because it marks a significant step in promoting the "Make in India" initiative. The mission is aimed at supporting small, medium, and large industries with a focus on enhancing the manufacturing sector's growth and efficiency. The mission has five main focal areas: improving the ease and cost of doing business, creating a future-ready workforce, boosting the MSME sector, providing access to advanced technologies, and ensuring the production of high-quality products. It will also push forward Clean Tech manufacturing, supporting industries like solar energy, electric vehicle (EV) batteries, wind turbines, and other sustainable technologies.



MANUFACTURING SECTOR IN INDIA:

Aspect	Details
Growth	The manufacturing sector's output grew by 21.5% in 2022-23. The sector is projected to grow at 12-14% annually in the next 5 years.
Employment	The sector employs around 50 million people (approx.). Major industries include automotive, engineering, chemicals, pharmaceuticals, and consumer durables.
Foreign Investment	FDI equity inflows in the manufacturing sector grew by 23% in FY 2022-23, totalling $27.2 billion. India is the 5th largest recipient of FDI in the world.
Innovation	The government is promoting AI, robotics, and IoT with initiatives like Make in India and Digital India. Approximately $1.2 billion was invested in robotics in India in 2023 alone.
Sustainability	Around 50% of manufacturers in India are adopting sustainable practices. The sector is working towards achieving Net Zero emissions by 2050 under the National Action Plan on Climate Change (NAPCC).

NATIONAL MANUFACTURING MISSION OBJECTIVES AND TARGET :

1. **Enhance Manufacturing Competitiveness:** Streamline business processes and reduce regulatory burdens. Improve infrastructure to attract manufacturing investments.
2. **Skill Development:** Focus on training and upskilling the workforce. Prepare workers for modern manufacturing technologies and emerging sectors.
3. **MSME Promotion:** Provide dedicated support for small and medium enterprises (SMEs). Facilitate

growth, innovation, and competitiveness of SMEs.

4. **Technology Adoption:** Promote research, development, and technology transfer. Encourage the adoption of advanced manufacturing technologies.
5. **Quality Improvement:** Promote quality standards and certifications. Ensure global competitiveness of Indian manufactured goods.

TARGET AREAS OF FOCUS:

1. **Clean Tech Manufacturing:** Support sustainable technologies like solar PV cells, EV batteries, and wind turbines.
2. **Defense Manufacturing:** Increase domestic production of defence equipment for self-reliance.
3. **Electronics Manufacturing:** Foster a robust ecosystem for electronics production.
4. **Pharmaceuticals and Medical Devices:** Enhance domestic manufacturing capabilities in the healthcare sector.
5. **Textile Manufacturing:** Boost domestic production of textiles and garments with a focus on innovation, sustainability, and exports.
6. **Automobile Manufacturing:** Strengthen the automotive sector, focusing on electric vehicles (EVs), component manufacturing, and increasing production capacity.
7. **Heavy Machinery and Equipment:** Support the growth of industries manufacturing heavy machinery, equipment, and tools for infrastructure development and industrial use.

NATIONAL MANUFACTURING MISSION SIGNIFICANCE:

1. **Economic Growth:** By boosting the manufacturing sector's contribution to the GDP, the mission stimulates economic development, creating a more resilient economy.
2. **Job Creation:** It generates millions of jobs, especially for skilled labour, thus addressing unemployment and promoting socio-economic stability.
3. **Technological Innovation:** The mission fosters the adoption of cutting-edge technologies, encouraging research, development, and innovation within manufacturing.
4. **Export Competitiveness:** The mission enhances India's export potential, helping to balance trade deficits and strengthening global economicties.
5. **Infrastructure Development:** Manufacturing growth requires enhanced infrastructure, such as industrial hubs, logistics networks, and transportation corridors.
6. **Skill Development:** Focuses on upskilling and reskilling the workforce to meet the evolving demands of modern manufacturing.
7. **Sectoral Growth:** The mission targets key sectors such as clean tech, defence, electronics, and pharmaceuticals, fostering the development of critical industries that are vital for economic self-reliance and innovation.

MANUFACTURING SECTOR ISSUES:

Issue	Description
Supply Chain Disruptions	
Natural Disasters	Events like floods, earthquakes, and hurricanes cause delays, interruptions, and damage to production.
Geopolitical Tensions	Trade conflicts, tariffs, and political shifts disrupt global supply chains and markets.
COVID-19 Pandemic	The pandemic led to widespread disruptions, causing shortages and delays in raw materials and products.

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Labour Shortages	
Filling Job Openings	Difficulty in filling job vacancies and incredibly skilled roles due to a lack of workers entering the sector.
Automation and Robotics	While automation fills some gaps, human labour is still needed for maintenance and oversight.
Sustainability Pressures	
Environmental Regulations	Stricter regulations and consumer demand push manufacturers to adopt more sustainable production methods.
Consumer Expectations	Growing demand for eco-friendly and sustainably produced goods.
Cybersecurity Risks	
Cyberattacks	Cyberattacks can disrupt production, steal sensitive data, and damage equipment, causing financial and reputational harm.
Technological Adaptation	
Keeping up with Technological Advancements	Manufacturers need to adapt to AI, automation, and IoT to remain competitive.
Digital Transformation	Embracing digital tools like smart factories and data analytics to improve efficiency and reduce costs.

WAY TO MAKE NATIONAL MANUFACTURING MISSION A GAME CHANGER:

1. **National Policy and Incentives:** Develop a National Robotics Strategy with clear goals and funding mechanisms. Offer tax benefits and subsidies for companies investing in robotics.
2. **Research and Development:** Support research institutions and startups to develop cost-effective, tailored robotic solutions. Focus on advanced robotics like cobots and autonomous navigation.
3. **Skill Development:** Establish training programs for robotics operation, programming, and maintenance. Partner with educational institutions to integrate robotics education into engineering curricula.
4. **Industry-Specific Implementation:** Prioritize sectors like automotive, electronics, pharmaceuticals, and food processing.
5. **Collaboration and Partnerships:** Encourage global partnerships for technology transfer and expertise. Facilitate collaboration among research institutions, industry players, and government agencies.
6. **Technological Advancements:** Integrate AI and machine learning for adaptive learning and complex task execution.

CONCLUSION

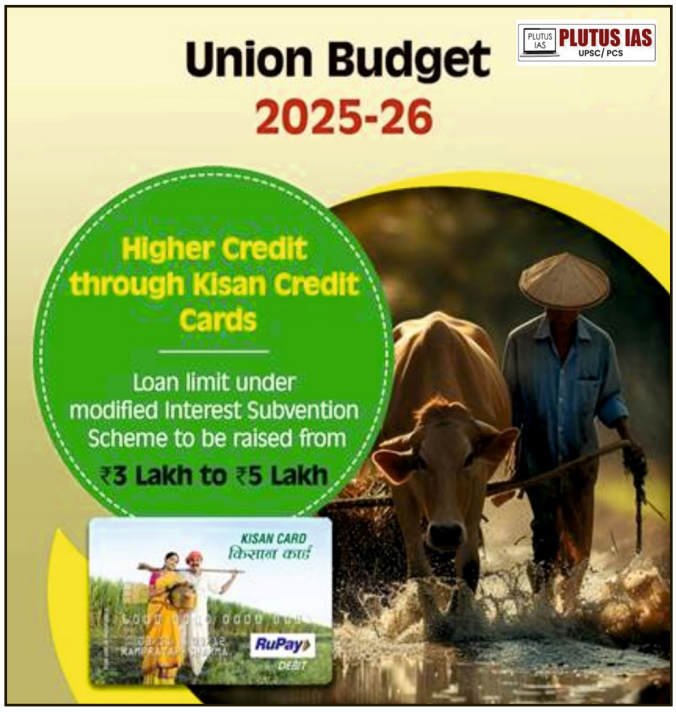
The National Manufacturing Mission announced in the Union Budget 2025-26 is a pivotal initiative aimed at transforming India's manufacturing sector. By addressing key areas such as improving ease of doing business, fostering innovation, supporting MSMEs, and adopting advanced technologies, the mission strives to make India a global manufacturing hub. Focus on clean tech, defence, electronics, and other critical sectors aligns with the goal of enhancing economic self-reliance, job creation, technological advancement, and export competitiveness. For this mission to be a game changer, strategic integration of automation, AI, robotics, and skill development will be crucial in ensuring India's manufacturing sector is future-ready and competitive on the global stage.

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REVOLUTIONIZING AGRICULTURAL FINANCE: ENHANCING CREDIT ACCESS FOR FARMERS

WHY IN THE NEWS?

The Union Budget 2025-26 has introduced key measures to strengthen agricultural financing, particularly through the Kisan Credit Card (KCC) scheme. A major highlight is the increase in the loan limit under the Modified Interest Subvention Scheme from ₹3 lakh to ₹5 lakh, reflecting the government's commitment to financial security for farmers and boosting agricultural productivity. With 46.1% of the population engaged in agriculture and allied activities, ensuring accessible credit remains a top priority.



WHAT IS THE KCC?

Kisan Credit Card (KCC) Scheme

The Kisan Credit Card (KCC) Scheme was introduced to ensure hassle-free and affordable credit for farmers. It provides easy access to institutional credit at lower interest rates, helping farmers meet various financial needs, including:

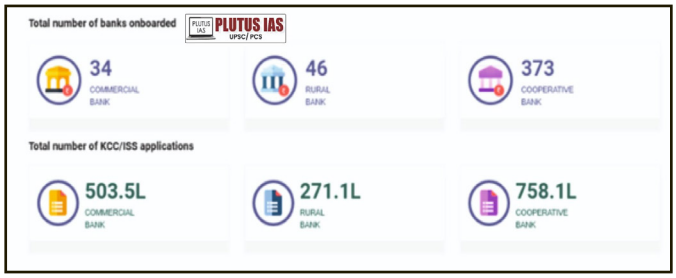
- Short-term & long-term cultivation expenses
- Post-harvest costs
- Consumption needs
- Working capital for allied agricultural activities

BACKGROUND OF THE KISAN CREDIT CARD (KCC) SCHEME

The Kisan Credit Card (KCC) Scheme was introduced in August 1998 by Indian public sector banks to provide farmers with easy access to credit for their agricultural needs. The model scheme was formulated by the National Bank for Agriculture and Rural Development (NABARD) based on the recommendations of the R. V. Gupta Committee. The primary objective was to offer hassle-free credit facilities to farmers, ensuring timely financial support for crop cultivation, post-harvest expenses, and allied agricultural activities.

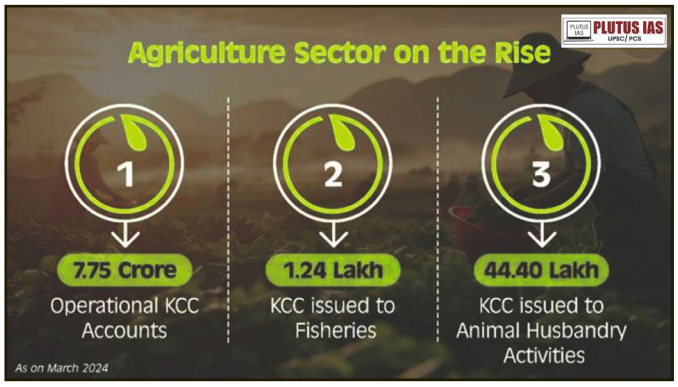
OBJECTIVES OF THE KISAN CREDIT CARD (KCC) SCHEME

1. **Meeting Short-Term Credit Needs** – Providing funds for crop cultivation and seasonal agricultural activities.
2. **Covering Post-Harvest Expenses** – Ensuring financial support for storage, transportation, and processing of produce.
3. **Facilitating Produce Marketing Loans** – Helping farmers bridge financial gaps until they sell their produce.
4. **Supporting Household Consumption Needs** – Preventing reliance on informal credit for essential family expenses.
5. **Ensuring Working Capital for Farm Assets** – Assisting in the maintenance and operation of farm equipment and machinery.
6. **Providing Investment Credit for Allied Activities** – Supporting animal husbandry, dairying, fisheries, and other agricultural extensions.



HOW KCC HELPS FARMERS

1. **Easy Access to Institutional Credit** – Provides timely and affordable loans, reducing farmers' dependence on informal moneylenders.
2. **Support for Cultivation & Post-Harvest Activities**: This ensures the availability of funds for crop production, harvesting, and storage costs.
3. **Marketing & Short-Term Loans** – Helps farmers manage finances until they sell their produce at competitive market rates.
4. **Household Consumption Needs** – Offers financial support for essential household expenses, preventing reliance on high-interest loans.
5. **Working Capital for Farm Assets** – Assists in the maintenance of farming equipment, irrigation, seeds, and fertilisers.
6. **Investment in Allied Activities** – Supports animal husbandry, dairying, and fisheries, expanding income opportunities for farmers.
7. **Collateral-Free Loans**—This allows banks to offer loans up to ₹1.60 lakh without collateral, ensuring financial security and easy credit access.





CHALLENGES FACED BY THE FARMERS IN ACCESSING THE FORMAL CREDIT:

1. **Limited Access for Marginal & Small Farmers:** Approximately 86.2% of India's farmer population comprises small and marginal farmers. Of these, about half are unable to borrow from either formal or informal sources, indicating a substantial gap in credit accessibility.
2. **High Dependency on Informal Credit:** Despite efforts to enhance institutional credit, a significant proportion of small farmers still lack access, leading many to rely on informal lenders who charge exorbitant interest rates.
3. **Lack of Collateral:** Many farmers, especially tenant farmers and sharecroppers, lack land ownership documents, making them ineligible for institutional loans.
4. **Cumbersome Loan Application Process:** Farmers often face challenges in filling out the application forms required for accessing credit. This lack of knowledge may lead to farmers being unable to provide the necessary information or documents, resulting in their applications being rejected.
5. **Regional Imbalance in Credit Distribution:** There is a wide regional imbalance and unequal access by small farmers to institutional credit,

with some regions receiving more institutional credit than others.

6. **Inadequate Loan Amounts:** Many farmers receive lower loan amounts than required, limiting their ability to invest in better technology, machinery, and equipment.

7. **Delayed Loan Disbursement:** The slow processing of loans affects farmers' ability to purchase inputs like seeds, fertilizers, and pesticides on time.

8. **High Interest Rates on Unsubsidized Loans:** Approximately 75% of farmers cited interest rates as a challenge in obtaining formal financing, indicating that high interest rates remain a significant barrier.

9. **Limited Financial Literacy:** Many farmers lack awareness about available credit schemes, interest subsidies, and financial management, restricting their access to formal credit benefits

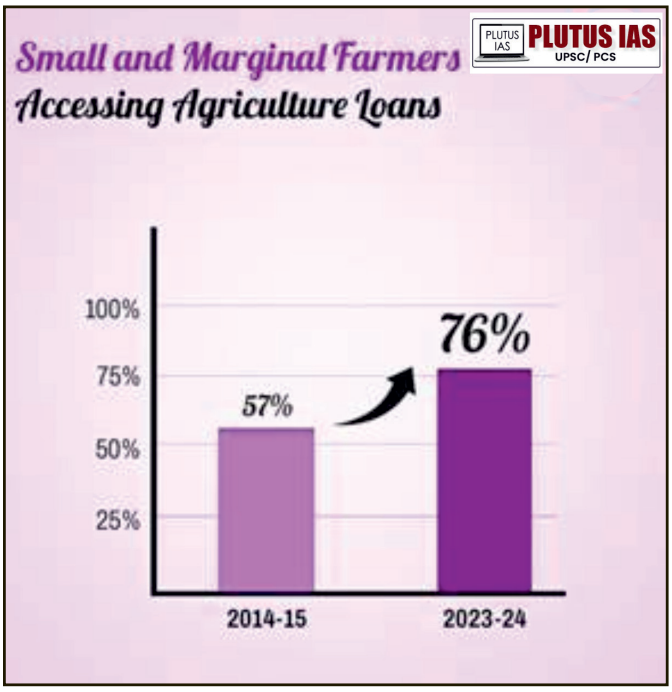
KCC-RELATED ISSUES AND LIMITATIONS

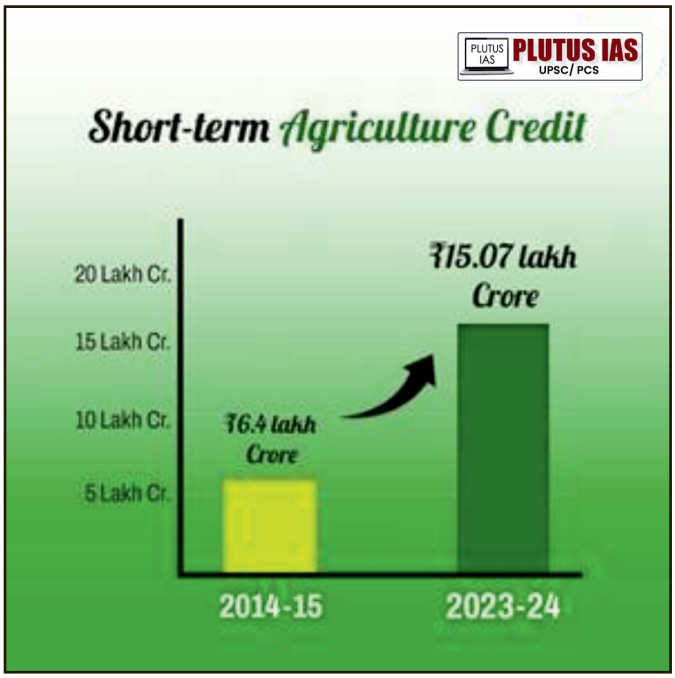
- **Loan Limit Restrictions** – The loan limit for KCC is determined by the District Level Technical Committee (DLTC) or State Level Technical Committee (SLTC), which may not always align with the actual financial needs of farmers.

- **Margin Requirements** – Farmers must maintain a margin based on the loan amount. For instance, loans above ₹1,60,000 to ₹10 lakh require a 10% margin, making access to higher credit more challenging.

- **Security & Collateral** – Loans up to ₹1,60,000 require hypothecation of crops or assets created from the loan. However, for loans exceeding ₹1,60,000, a charge on land is required, limiting access for farmers without land ownership.

- **Insurance Period Constraints** – The insurance period for KCC loans depends on the annual or three-year premium paid, which can be an additional financial burden for small farme





RECOMMENDATIONS OF THE VIJAY SHANKAR VYAS COMMITTEE(2003) TO EXPAND CREDIT FLOW TO AGRICULTURE

1. **Expansion of Direct Agricultural Lending:** Banks should increase direct agricultural lending to 12% of net bank credit within two years and 13.5% in the following two years. Indirect lending should be 6% initially, reducing to 4.5% thereafter.

2. **Integration of Investment and Production Credit:** Merging investment and production credit would improve the overall credit flow. District-level scales of finance should be revised to align with modern, market-driven agriculture.
3. **Strengthening Marketing and Warehouse Financing:** Pledge financing and advances against warehouse receipts should be promoted. Credit for marketing and post-harvest storage should be expanded.
4. **Human Resource & Training Development in Rural Banks:** The lack of trained personnel is a major bottleneck in rural financial institutions. Posting technical staff at branch and head offices is necessary for efficient credit delivery.
5. **Leveraging Technology & Local Institutions for Credit Outreach:** Use of SHGs, NGOs, Panchayati Raj Institutions, and Farmers' Clubs as development agents to increase credit outreach. Implementing village information kiosks for agriculture and credit dissemination.
6. **Legal & Institutional Reforms for Credit Access:** Recognising tenant's and sharecroppers' rights in land records to facilitate access to institutional credit. Treating cooperatives and banks equally regarding charges and stamp duties for loan recovery.

KEY RECOMMENDATIONS OF THE ASHOK DALWAI COMMITTEE(2016):

1. **Enhanced Credit Access for Small & Marginal Farmers:** Improve credit availability for tenant farmers, sharecroppers, and landless labourers. Small and marginal farmers hold 80% of total land holdings but receive only 27% of total credit disbursements. Their credit share should be raised to 40%. Expand Kisan Credit Card (KCC) coverage with simplified procedures.
2. **Strengthening Institutional Credit Mechanisms:** Improve Regional Rural Banks (RRBs) and Cooperative Banks to ensure last-mile credit delivery. Encourage NBFCs and fintech participation in rural credit.
3. **Targeted Interest Subvention & Subsidies:** Shift from universal interest subsidies to a targeted benefit approach for small farmers. Implement Direct Benefit Transfer (DBT) in loan-linked subsidies.
4. **Integration of Digital Technology in Credit Disbursement:** Link credit access to Aadhaar and digital banking for faster and transparent loan disbursal. Use AI-based risk assessment to reduce loan defaults.
5. **Improving Risk Management & Credit-Linked Insurance:** Ensure all farmer loans are linked to crop insurance (PMFBY) for financial security. Promote warehouse receipt financing to help farmers avoid distress sales.

CONCLUSION

The Kisan Credit Card (KCC) Scheme has played a pivotal role in enhancing agricultural credit accessibility, ensuring that farmers receive timely and affordable financial assistance. With the increased financial support under the Union Budget 2025-26, the government reaffirms its commitment to empowering farmers and strengthening rural economies. These initiatives contribute to agricultural growth, financial security, and sustainable rural development, paving the way for a resilient and self-sufficient farming community in India.

PRELIMS QUESTION:

1. **Which of the following initiatives is aimed at registering unorganized sector workers for social security benefits?**

A. PM Kisan Samman Nidhi

B. E-Shram Portal

C. Pradhan Mantri Shram Yogi Maan-dhan

D. PM SVANidhi

2. **With reference to India's investment landscape, consider the following statements:**

1. India recorded a historic FDI inflow of $84 billion in FY2022, with services and IT sectors receiving the largest share of investments.

2. The National Monetization Pipeline (NMP) targets Rs. 6 lakh crore (US$ 75.18 billion) worth of investment in infrastructure assets over five years.

3. Foreign Portfolio Investments (FPI) into India reached $24 billion in FY2022, driven by strong domestic growth and reforms in financial markets.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

3. Which of the following statements are correct about the National Manufacturing Mission?

1. The mission aims to promote the growth of both small and large industries in India.
2. It focuses only on the development of the clean tech sector.
3. One of its goals is to enhance the competitiveness of Indian manufactured goods in the global market.

Select the correct answer using the code given below:

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

4. The Kisan Credit Card loan is mandatorily used for which of the following purposes?

1. Meeting short-term credit requirements for crop cultivation.
2. Covering post-harvest expenses.
3. Availing produce marketing loans.
4. Fulfilling household consumption needs of farmers.
5. Providing working capital for farm assets and allied agricultural activities.
6. Meeting investment credit requirements for agriculture and allied sectors.

Select the correct answer using the code given below:

A. 1, 2, and 6 only

B. 2, 3, 4 and 6 only

C. 1, 2, 3, and 4 only

D. 1, 2, 3, 4, 5 and 6

ANSWER

1. B	**2. B**	**3. C**	**4. D**

MAINS QUESTION:

1. Discuss the government's initiatives to address these challenges and the way forward for formalizing the informal sector.

(250 words, 15 marks)

2. Discuss the challenges that India faces in attracting and retaining investments, especially in sectors like infrastructure, defence, and technology. Suggest policy measures to address these challenges and ensure sustainable growth in these sectors.

(250 words, 15 marks)

3. Discuss the significance of the National Manufacturing Mission in strengthening India's manufacturing sector and its impact on the economy. How can it help India achieve self-reliance in key sectors?

(250 words, 15 marks)

4. The Kisan Credit Card (KCC) scheme has been instrumental in providing timely and affordable credit to farmers, making it the backbone of agricultural financing in India. Discuss the significance of KCC in ensuring financial inclusion for farmers and suggest measures to enhance its effectiveness.

(Answer in 250 words)

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INDIAN COFFEE BREWS GLOBAL DEMAND

WHY IN THE NEWS?

India's coffee exports are surging on robust global demand, reaching a record $1.29 billion in FY 2023-24, nearly double the $719.42 million achieved in 2020-21. This surge is driven by a growing international appetite for India's unique coffee flavours, with major markets like Italy, Belgium, and Russia leading the demand. While unroasted Arabica and Robusta beans dominate exports, rising demand for value-added products like roasted and instant coffee presents significant growth opportunities for the Indian coffee industry. Moreover, the domestic market is witnessing a surge in coffee consumption, fueled by the rise of cafe culture, increased disposable incomes, and a shift in consumer preferences towards coffee over tea.



COFFEE IN INDIA:



COFFEE PRODUCTIONS:

Climate and Environmental Conditions for Coffee Growth

Factor	Description
Temperature	Ideal range: 73–82 °F (23–28 °C). No variety tolerates temperatures near 32 °F (0 °C). High temperatures during flowering can reduce bean size.
Rainfall	Requires 60–80 inches (1,500–2,000 mm) annually. Low rainfall and cool temps during the growing season can result in small beans. High rainfall and low temps during harvest can lead to bean defects.
Humidity	High humidity promotes diseases and pests.
Sunlight	Requires some shade, especially in hotter climates.
Altitude	Arabica grows best at elevations of 2,000–6,500 ft (600–2,000 m).

Soil	Physical and chemical soil characteristics are critical for healthy growth.
Wind	Wind can negatively affect coffee plants.
Topography	The landscape and landform impact coffee plant growth.
Climate Change	Rising temperatures and unpredictable rainfall patterns can reduce yields, create smaller beans, and increase vulnerability to pests.

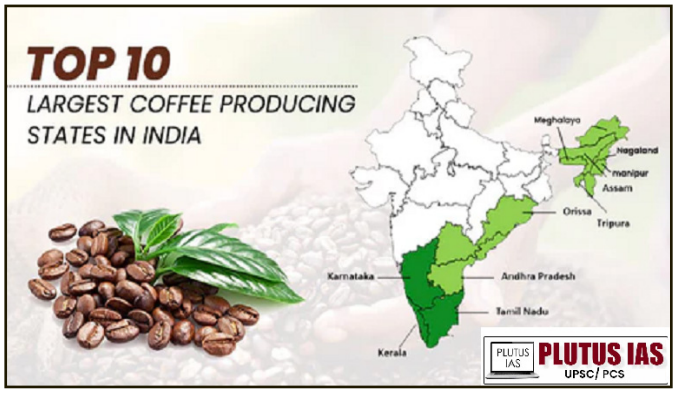
COFFEE BOARD OF INDIA (CBOI):

Aspect	Description
Establishment	Constituted under Section 4 of the Coffee Act, 1942.
Composition	The Board comprises 33 Members, including the Chairperson.
Headquarters	Located in Bengaluru, Karnataka, India.
Powers	Authority to regulate and promote coffee production and export. The ability to provide financial assistance to growers. Power to conduct research and implement welfare measures for labourers.
Functions	**Research & Development**: Focus on improving coffee quality and productivity. **Promotion**: Promote coffee within India and abroad. **Extension**: Provide training and skill development to coffee growers. **Welfare Measures**: Ensure better working conditions for labourers in coffee plantations. **Market Intelligence**: Gather data to assist in marketing and export strategies. **Export Promotion**: Enhance India's coffee exports globally.

FACTORS FOR THE HIGH DEMAND FOR INDIAN COFFEE:

1. **Quality:** Indian coffee, especially Arabica, is valued for its mild, aromatic flavour. In 2020, India produced about 5.4 million 60-kg bags, with Arabica being a key contributor.
2. **Unique Flavors:** India produces varieties like Arabica, Robusta, and Monsooned Malabar. The Monsooned Malabar, processed by a unique method, is particularly popular in Europe.
3. **Sustainable Practices:** Over 20% of India's coffee is organic, aligning with global demand for eco-friendly products.
4. **Global Recognition:** India is the 8th largest coffee exporter, with over 4.1 million 60-kg bags exported in 2020, mainly to the US, Italy, and Germany.
5. **Growing Coffee Culture:** India's coffee market grows by 15-20% annually, driven by expanding café culture, especially in cities like Bengaluru and Mumbai.
6. **Competitive Pricing:** Indian Robusta is 30-40% cheaper than other global sources, making it attractive to international buyers.
7. **Export Strength:** India exports 70% Robusta and 30% Arabica, with major markets in the US, Russia, and Italy.
8. **Ideal Climate:** Coffee is grown in regions like Karnataka and Kerala, where conditions (altitude of 600-1,200 meters) are perfect for both Arabica and Robusta.

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ISSUES GRAPPLED WITH COFFEE PRODUCTION IN INDIA:

1. **Climate Change and Unpredictable Weather:** Erratic rainfall, rising temperatures, and extreme weather events like droughts and floods disrupt coffee flowering and fruit maturation, leading to reduced yield and quality.
2. **Pests and Diseases:** Coffee is susceptible to pests (e.g., coffee berry borer) and diseases (e.g., coffee leaf rust), affecting crop health and reducing quality. Effective pest management is costly and challenging, particularly for small farmers.
3. **Labor Shortage and High Costs:** Coffee farming requires manual labour for tasks like harvesting, but there is a shortage of skilled labour, and labour costs are rising. This can lead to delays in harvesting and affect bean quality.
4. **Inadequate Infrastructure:** Poor transportation and storage facilities in coffee-growing regions delay the movement of harvested coffee, affecting quality. Lack of proper storage also leads to quality degradation post-harvest.
5. **Water Scarcity and Irrigation Issues:** Coffee needs consistent water, and in areas with unreliable irrigation, water stress during critical growth stages affects yield and quality.
6. **High Input Costs and Low Profits:** The cost of seeds, fertilizers, and labour is high, while global price volatility leads to uncertain income, squeezing profit margins for farmers.
7. **Limited Access to Modern Technology:** Adoption of modern farming practices and machinery is limited, leading to inefficiencies and lower productivity, especially for small-scale farmers.
8. **Aging Plantations:** Older coffee plantations lead to declining yields and quality. Replanting new trees is costly and requires long-term investment.
9. **Post-Harvest Losses:** Improper drying, storage, and processing of beans result in quality loss and reduced market value.
10. **Market and Price Instability:** Fluctuating global coffee prices make it difficult for farmers to predict their income, often resulting in financial instability.

WAY FORWARD:

1. **Awareness:** Educating farmers through training and workshops equips them with skills in pest control, disease management, and harvesting techniques, enabling informed decision-making and sustainable practices.
2. **Research:** Investing in research helps identify innovative solutions, such as disease-resistant varieties and improved farming techniques, addressing key farming challenges.
3. **Financial Support:** Access to credit and resources enables farmers to invest in equipment, inputs, and technology, enhancing productivity and helping to tackle challenges effectively.
4. **Government Support:** Government policies, subsidies, and research funding play a crucial role in supporting farmers and promoting sustainable coffee farming practices.

CONCLUSION

India's coffee industry is growing, with record exports driven by global demand for unique varieties. Challenges like climate change, pests, labour shortages, and infrastructure issues affect productivity and quality. To address these, India needs to focus on educating farmers, investing in research, providing financial support, and implementing government policies. These efforts will help farmers adapt to challenges, boost productivity, and sustain growth, reinforcing India's position as a top coffee exporter and growing domestic market.

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NATIONAL CRITICAL MINERAL MISSION

WHY IN THE NEWS?

Prime Minister Narendra Modi has termed a major step towards self-reliance in critical minerals to decisions taken by the Union Cabinet yesterday. In a social media post, the Prime Minister said that the Union Cabinet's decision on the National Critical Mineral Mission will encourage India's high-tech, clean energy, defence and other key industries. He added that the decision relating to the revised ethanol procurement price will help boost ethanol production and blending targets. The Prime Minister highlighted that it will also help reduce crude imports, empower farmers and promote clean energy.



WHAT IS THE NATIONAL CRITICAL MINERAL MISSION?

The National Critical Mineral Mission (NCMM) is an initiative launched by the Government of India to secure and enhance the country's access to critical minerals that are vital for sectors like high-tech industries, clean energy, and defence. This mission aims to reduce India's dependency on foreign sources for these minerals, improve domestic capabilities, and position India as a self-reliant nation in this crucial sector.

1. **Exploration and Mining:** It focuses on intensifying the exploration of critical minerals within India and in offshore areas. The mission aims to speed up the entire mining process, including regulatory approvals, to make it easier to extract these minerals.
2. **Financial Incentives:** The mission offers incentives to encourage exploration, recovery from waste materials (like mining overburden and tailings), and the development of new mining technologies.
3. **Supply Chain Development:** It aims to build a strong domestic supply chain by setting up mineral processing parks and encouraging the development of processing facilities within India.
4. **Research and Innovation:** The mission will promote research into critical mineral technologies and establish a Centre of Excellence for Critical Minerals, fostering innovation to make mining and processing more efficient.
5. **International Engagement:** The mission encourages Indian companies, both public and private, to acquire critical mineral assets abroad and enhance trade with resource-rich nations.
6. **Stockpiling:** It involves the creation of a stockpile of critical minerals within India, ensuring a steady domestic supply.

WHAT ARE THE CRITICAL MINERALS?

A "critical mineral" is a mineral considered essential for national security or economic development due to its limited supply and vital role in advanced technologies, while a "major mineral" refers to a mineral needed in large quantities by the human body, and an "atomic mineral" is a mineral containing significant amounts of radioactive elements used primarily for nuclear energy purposes

CRITICAL MINERALS UNDER THE MINES AND MINERALS (DEVELOPMENT AND REGULATION) ACT 1957

The Mines and Minerals (Development and Regulation) Amendment Act, 2023 introduced significant reforms in the mining sector, particularly focusing on critical minerals.

1. **Critical Minerals Under the MMDR Act:** Critical minerals are essential for advanced technologies, energy security, and economic development.

These minerals are crucial for industries such as electronics, renewable energy, and defence.

2. **Omission of Six Atomic Minerals:** The amendment removed six minerals from the list of 12 atomic minerals specified in Part B of the First Schedule of the Act. These include:

- Lithium-bearing minerals
- Titanium-bearing minerals and ores
- Beryl and other beryllium-bearing minerals
- Niobium and Tantalum-bearing minerals
- Zirconium-bearing minerals

3. **Exclusive Central Government Authority for Auctions:** The amendment empowers the Central Government to auction mineral concessions for critical minerals listed in Part-D of the First Schedule of the Act. The revenue from these auctions will go to the respective State Governments.

4. **Introduction of Exploration Licences:** A new provision allows for exploration licences for deep-seated and critical minerals to encourage private investment and enhance domestic production.

CRITICAL MINERAL VS MAJOR MINERAL VS ATOMIC MINERALS:

Type of Mineral	Examples	Importance	Defining Factor
Critical Minerals	Lithium, cobalt, nickel, rare earth elements	Essential for advanced technologies (electric vehicles, renewable energy, electronics)	Strategic value, potential supply chain disruptions, and scarcity
Major Minerals	Calcium, phosphorus, potassium, sodium, magnesium	Necessary for basic bodily functions (e.g., bone health, muscle function, energy transfer)	Required in large quantities by the human body
Atomic Minerals	Uranium, thorium	Used for nuclear power generation and weapons development	High levels of radioactivity

SIGINIFICANCE OF CRITICAL MINERALS IN VARIOUS SECTOR:

1. **Electric Vehicles**: Lithium, cobalt, and nickel are crucial for battery technology in electric vehicles (EVs) and energy storage systems, supporting the shift to clean transportation.
2. **Renewable Energy**: Rare earth elements, lithium, cobalt, and silicon are used in wind turbines, solar panels, and energy storage, facilitating the transition to renewable energy sources.
3. **Electronics and Telecommunications**: Rare earth elements, gold, copper, and tantalum are essential for manufacturing electronic devices, circuit boards, and telecommunications infrastructure.
4. **Defense and National Security**: Rare earth elements, titanium, cobalt, lithium, and tungsten are key for producing advanced weapons, defense technologies, and military equipment.
5. **Aerospace and Aviation**: Titanium, aluminum, rare earth elements, and cobalt are used in the construction of aircraft, spacecraft, and high-performance engines.
6. **Medical Devices and Healthcare**: Cobalt, titanium, platinum, gold, and rare earth elements are important for medical implants, diagnostic tools, and medical equipment.
7. **Manufacturing and Industrial Technologies**: Manganese, chromium, nickel, and rare earth

elements are essential for steel production, durable alloys, and industrial machinery.

8. **Agriculture**: Potassium, phosphorus, and nitrogen are vital for fertilizers that support global food production.

WHAT ARE THE LIMITATIONS ON EXPLORING FULL POTENTIAL OF CRITICAL MINERALS IN INDIA?

1. **Geological and Exploration Challenges**: Lack of comprehensive geological data and complex exploration techniques hinder discovery and extraction.
2. **Regulatory and Policy Constraints**: Slow approval processes, complex licensing, and bureaucratic delays slow down mining projects.
3. **Environmental Concerns**: Mining leads to ecological damage, and public opposition can delay projects.
4. **Inadequate Infrastructure**: Poor transport networks and insufficient processing facilities increase costs and hinder mineral extraction.
5. **Investment and Funding**: High capital requirements and financial risks deter private investment in exploration and processing.
6. **Global Supply Chain Dependencies**: Heavy reliance on imports and geopolitical risks limit self-sufficiency.
7. **Technology and Research Gaps**: Lack of advanced extraction technologies and insufficient R&D limit efficient mining and processing.
8. **Geopolitical and Strategic Issues**: Global competition for resources and trade barriers complicate access to critical minerals.
9. **Skilled Workforce Shortage**: A lack of trained professionals in mining and mineral processing restricts growth.

WAY FORWARD TO TAP THE POTENTIAL OF CRITICAL MINERALS:

1. **Enhanced Geological Surveys**: Conduct more extensive geological surveys to identify untapped mineral deposits, especially in under-explored regions and offshore areas.
2. **Streamlining Regulatory Processes**: Simplify and expedite the regulatory approval process for mining projects, reducing bureaucratic hurdles and making it easier for investors to access and develop critical mineral resources.
3. **Investing in Infrastructure**: Develop better transportation networks, mining infrastructure, and processing facilities to reduce logistical costs and improve the efficiency of mineral extraction and processing.
4. **Promoting Private Investment**: Offer attractive financial incentives and tax breaks to encourage private companies to invest in exploration, mining, and the development of new technologies for efficient extraction.
5. **Research and Innovation**: Invest in R&D to develop advanced mining and mineral processing technologies, focusing on sustainability, efficiency, and reducing environmental impact. Establish more research centers to foster innovation in the sector.
6. **Securing Supply Chains**: Establish strategic partnerships with resource-rich countries, create stockpiles of critical minerals, and diversify import sources to reduce dependence on a few foreign suppliers.
7. **Developing Skilled Workforce**: Invest in specialized training and education programs to develop a skilled workforce capable of handling advanced mining and mineral processing technologies.
8. **Sustainability Focus**: Implement environmentally responsible mining practices, including better waste management and reclamation methods, to address concerns about ecological damage and community opposition.
9. **International Engagement**: Strengthen international trade relations and acquisitions to secure critical mineral assets abroad, ensuring a consistent and diverse supply chain for India's future needs.

CONCLUSION

The National Critical Mineral Mission (NCMM) is a strategic initiative to ensure India's self-reliance in

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critical minerals, which are essential for the growth of sectors like high-tech industries, clean energy, defense, and manufacturing. While challenges such as exploration difficulties, regulatory delays, and infrastructure gaps exist, there are clear opportunities to unlock the full potential of these resources through better research, investments in infrastructure, and policy reforms. By addressing these limitations, India can position itself as a global leader in the critical mineral sector, ensuring both economic growth and national security.

Crowd Disaster: The Unnoticed Yet Deadly Disaster

WHY IN THE NEWS?

A deadly stampede occurred at the Maha Kumbh Mela in Prayagraj, resulting in dozens of fatalities. The tragedy took place before dawn as millions of devotees gathered to take a ritual dip in the sacred river on the festival's most auspicious day. The massive crowd surge led to chaotic conditions, highlighting ongoing concerns about crowd management and safety at large religious gatherings.



WHAT IS A CROWD DISASTER?

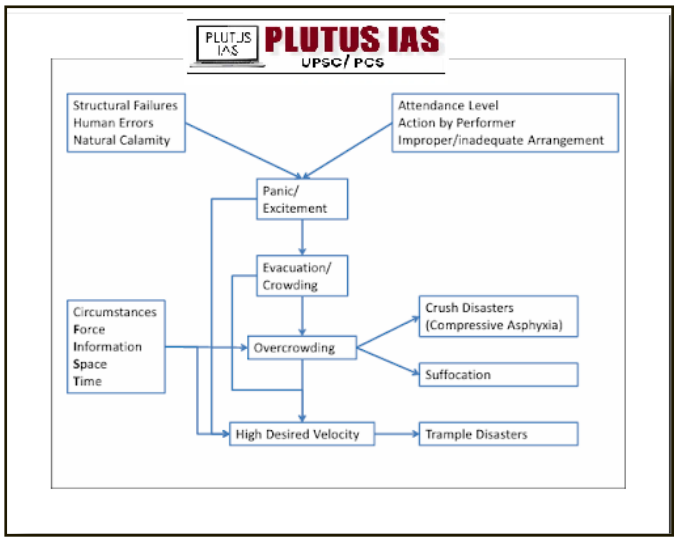
A crowd disaster is a tragic event where a large number of people suffer injuries or fatalities due to high crowd density, often leading to stampedes or crushes. These incidents typically occur at large gatherings such as religious pilgrimages, concerts, sporting events, or public demonstrations.

RECENT CROWD DISASTERS IN INDIA:

Sr. No.	Place & Date of Disaster	Cause of Disaster	Casualties
1	Charbagh Railway Station, Lucknow, Uttar Pradesh (28 Sept 2002)	Stampede on stairs	19
2	Nashik Mahakumbh Mela, Maharashtra (27 Aug 2003)	Religious gathering stampede	29
3	Wai, Satara, Shri Kalubai Yatra, Maharashtra (25 Jan 2005)	Stampede during religious event	293
4	Naina Devi Temple, Bilaspur, Himachal Pradesh (3 Aug 2008)	Stampede at temple	162
5	Chamunda Devi Temple, Jodhpur, Rajasthan (30 Sept 2008)	Stampede at temple	249
6	Ramjanaki Temple, Pratapgarh, Uttar Pradesh (4 Mar 2010)	Religious gathering stampede	65
7	Sabarimala Stampede, Kerala (14 Jan 2011)	Religious pilgrimage	102

8	Allahabad Railway Station, Uttar Pradesh (10 Feb 2013)	Stampede during Maha Kumbh Mela	36
9	Ratangarh, Datia, Madhya Pradesh (13 Oct 2013)	Stampede on bridge due to railing collapse	121
10	Maha Kumbh, Prayagraj, Uttar Pradesh (29 Jan 2025)	Religious gathering stam-pede	30

CAUSES OF CROWD DISASTERS



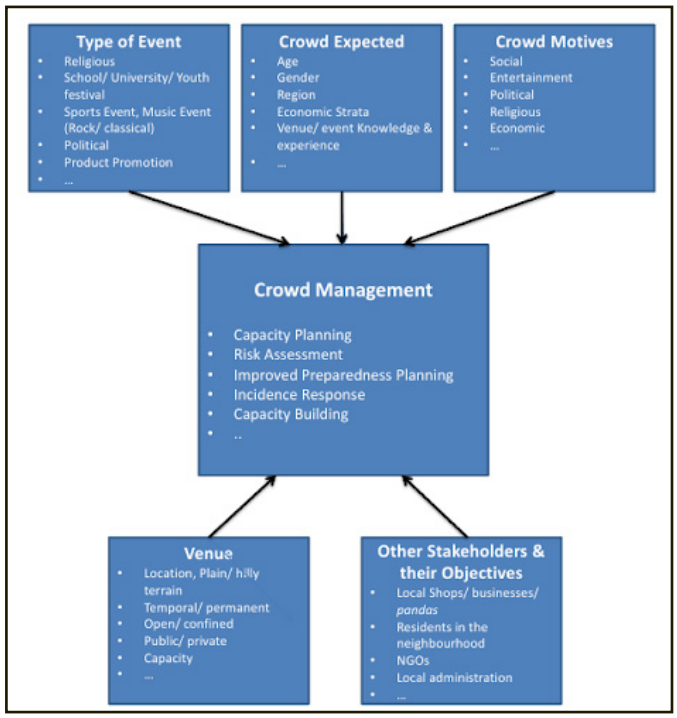
- **High Crowd Density:** When the number of people per square meter exceeds safe limits, movement becomes restricted, leading to crushing. Densities above 5 people per square meter pose a risk, and above 7 people per square meter can be fatal.
- **Poor CrowdManagement:** Ineffective planning for large crowds, lack of barriers, or improper entry/exit routes can cause dangerous congestion.
- **Sudden Surges and Panic:** Fear-driven reactions, such as rumours or perceived threats, can trigger mass movement, leading to stampedes.
- **Blocked or Narrow Exits:** Insufficient escape routes or bottlenecks force people into tighter spaces, increasing pressure and risk of injury.
- **Structural Failures:** Weak or collapsing infrastructure (e.g., fences, bridges, or temporary stands) can cause chaos and panic.
- **Environmental Factors:** Poor weather conditions, extreme heat, or limited air circulation can worsen crowd distress and lead to medical emergencies.
- **Lack of Emergency Response:** Delayed or ineffective emergency services can increase casualties in case of an incident.

KEY LEGAL PROVISIONS FOR CROWD MANAGEMENT

Act	Relevant Provisions	Objective for Crowd Control
Disaster Management Act, 2005	Controls traffic in vulnerable areas (Sec 24, 34). Authorizes officials for disaster man-agement (Sec 33). Penalizes obstruction, false claims, and violations (Sec 51-53, 58).	Ensures proactive disaster management and penalizes negligence.
Police Act, 1861	Deploys additional police in disturbed areas (Sec 15). Regulates public assemblies and pro-cessions (Sec 30, 30A).	Empowers law enforcement for crowd control.

Madras City Police Act, 1888	Mandates licensing for public places (Sec 34). Regulates meetings and processions (Sec 41, 41A).	Ensures orderly conduct in public spaces.
Kerala Police Act, 2011	Regulates traffic in disturbed areas (Sec 45). Controls public assemblies for safety (Sec 79).	Enhances preventive security measures.
UP Melas Act, 1938	Manages crowd flow at religious fairs (Sec 6-10).	Ensures safety at large religious gatherings.
Cinematograph Act, 1952	Mandates safety measures in theaters (Sec 10-12).	Controls crowd size in entertainment venues.
Delhi Cinematograph Rules, 1953	Regulates seating, exits, and fire safety.	Ensures safe crowd management in theaters.

WAYS TO PREVENT CROWD DISASTERS:



- **Maintain Safe Crowd Density:** Ensure the number of people per square meter does not exceed safe limits. Monitor crowd movement and prevent dangerous congestion.
- **Improve Entry and Exit Management:** Increase the number of entry and exit points to prevent bottlenecks. Stagger arrival and departure times to reduce sudden crowd surges.
- **Use Physical Barriers and Crowd Segmentation:** Divide large crowds into smaller, manageable sections to prevent uncontrolled movement. Implement zoning strategies like those used in Times Square on New Year's Eve.
- **Ensure Clear Pathways:** Keep all walkways free from obstacles that could cause people to trip or get trapped. Maintain emergency escape routes that are well-marked and accessible.
- **Use Technology for Crowd Monitoring:** Deploy CCTV, drones, and AI-powered crowd density tracking to detect dangerous levels early. Implement real-time communication systems to provide crowd guidance.
- **Enforce Stronger Regulations:** Governments should pass laws mandating safety measures at large events. Event organizers should be held accountable for implementing proper crowd management strategies.
- **Prioritize Safety Over Profit:** Avoid maximizing crowd size for financial gain at the expense of safety. Balance economic interests with necessary safety protocols.

CONCLUSION

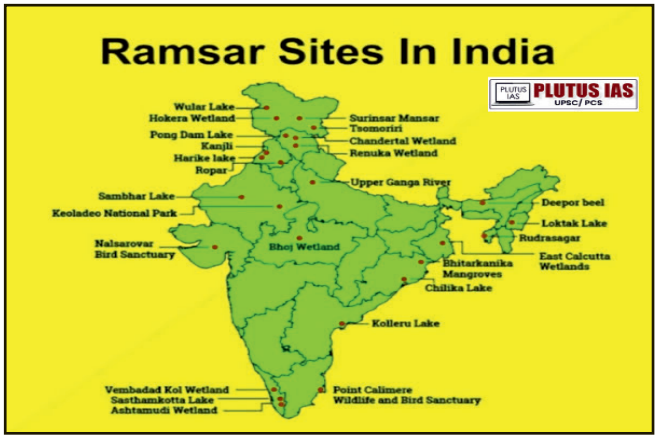
Crowd disasters are not random accidents but preventable tragedies. While individual crowd

members have little control over large-scale movements, event planners, local governments, and venue operators have the power to enforce safety measures. By implementing simple, cost-effective strategies, they can significantly reduce risks and save lives. Ignoring these precautions will only lead to further unnecessary human life loss in the future.

NEW RAMSAR SITES

WHY IN THE NEWS?

The addition of four more wetlands to the Ramsar Convention list is a significant milestone for environmental conservation in India. This brings the total number of Ramsar sites in the country to 89, showcasing India's growing commitment to preserving its rich natural heritage. These wetlands are now officially recognized for their ecological importance and will be protected under international frameworks aimed at conservation and sustainable development. The announcement, made ahead of World Wetlands Day on February 2, further emphasizes the importance of wetland ecosystems and their role in biodiversity, climate regulation, and supporting local communities.



DESCRIPTION OF RECENTLY ADDED WETLAND:

Wetland Name	State	River	Features	Flora	Fauna
Sakkarakottai Bird Sanctuary	**Tamil Nadu**	Not specified	- Established for avifauna and wetland ecosystems conservation. - Spreads over 230.490 hectares.	Neem, Palmyra Palm, Gloriosa superba	Lion-tailed Macaque, Giant Squirrel, Migratory Birds
Therthangal Bird Sanctuary	**Tamil Nadu**	Not specified	- Established to conserve avian species and wetland habitats. - Covers 29.29 hectares. - Popular during the migratory season (Oct-Mar).	Aponogeton nutans, Hydrilla verticillata, Tamarindus indica	Various Migratory Birds
Khecheopalri Wetland	**Sikkim**	Not specified	- Sacred lake for Buddhists and Hindus, believed to fulfil wishes. - Part of the Demazong valley and Buddhist pilgrimage. - Birds prevent leaves from floating on the lake.	Not specified	House Swifts, Fishing Eagles, Brahminy Kites

Udhwa Lake	**Jharkhand**	Ganga River Stream	- Comprises two water bodies: Pataura Jheel (155 ha) and Brahma Jamalpur Jheel (410 ha). - Rich in avian biodiversity, attracting migratory birds.	Not specified	Migratory Birds, Resident Birds, Nesting and Roosting Birds



WHAT IS RAMSAR CONVENTION?

The Ramsar Convention is an international treaty aimed at the conservation and sustainable use of wetlands worldwide. It was adopted in 1971 in Ramsar, Iran. Hence its name, and it came into force in 1975. The Convention recognizes wetlands as vital ecosystems that provide essential services to both the environment and human societies, such as water purification, flood control, carbon sequestration, and habitat for wildlife.

KEY FEATURES OF RAMSAR SITE:

1. **International Importance:** Ramsar sites are wetlands designated for their global ecological, botanical, zoological, or hydrological importance.
2. **Conservation Commitment:** Countries must protect and conserve these wetlands under the Ramsar Convention, ensuring sustainable management and preservation of biodiversity.
3. **Biodiversity:** Ramsar sites are critical for supporting diverse wildlife, including rare, endangered, or migratory species of birds, fish, and other animals.
4. **Ecosystem Services:** Wetlands provide essential services like water purification, flood control, carbon storage, and soil fertility.
5. **Sustainable Use:** The Ramsar Convention promotes the "wise use" of wetlands, meaning they should be used in a way that ensures their ecological functions are maintained for the benefit of current and future generations.
6. **Special Designation Criteria:** Wetlands are designated as Ramsar sites based on specific criteria, such as their importance for biodiversity, waterfowl populations, or hydrological functions.
7. **National and International Cooperation:** The Convention encourages collaboration between countries, particularly for transboundary wetlands and migratory species.
8. **Protection of Waterfowl:** Ramsar sites are often vital for migratory birds and waterfowl, offering breeding, feeding, and resting grounds along migratory routes.
9. **Global Network**: Ramsar sites form a global network of protected wetlands, with over 2,500 sites in more than 170 countries.
10. **Monitoring and Reporting:** Countries are required to report on the condition of their Ramsar sites and take necessary action to address threats to these ecosystems.

INDIA'S ENGAGEMENT WITH THE RAMSAR CONVENTIONS:

1. **Accession:** India became a party to the Ramsar Convention on February 1, 1982.
2. **Number of Ramsar Sites:** India has 89 Ramsar sites, ranking high in Asia.
3. **Important Sites:** Key sites include Chilika Lake and Keoladeo National Park.
4. **Conservation Efforts:** Active management plans ensure the ecological integrity of Ramsar sites.
5. **Recent Developments:** India continues to add new sites, demonstrating its commitment to

wetland conservation.

6. **Regional and Global Role:** India cooperates on transboundary wetlands and migratory species protection.
7. **Ecotourism and Livelihoods:** Ramsar sites support ecotourism and provide sustainable livelihoods to local communities.
8. **Awareness and Education:** India promotes wetland awareness through national campaigns and community outreach.

CONCLUSION

The addition of four new wetlands to the Ramsar Convention list marks a significant step in India's commitment to wetland conservation, bringing the total to 89 sites. This international recognition ensures these ecosystems will be protected and sustainably managed. India's engagement with the Ramsar Convention, through initiatives like the Montreux Record and Ramsar Advisory Missions, helps address ecological threats and improve conservation efforts. These efforts highlight India's

MONTREUX RECORD AND THE RAMSAR ADVISORY MISSION:

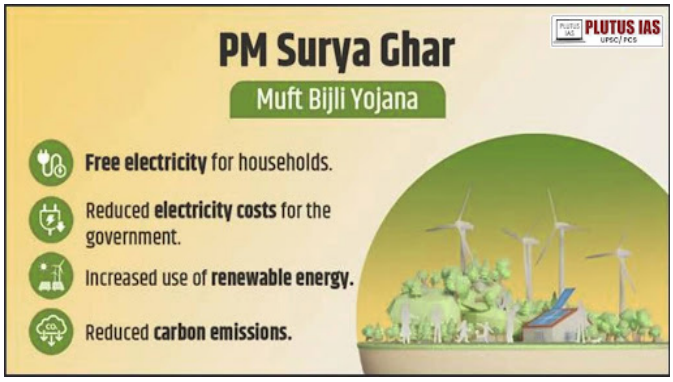
Aspect	Details
Montreux Record	A register of Ramsar sites where ecological character changes have occurred or are likely due to human interference, pollution, or technological developments.
Established	1990 through Recommendation 4.8 of the Ramsar Conference.
Purpose	To identify sites needing priority conservation attention due to ecological changes and to facilitate national and international efforts for restoration.
Inclusion Criteria	Sites can be included if national commitment, international attention, or resources are needed to address the ecological issues.
Addition/Removal of Sites	Sites are added or removed with the approval of the Contracting Parties (countries where the sites are located).
Current Number of Sites	As of September 2007, 59 sites were listed; 23 sites were removed after successful conservation efforts.
Ramsar Advisory Mission (RAM)	A technical assistance mechanism to help countries manage Ramsar sites facing ecological threats.
Purpose of RAM	To provide expert advice and support to countries on addressing threats to wetlands, especially those on the Montreux Record.
Process	A team of experts visits the site to assess the situation and propose measures for ecological restoration. Recommendations are made to guide conservation efforts.
Post-Mission	The team's report is published, and successful interventions may lead to the removal of a site from the Montreux Record.
Collaboration	Missions often involve collaboration with organizations like the World Heritage Convention, IUCN, and others.
Number of Missions	Between 1988-2007, 58 sites received Ramsar Advisory Missions, with the growing involvement of multi-disciplinary teams.

role in balancing development and ecological preservation, contributing to global environmental health, biodiversity, and the well-being of local communities.

"PM SURYA GHAR YOJANA: TRANSFORMING INDIA'S ENERGY LANDSCAPE."

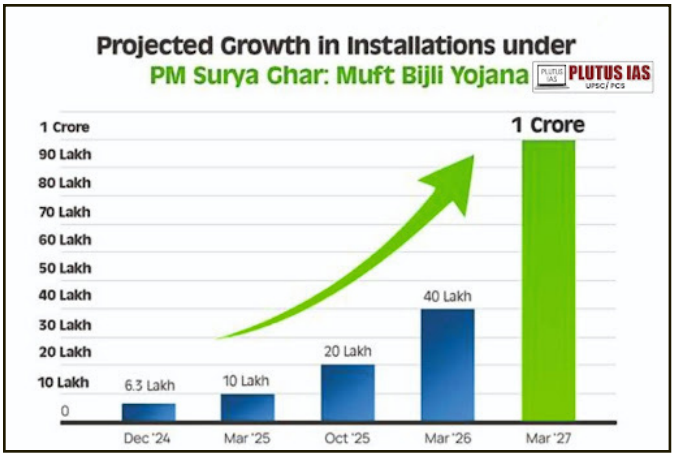
WHY IN THE NEWS?

PM Surya Ghar: Muft Bijli Yojana (PMSGMBY) marks its first anniversary, celebrating a year of empowering households with affordable solar energy and advancing India's sustainable energy transition. Launched by Prime Minister Narendra Modi on February 13, 2024, this initiative aims to provide free electricity through rooftop solar panel installations.

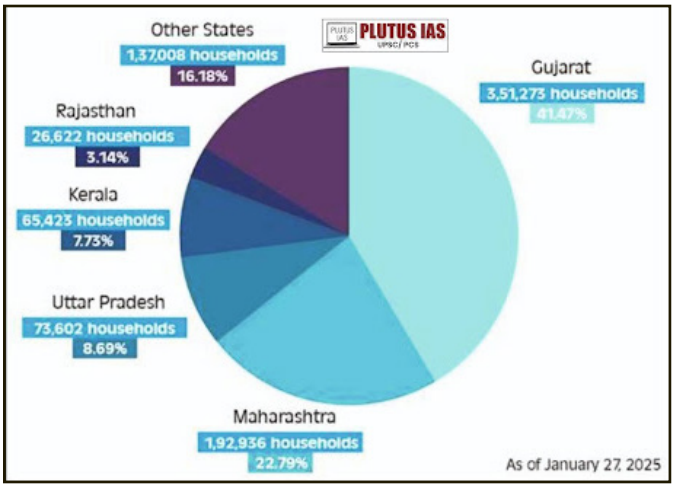


WHAT IS PM SURYA GHAR: MUFT BIJLI YOJANA (PMSGMBY)?

Prime Minister Narendra Modi launched the PM Surya Ghar: Muft Bijli Yojana (PMSGMBY) on February 13, 2024. It is the world's largest domestic rooftop solar initiative. By facilitating rooftop solar panel installations, it aims to provide free electricity to households, making renewable energy more accessible and affordable.



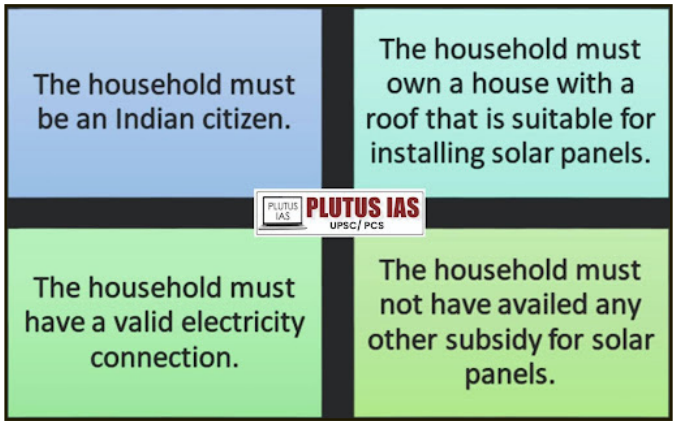
KEY ACHIEVEMENTS OF PM SURYA GHAR: MUFT BIJLI YOJANA



Metric	Details
Households Benefitted	**8.46 lakh** (as of January 27, 2025)
Installation Growth	**Tenfold increase** in monthly installations, now averaging **70,000 per month**
Subsidy Support	Up to **40% subsidy** to make solar energy affordable
Financial Assistance	₹4,308.66 crore disbursed as **Central Financial Assistance (CFA)** to **5.54 lakh residential consumers**
Average Subsidy Per Household	₹77,800

Zero Electricity Bills	**45% of beneficiaries** now enjoy **zero electricity bills** based on their solar power generation and consumption patterns

ELIGIBILITY



BENEFITS OF PM SURYA GHAR: MUFT BIJLI YOJANA

- **Household Savings & Income Generation**: Households benefit from lower electricity bills and can earn revenue by selling surplus solar power to DISCOMs. A 3-kW system can generate over 300 units per month, ensuring energy security and potential earnings.
- **Expansion of Solar Capacity:** The scheme aims to add 30 GW of rooftop solar capacity in the residential sector, significantly accelerating India's renewable energy transition.
- **Boost to Renewable Energy Goals**: This supports India's commitment to achieving 500 GW of non-fossil fuel energy capacity by 2030, strengthening energy sustainability.
- **Environmental Impact**: Over its 25-year lifetime, the scheme is expected to generate 1000 BUs of electricity and reduce CO_2 emissions by 720 million tonnes, helping combat climate change.
- **Job Creation**: Expected to create 17 lakh direct jobs in manufacturing, logistics, supply chain, sales, installation, and operations & maintenance (O&M), fostering economic growth.
- **Energy Security & Grid Stability**: Decentralized rooftop solar installations will reduce transmission losses, enhance grid stability, and decrease reliance on fossil fuels.
- **Lower Dependence on Conventional Power**: Reduces demand on coal-based power plants, leading to a cleaner energy mix and improved air quality.
- **Empowerment of Rural & Urban Households** : Provides affordable, reliable, and sustainable energy solutions to both urban and rural households, improving their overall quality of life.

KEY RENEWABLE ENERGY & ELECTRIFICATION INITIATIVES IN INDIA

Programme		Key Objectives
International Solar Alliance (ISA)	**2015**	Global alliance to promote **solar energy adoption** and reduce fossil fuel dependency.
Solar Energy Corporation of India (SECI)	**2011**	Implements **grid-connected rooftop solar projects** in partnership with the Education Ministry.
Solar Parks Scheme	**2014**	Establishes **solar parks & ultra-mega solar power projects** across India.
Bhaskara Advanced Solar Energy (BASE) Programme	**2013**	Supports the development of **students and scientists** in solar energy research.
Renewable Energy Certificate (REC) Scheme	**2010**	Allows renewable energy producers to **sell certificates** to distribution firms and industries.

Green Hydrogen Mission	**2023**	Promotes the production and adoption of **green hydrogen** as a clean energy alternative.
Perform, Achieve & Trade (PAT) Scheme	**2012**	Enhances **energy efficiency** in energy-intensive industries through tradable energy-saving certificates.
Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)	**2017**	Ensures **affordable and reliable electricity** for all rural and urban households.
Ujjwala Scheme (PMUY)	**2016**	Provides **free LPG connections** to poor households, reducing dependence on traditional fuels.
Green Energy Corridor (GEC)	**2013**	Integrates **renewable energy** into India's national transmission grid for stable power supply.
Indian Renewable Energy Development Agency (IREDA)	**1987**	Provides **financial support** for renewable energy and energy conservation projects.

CHALLENGES IN INDIA'S CLEAN ENERGY TRANSITION

Challenges	Details
High Installation Costs	Solar panel installation remains expensive, limiting widespread adoption.
Coal Dependency	India still relies on **60% coal-based** energy, slowing the renewable transition.
Financial Constraints	Shortage of financial resources and high upfront costs hinder clean energy projects.
Land Acquisition Issues	Difficulties in acquiring land, especially for **wind farms** in populated areas.
Grid Integration	Renewable energy fluctuations require significant **grid upgrades** for stability.
Energy Storage	Limited storage solutions make managing **intermittent solar & wind power** challenging.
Infrastructure Limitations	Existing power infrastructure struggles to handle **large-scale renewable energy**.
Regulatory Hurdles	Lack of **clear policies** discourages investment in clean energy projects.
Technical Expertise	Shortage of skilled professionals for **design, implementation & maintenance**.
Social & Environmental Concerns	Addressing community and **ecosystem impacts** of renewable projects.
Public Awareness	Need to educate people on **clean energy benefits & adoption**.

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STRATEGIES TO PROMOTE CLEAN ENERGY IN INDIA

Strategies	Implementation
Enhancing Grid Connectivity	Strengthening **transmission networks** for efficient renewable integration.
Solar Rooftop Mission	Expanding rooftop solar to **reduce individual household electricity needs**.
PM Surya Ghar Yojana	A game-changer for **marginalized and low-income groups**.
Modern Solar Village Programme	Supporting rural areas in becoming **self-reliant through solar energy**.
Boosting Private Sector Participation	Encouraging **domestic & foreign companies** to invest in large-scale renewable projects.
Expanding Financial Incentives	Providing **low-interest loans, subsidies, & tax benefits** for clean energy projects.
Strengthening International Collaboration	Partnering with **USA, Denmark, Germany & Japan** for technology transfer & joint projects.
Research & Development in Storage Solutions	Focusing on **battery storage, hydrogen fuel & smart grids** for energy efficiency.
Reducing DISCOM Burden	Implementing reforms to **ease financial pressure on power distribution companies**.
Promoting Nuclear Energy	Strengthening the **National Nuclear Mission** for alternative power sources.
Exploring Geothermal Energy	Harnessing **Puga Valley (Himachal Pradesh)** for geothermal energy production.
Developing Offshore Wind Energy	Expanding **offshore wind farms** to utilize India's vast coastline for clean power.

CONCLUSION

The PM Surya Ghar: Muft Bijli Yojana is revolutionizing India's energy landscape by empowering households with solar power. With installations set to exceed 10 lakh by March 2025, 20 lakh by October 2025, and 40 lakh by March 2026, the scheme is on track to achieve its ambitious one crore target by March 2027. By saving the government ₹75,000 crore annually, reducing carbon emissions, and creating jobs, the initiative cements India's leadership in clean energy.



Prelims Question:

1. Consider the following statements:

1. India is the largest producer of coffee in the world.
2. The Coffee Board of India was established in 1942 under the Coffee Act.
3. Coffee is predominantly grown in the southern states of India, especially Karnataka, Kerala, and Tamil Nadu.

How many of the statements given above are correct?

A. Only one
B. Only two
C. All three
D. None

2. Which of the following is an objective of the National Critical Mineral Mission (NCMM) launched by the Government of India?

A. Enhance India's dependency on foreign sources for critical minerals
B. Establish a Centre of Excellence for Critical Minerals
C. Focus solely on domestic ethanol production
D. Promote the exploration of non-essential minerals

3. Which of the following are classified as disasters under the Disaster Management Act,2005?

1. Industrial Fire incident
2. Stampede
3. Urban floods

Select the correct answer using the code given below:

A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

4. Consider the following Pairs:

S.NO	Ramsar site	State
1	Sakkarakottai Bird Sanctuary	Tamil Nadu
2	Khecheopalri Wetland	Jharkhand
3	Udhwa Lake	Sikkim

How many of the above pairs are correctly matched?

A. Only one
B. Only two
C. All three
D. None

5. Consider the following statements regarding the PM Surya Ghar: Muft Bijli Yojana (PMSGMBY):

1. PMSGMBY is a central sector scheme.
2. To avail of the benefits of PMSGMBY, a person must be a citizen of India.
3. PMSGMBY aims to reduce GHG emissions by reducing the coal-based energy demand.

How many of the above-given statements are correct?

A. Only one
B. Only two
C. All three
D. None

ANSWER

1. B	2. B	3. D	4. A	5.C

MAINS QUESTION:

1. Discuss the importance of value-added coffee products like roasted and instant coffee for India's export potential. What measures can India take to capitalize on this emerging opportunity?

(250 words, 15 marks)

2. The National Critical Mineral Mission (NCMM) aims to secure India's self-reliance in critical minerals vital for sectors such as high-tech industries, clean energy, and defense." Discuss the challenges and the way forward for tapping the full potential of critical minerals in India.

(250 words, 15 marks)

3. Recent incidences of stampedes and casualties highlight the need for effective crowd management. Comment.

(250 words, 15 marks)

4. Discuss the significance of India's recent addition of four wetlands to the Ramsar Convention List. How do these efforts reflect India's commitment to environmental conservation?

(250 words, 15 marks)

5. To what extent can rooftop solar initiatives like PMSGMBY contribute to India's net-zero target? Examine the challenges and suggest measures for effective implementation.

(Answer in 250 words)





INDIA'S DEEP OCEAN MISSION GAINS MOMENTUM

WHY IN THE NEWS?

India's ambitious plan to launch its first human underwater submersible has been making headlines recently, as it marks a significant milestone in the country's scientific and technological progress. Union Minister Dr Jitendra Singh announced that this submersible, which will initially operate at a depth of 500 meters and eventually reach up to 6,000 meters, positions India among just a few nations with the capability to undertake such an advanced underwater exploration mission. The announcement is part of India's "Deep Ocean Mission" (DOM), a flagship initiative aimed at tapping into the vast resources of the ocean, including rare minerals and undiscovered marine biodiversity, which could boost the nation's economic growth and sustainability efforts. The mission also aligns with India's broader ambitions, such as the Gaganyaan space mission, showcasing the country's growing capabilities in both space and ocean exploration.



INDIAN DEEP OCEAN MISSION:

1. **Launch Day:**

- **Launch Date:** The mission was formally approved in 2021 by the Cabinet Committee on Economic Affairs (CCEA). Specific details about the official launch day of individual components, such as the manned submersible, are still being planned, with the submersible's deployment expected to occur in phases.
- **Phase 1 (2021-2024):** The first phase of the mission focuses on foundational research, technology development, and pilot projects with an estimated budget of Rs. 2,823 crore.

2. **Basic Facts:**

- **Total Budget:** The Deep Ocean Mission has a total estimated cost of Rs. 4,077 crore over a 5-year period (2021-2026).
- **Coastal Significance for India:** India has a coastline of 7,517 km and is home to 9 coastal states and 1,382 islands. Approximately 30% of India's population lives in coastal areas, making the ocean crucial for economic activities like fisheries, aquaculture, tourism, and maritime trade.
- **UN Decade of Ocean Science:** The United Nations declared 2021-2030 as the Decade of Ocean Science for Sustainable Development, emphasizing the global importance of ocean exploration and sustainability.
- **Technological Innovation:** The mission will focus on indigenizing deep-sea technologies that are currently not commercially available and will foster technological advancements through collaboration with institutions and private sectors.

INTERNATIONAL SEABED AUTHORITY:

Aspect	Details
Established	1994 under UNCLOS (1982)
Legal Foundation	Part XI of UNCLOS - Governs the international seabed as the "common heritage of all mankind"
Headquarters	Kingston, Jamaica
Membership	167 member states and the European Union (EU)
Mission	Regulate seabed mineral exploration and exploitation; protect the marine environment
Key Governing Bodies	Assembly, Council, Secretary-General (Secretariat)
Primary Resource Focus	Polymetallic nodules in the Clarion-Clipperton Zone (Pacific Ocean)

OBJECTIVES OF DEEP OCEAN MISSION:

1. **Development of Deep-Sea Mining Technologies:** Create technologies for mining deep-sea resources, such as Polymetallic nodules from the Central Indian Ocean at a depth of 5500 meters.
2. **Design of Manned Submersible:** Develop a working prototype and a final manned submersible capable of reaching 6000 meters depth, along with technologies for underwater vehicles and robotics.
3. **Climate Change Projections:** Provide predictions on trends in sea level, cyclone intensity, storm surges, wind waves, and impacts on fishery ecosystems in the North Indian Ocean under climate change scenarios.
4. **Deep-Sea Biodiversity and DNA Bank:** Conduct systematic sampling using Remotely Operated Vehicles (ROVs) to create a DNA bank and archive specimens of deep-sea fauna from the Northern Indian Ocean.
5. **Microbial Research and Biomolecule Screening:** Develop technologies to isolate piezotolerant and piezophilic microbes from the deep sea and screen for novel biomolecules through culture-based and metagenomic approaches.
6. **Exploring Hydrothermal Sulphide Mineralization:** Explore potential sites for multi-metal hydrothermal sulphides along the Indian Ocean's mid-oceanic ridges for future resource exploitation.
7. **Acquisition of Multidisciplinary Research Vessel:** Acquire a new all-weather, multidisciplinary research vessel for operations in the Indian Ocean to support deep-ocean exploration and research.
8. **Offshore OTEC Desalination and Marine Research Integration:** Develop an engineering design for an offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plant and integrate research in marine biology, ecology, and marine engineering through an advanced Marine Station for Ocean Biology.



COMPONENTS OF DEEP OCEAN MISSION:

1. **Manned Submersible & Deep-Sea Mining:** Development of a manned submersible for 6000m depth and an Integrated Mining System for extracting Polymetallic Nodules from the Central Indian Ocean.
2. **Ocean Climate Change Advisory:** Creation of models and observations to predict climate variables like sea level rise and cyclone intensity on seasonal to decadal timescales.
3. **Public Awareness:** Promote knowledge about Earth system science and the achievements of the Ministry of Earth Sciences (MoES) among the public and academic communities.
4. **Deep-Sea Biodiversity Innovation:** Focus on bio-prospecting deep-sea species and microbes for sustainable use and resource conservation.
5. **Deep Ocean Survey:** Identify sites for multi-metal hydrothermal sulphides along the Indian Ocean mid-oceanic ridges.
6. **Ocean Energy & Freshwater:** Design an OTEC-powered desalination plant for offshore energy generation and freshwater production.
7. **Marine Biology Station:** Establish an advanced research station for ocean biology to foster industrial applications and start-up innovations.
8. **Blue Economy Support:** Drive initiatives in marine fisheries, coastal tourism, offshore energy, and marine biology through mission components.

SIGNIFICANCE OF DEEP OCEAN MISSION:

1. **Advancing Science:** Enhances understanding of deep-ocean ecosystems and biodiversity.
2. **Resource Exploration:** Supports the exploration of deep-sea minerals like Polymetallic Nodules for future resource needs.
3. **Blue Economy Growth:** Boosts sustainable use of ocean resources in sectors like fisheries, biotechnology, and offshore energy.
4. **Climate Change Research:** Provides critical data for understanding and mitigating the impacts of climate change, especially in coastal areas.
5. **Technological Innovation:** Develop advanced technologies such as manned submersibles and desalination plants.
6. **Conservation:** Promotes sustainable use and conservation of deep-sea biodiversity.
7. **Global Leadership:** Positions India as a leader in marine science and ocean governance.
8. **Economic Growth:** Generates jobs, fosters technological advancements, and supports India's blue economy.

CONCERN REGARDING DEEP OCEAN MISSION:

1. **Environmental Impact**: Deep-sea mining and exploration could harm fragile ecosystems and biodiversity.
2. **Sustainability**: Resource extraction, like mining Polymetallic Nodules, may not be sustainable long-term.
3. **Technology and Safety**: Operating submersibles and robots at 6000m depth present safety and equipment challenges.
4. **Regulatory Oversight**: Concerns about international regulations for managing deep-sea activities and preventing environmental harm.
5. **Ethical Issues**: **Exploitation:** Deep-sea species for commercial use raises ethical concerns.
6. **Climate Change**: Deep-sea operations could unintentionally disrupt oceanic carbon sinks.
7. **Cost and Funding**: High financial costs for technology development and environmental monitoring may strain resources.

WAY TO MAKE DEEP OCEAN MISSION SUSTAINABLE:

1. **Environmental Safeguards:** Establish strict environmental monitoring and impact assessments to minimize damage to ocean ecosystems, including biodiversity protection and habitat conservation.
2. **Regulation and Governance:** Strengthen collaboration with international bodies like the International Seabed Authority (ISA) to ensure that deep-sea mining and exploration activities follow responsible and sustainable practices.

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3. **Technological Innovation:** Focus on developing eco-friendly technologies for mining, exploration, and resource extraction that reduce environmental footprints, such as non-invasive mining methods and sustainable energy solutions.
4. **Circular Economy:** Promote a circular economy approach by ensuring that resources extracted are used efficiently and waste is minimized or recycled, reducing overall environmental impact.
5. **Biodiversity Conservation:** Prioritize bio-prospecting and research on deep-sea species in a way that ensures sustainable use of marine life and maintains ecosystem balance.
6. **Scientific Collaboration:** Foster partnerships with global scientific communities to share data, expertise, and resources, ensuring best practices are followed and minimizing risks to marine environments.
7. **Sustainable Resource Management:** Set up clear limits on the amount of minerals that can be extracted and ensure that resources are used for long-term benefits rather than short-term exploitation.
8. **Community and Stakeholder Engagement:** Engage with local coastal communities and other stakeholders to understand their concerns, share knowledge, and ensure the benefits of the mission are equitably distributed.

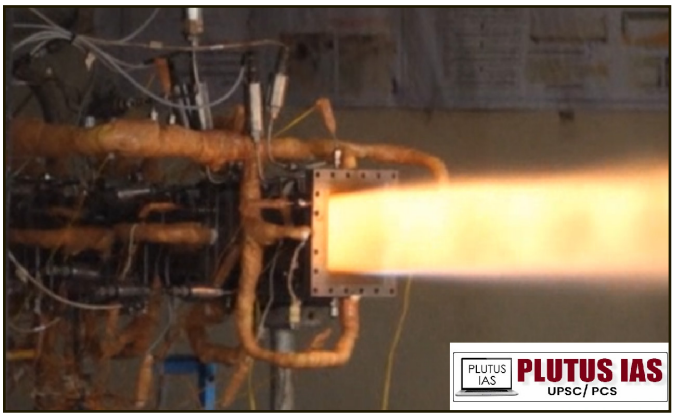
CONCLUSIONS

The Deep Ocean Mission (DOM) represents a significant leap forward in India's scientific and technological capabilities, aiming to tap into the vast resources of the ocean for sustainable economic growth. By developing cutting-edge technologies such as manned submersibles and deep-sea mining systems, India is positioning itself as a global leader in marine science and ocean governance. The mission aligns with broader national goals like the Blue Economy, supporting sectors like fisheries, offshore energy, and biotechnology. While the mission holds immense potential for economic growth and environmental sustainability, it also brings concerns regarding environmental impact, resource sustainability, and regulatory oversight.

SCRAMJET HYPERSONIC MISSILE TECHNOLOGY

WHY IN THE NEWS?

India's Defence Research and Development Organisation (DRDO) has achieved a major milestone in hypersonic technology with the successful ground test of an active cooled scramjet combustor. The test, which demonstrated stable combustion for 120 seconds, marks a crucial step in developing long-duration scramjet-powered hypersonic vehicles. This achievement places India at the forefront of advanced defence technology, positioning it to build next-generation hypersonic missiles that can travel at speeds above Mach 5. Scramjet technology, the key to these vehicles, allows for sustained combustion at supersonic speeds without moving parts, making it a highly efficient propulsion system.



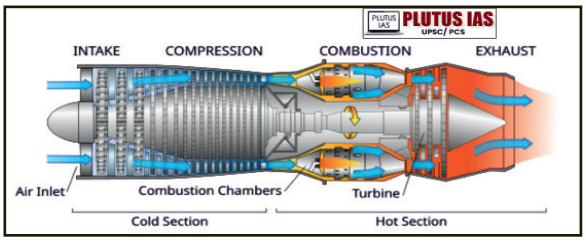
WHAT IS HYPERSONIC MISSILE TECHNOLOGY?

Hypersonic Missile Technology refers to weapons capable of travelling at speeds greater than Mach 5 (more than five times the speed of sound). These missiles are faster, more manoeuvrable, and harder to intercept than traditional missiles, making them a significant advancement in military technology.

Types of Hypersonic Missiles:

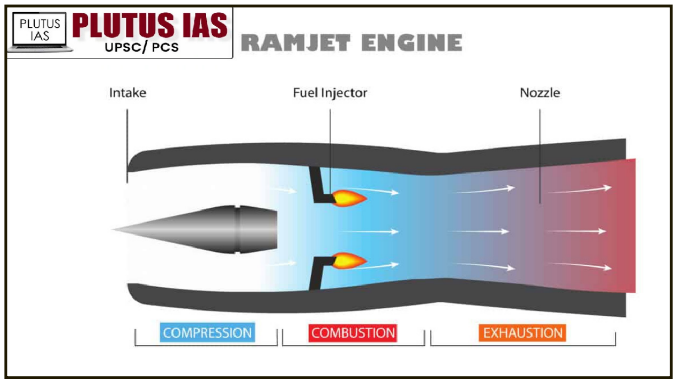
1. **Hypersonic Cruise Missiles (HCMs):** Powered by scramjets, these missiles maintain hypersonic speeds throughout their flight.

2. **Hypersonic Glide Vehicles (HGVs):** Launched by rockets into space, they glide back to Earth at hypersonic speeds, capable of altering their trajectory.



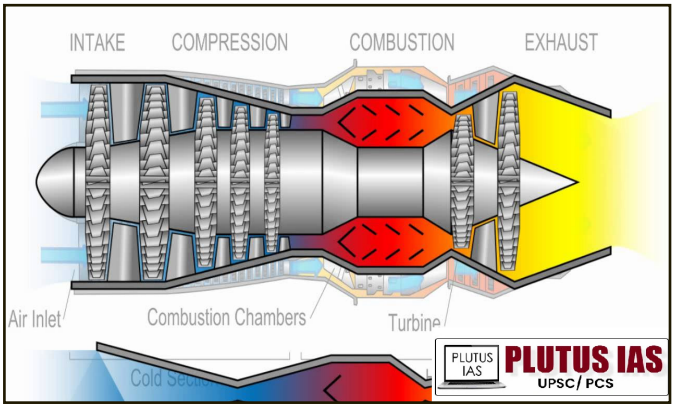
SCRAMJET VS RAMJET VS TURBINE

Feature	Scramjet	Ramjet	Turbine
Speed Range	Hypersonic (Mach 5 and above)	Supersonic (Mach 2 to Mach 5)	Subsonic to Supersonic (Mach 0.3 to Mach 3)
Operation Principle	Air-breathing with supersonic combustion	Air-breathing with subsonic combustion	Air-breathing with compression and combustion
Components	Inlet, Combustor, Diverging Nozzle	Inlet, Combustor, Diverging Nozzle	Compressor, Combustor, Turbine, Nozzle
Air Compression	Uses shock waves for compression at hypersonic speeds	Uses forward motion to compress air	Uses rotating blades (compressor) for air compression
Efficiency	High efficiency at hypersonic speeds	High efficiency at supersonic speeds	High efficiency at subsonic to supersonic speeds
Thrust Generation	By accelerating heated air at hypersonic speeds	By accelerating heated air at supersonic speeds	By expanding air through turbines for thrust
Moving Parts	None (no moving parts)	None (no moving parts)	Yes (rotating blades in compressor and turbine)
Fuel Type	Typically, hydrogen or hydrocarbon-based	Typically, hydrogen or hydrocarbon-based	Typically, jet fuel (e.g., kerosene)
Operational Altitude	Typically above 100 km (high-altitude)	Typically in the atmosphere (up to ~30 km)	Operates at lower altitudes (up to ~12 km)
Applications	Hypersonic flight, future space exploration, military missiles	Supersonic flight (e.g., missiles, supersonic aircraft)	Commercial jets, military jets, helicopters
Complexity	Very high (advanced engineering for high speeds)	Moderate (simpler design compared to turbines)	Moderate to high (advanced systems for jet propulsion)
Heat Management	Very high (extreme heat at hypersonic speeds)	High (but less extreme than scramjets)	Moderate (operates at lower temperatures)



SCRAMJET ENGINE MECHANISM OF WORKING:

1. **Air Intake:** At hypersonic speeds (Mach 5+), the air is taken in without slowing down, compressed by the vehicle's high velocity through the intake.
2. **Compression:** Air is compressed by the intake shape, increasing pressure and temperature while remaining supersonic throughout the process.
3. **Combustion:** Fuel (like hydrogen) is injected into the supersonic airflow in the combustion chamber. Combustion occurs almost instantly due to the high pressure and temperature.
4. **Thrust Generation:** Post-combustion, hot gases expand and accelerate through a divergent nozzle, creating thrust to propel the vehicle forward.
5. **No Moving Parts:** Unlike traditional jet engines, scramjets have no rotating components. They rely solely on vehicle speed for compression, making them lighter but requiring higher operational speeds.



APPLICATION OF SCRAMJET ENGINE:

1. **Hypersonic Aircraft:** Enables vehicles to fly at Mach 5+ speeds, reducing global travel times by travelling through the upper atmosphere.
2. **Hypersonic Missiles:** Powers missiles that are faster and harder to intercept than conventional ones, with longer range and speed.
3. **Space Launch Vehicles:** Used to reduce fuel needs by utilizing atmospheric air as an oxidizer, making space launches more efficient and cost-effective.
4. **Spaceplanes and Reusable Spacecraft:** Key to developing spaceplanes that can launch like aeroplanes and transition to rocket propulsion for space access, enabling reusable spacecraft.
5. **High-Speed Interceptors:** Develop interceptors capable of countering hypersonic threats with extreme speed.
6. **Scientific Research & Space Exploration:** Enables quick access to the upper atmosphere for research on air composition, environmental conditions, and more.

CONCLUSION

India's successful test of the actively cooled scramjet combustor marks a key milestone in hypersonic technology, placing the country at the forefront of defence innovation. This achievement paves the way for next-gen hypersonic missiles capable of exceeding Mach 5 speeds, making them faster, more manoeuvrable, and harder to intercept. Scramjet technology, which enables supersonic combustion without moving parts, is highly efficient and essential for high-speed flight and long-duration missions. Its applications extend beyond defence to include hypersonic aircraft, space exploration, and cost-effective space launches. By using atmospheric oxygen, scramjets also reduce fuel needs, potentially revolutionizing space access.

NUCLEAR ENERGY MISSION FOR VIKSHIT BHARAT

WHY IN THE NEWS?

The Union Budget 2025-26 outlines a significant push towards nuclear energy as part of India's long-term energy transition strategy. The government

has set an ambitious target of 100 GW nuclear power capacity by 2047, positioning nuclear energy as a major pillar in India's energy mix. This development aligns with the broader objectives of Viksit Bharat, ensuring energy reliability and reducing dependency on fossil fuels. To achieve this goal, strategic policy interventions and infrastructure investments are being undertaken, with an emphasis on indigenous nuclear technology and public-private collaborations.

NUCLEAR ENERGY MISSION COMPONENT:

1. **Research and Development of SMRs:** Focus on developing Small Modular Reactors (SMRs) to offer scalable, cost-effective energy solutions. SMRs are essential for addressing land constraints, stabilizing the grid, and complementing renewable energy sources.
2. **Indigenous Technology:** The mission emphasizes the development of domestic technologies like Bharat Small Reactors (BSRs) and SMRs, leveraging India's expertise in Pressurized Heavy Water Reactors (PHWRs) for energy independence.
3. **Private Sector Participation:** Encouraging private sector involvement in land acquisition, capital, and funding for nuclear plants, with NPCIL managing reactor operations. This speeds up nuclear energy deployment.
4. **Legal Amendments:** Changes to the Atomic Energy Act and the Civil Liability for Nuclear Damage Act will attract private investments and promote innovation in the sector.



BHARAT SMALL REACTORS (BSRS) AND THEIR PARTNERSHIP:

Bharat Small Reactors (BSRs) are 220 MW Pressurized Heavy Water Reactors (PHWRs) designed for energy demands in industrial zones.

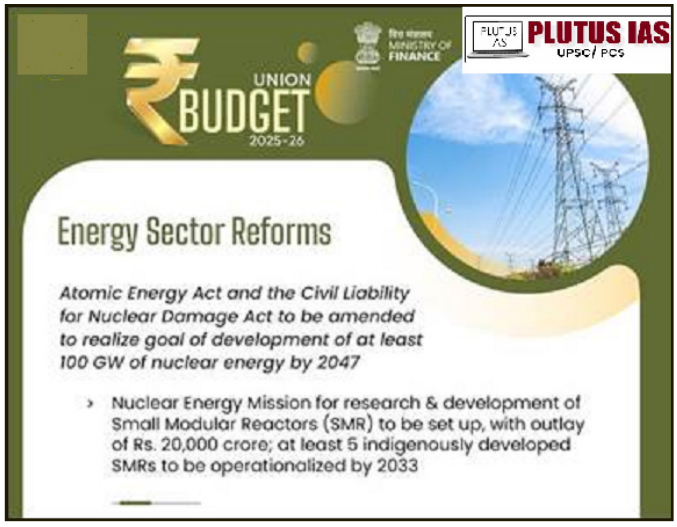
1. **Private Sector Partnership:** The private sector will provide land, cooling water, and capital, while NPCIL handles design, quality assurance, and operations. This accelerates project timelines and attracts investment.
2. **Decarbonization:** BSRs play a vital role in reducing emissions, supporting India's goal of generating 500 GW from non-fossil fuels by 2030.
3. **Safety and Flexibility:** BSRs are designed for safety and can be deployed in industrial areas, acting as captive power plants and aiding in industrial decarbonization.

SIGNIFICANCE OF THE NUCLEAR ENERGY MISSION:

1. **Energy Security:** Diversifies India's energy mix, reducing reliance on fossil fuels and enhancing long-term energy stability.
2. **Sustainability:** Supports climate goals by reducing carbon emissions, aiding in achieving India's Paris Agreement commitments.
3. **Technological Leadership:** Positions India as a global leader in nuclear energy through indigenous advancements like Small Modular Reactors (SMRs).
4. **Economic Growth:** Drives job creation, innovation, and investment in energy infrastructure, boosting related industries.
5. **Remote Area Power:** SMRs provide reliable energy to off-grid regions, ensuring energy access in underserved areas.
6. **Public-Private Collaboration:** Encourages private sector partnerships, speeding up nuclear energy deployment and innovation.
7. **Energy Independence:** Reduces dependence on imported energy, strengthening national security and protecting against global price fluctuations.

GOVERNMENT INITIATIVES FOR NUCLEAR ENERGY MISSION:

1. **Nuclear Capacity Expansion:** The government aims to increase nuclear power capacity from 8,180 MW to 22,480 MW by 2031-32, with the construction of ten reactors totalling 8,000 MW across multiple states (Gujarat, Rajasthan, Tamil Nadu, Haryana, Karnataka, Madhya Pradesh).
2. **Approval for New Plants:** In-principle approval has been granted for a 6 x 1208 MW nuclear power plant at Kovvada, Srikakulam district, Andhra Pradesh, in collaboration with the USA.
3. **Rajasthan Atomic Power Project Milestone:** The Unit-7 of the Rajasthan Atomic Power Project (RAPP-7) reached criticality on September 19, 2024, marking a significant milestone in building and operating indigenous reactors.
4. **Commitment to Clean Energy:** These initiatives align with India's strategy to provide clean, reliable energy, contributing to energy security and environmental sustainability.
5. **Focus on Safety:** India's nuclear power plants adhere to strict safety protocols, with radiation levels consistently below global standards, ensuring secure and sustainable operations.



WHAT ARE THE ISSUES IN NUCLEAR ENERGY DEVELOPMENT?

1. **Safety Concerns:** Accidents like Chornobyl and Fukushima highlight the risks of nuclear plants, making robust safety measures and public trust crucial.
2. **High Initial Costs:** Building nuclear plants requires substantial investment in infrastructure, research, and development, which can be a barrier, especially for developing countries.
3. **Long Development Timelines:** Nuclear projects take years to complete due to complex regulations and technical challenges, making it difficult to quickly meet energy demands.
4. **Nuclear Waste Management:** Safe, long-term storage of radioactive waste remains a challenge with environmental risks.
5. **Public Opposition:** Concerns about safety, waste, and environmental impact often lead to protests and project delays.
6. **Geopolitical Risks:** Nuclear technology can be misused for weapons, raising international security concerns.
7. **Regulatory Hurdles:** Complex regulations can delay projects and increase costs.
8. **High Operational Costs:** Skilled labour, maintenance, and plant decommissioning contribute to high operational costs.
9. **Environmental Impact:** While low-carbon, uranium mining, plant construction, and reactor emissions can harm ecosystems.

WAY FORWARD

1. **Enhance Safety Protocols:** Adopt advanced safety technologies and international best practices to build public trust and ensure safe operations.
2. **Reduce Costs:** Streamline regulatory processes, innovate with reactor designs like SMRs, and leverage public-private partnerships to lower investment costs.
3. **Accelerate Timelines:** Fast-track approvals and reduce delays through improved project management and international collaboration.
4. **Improve Waste Management:** Invest in advanced solutions for reprocessing, recycling, and safe long-term storage of radioactive waste.
5. **Engage the Public:** Raise awareness and involve local communities to address concerns and reduce opposition to nuclear projects.

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6. **Ensure Geopolitical Stability:** Strengthen global agreements and frameworks for responsible nuclear technology use and non-proliferation.
7. **Streamline Regulations:** Simplify regulatory frameworks to speed up plant construction while maintaining safety and environmental standards.
8. **Explore Sustainable Fuels:** Invest in alternative nuclear fuels like thorium to reduce dependence on uranium and enhance long-term sustainability.
9. **Minimize Environmental Impact:** Focus on eco-friendly mining practices and designs with minimal environmental impact.

CONCLUSION

The provisions for nuclear power in the Union Budget 2025-26 mark a transformative shift in India's energy landscape. By promoting nuclear energy as a sustainable, scalable, and secure power source, the government aims to bolster energy security and meet the nation's long-term economic and environmental goals. The Nuclear Energy Mission for Viksit Bharat is poised to accelerate nuclear power development, positioning India as a global leader in advanced nuclear technology by 2047.

GOVERNING AI: A CRUCIAL IMPERATIVE FOR THE FUTURE"

WHY IN THE NEWS?

The Paris AI Action Summit 2025 will be a pivotal event in shaping global AI policies, governance, and innovation. Led by India and France, the summit will gather world leaders, tech giants, and policymakers to discuss key issues like privacy, ethics, AI governance, and economic impact. The focus areas include AI regulation, data security, economic growth, and global collaboration, aiming to establish responsible AI frameworks, safeguard user data, and drive AI-driven innovation across industries.



DEFINITION OF AI:

Artificial Intelligence (AI) refers to the ability of machines or computer systems to simulate human intelligence by performing tasks such as learning, reasoning, problem-solving, and decision-making. It enables machines to analyze data, recognize patterns, and make predictions with minimal human intervention.

GLOBAL AI LAWS, AGREEMENTS, AND COOPERATION TREATIES

Name	Enacted By / Organization	Mandate
EU AI Act (2024)	European Union (EU)	Regulates AI systems based on risk levels, with strict rules for high-risk applications.
U.S. Executive Order on AI (2023)	U.S. Government	Ensures AI safety, security, and transparency, and promotes AI-driven innovation.

China's AI Regulations	Chinese Government	Imposes restrictions on generative AI, deepfakes, and ethical AI development.
India's AI Framework	Government of India	Focuses on responsible AI use, data protection, and AI-driven economic growth.
G7 Hiroshima AI Process (2023)	G7 Nations	Establishes voluntary AI governance standards among G7 member countries.
Global Partnership on AI (GPAI)	OECD & Partner Countries	Promotes human-centric AI policies, research, and ethical AI deployment.
OECD AI Principles	Organization for Economic Cooperation and Development (OECD)	Provides guidelines for trustworthy and ethical AI.
UNESCO AI Ethics Framework	United Nations (UNESCO)	Sets global ethical standards for AI to ensure fairness, inclusivity, and human rights protection.
EU-U.S. AI Collaboration	European Union & United States	Aligns AI governance frameworks, enhances AI safety, and promotes innovation.
India-France AI Cooperation	Governments of India & France	Strengthens AI research, innovation, and regulatory policy alignment.
China-EU AI Dialogue	European Union & China	Focuses on AI safety, trade regulations, and cross-border AI policies.
AI in BRICS Nations	Brazil, Russia, India, China, South Africa (BRICS)	Develops common AI standards and promotes AI cooperation among BRICS members.

APPLICATIONS OF AI IN VARIOUS FIELDS

Field	Application	Example (Global & India)	Data/Impact
Healthcare	Improved Diagnostics – AI analyzes medical images (X-rays, MRIs) with higher accuracy.	Global: PathAI aids in cancer diagnosis. India: Niramai uses AI for early breast cancer detection.	A study in JAMA found AI detecting diabetic retinopathy with accuracy similar to ophthalmologists.
	Drug Discovery – AI accelerates drug discovery by analyzing large datasets.	Global: Atomwise predicts drug effectiveness. India: Bengaluru-based Innoplexus uses AI for faster drug research.	AI can reduce drug development time and cost significantly.
Transportation	Autonomous Vehicles – AI-powered self-driving cars enhance road safety.	Global: Waymo tests self-driving cars. India: Tata Elxsi works on AI for autonomous driving.	NHTSA reports 94% of accidents are due to human error, AI can reduce this.

	Traffic Optimization – AI analyzes real-time traffic data to optimize flow.	Global: Google Maps provides real-time updates. India: Bengaluru Traffic Police uses AI-powered Adaptive Traffic Signals.	AI can cut travel time by up to 25%.
Retail	Personalized Recommendations – AI suggests products based on customer behavior.	Global: Amazon uses AI for personalized recommendations. India: Flipkart's AI models enhance product recommendations.	McKinsey reports AI-driven personalization can increase sales by 20%.
	Inventory Management – AI predicts demand to optimize stock levels.	Global: Walmart optimizes inventory with AI. India: Reliance Retail uses AI for supply chain efficiency.	AI can reduce waste and stockouts, improving customer satisfaction.
Finance	Fraud Detection – AI identifies suspicious financial transactions.	Global: Banks use AI to flag fraudulent activities. India: ICICI Bank deploys AI for real-time fraud detection.	AI-powered fraud detection can reduce losses by 70%.
	Risk Management – AI assesses risks by analyzing financial data.	Global: Insurance firms use AI for risk profiling. India: SBI Life uses AI for customer risk assessment.	AI improves loan approval accuracy and reduces financial risks.
Manufacturing	Predictive Maintenance – AI detects potential failures in machinery.	Global: General Electric uses AI for jet engine maintenance. India: Tata Steel employs AI for equipment health monitoring.	Predictive maintenance can reduce downtime by 50% and extend equipment lifespan by 40%.
	Quality Control – AI-powered vision systems detect product defects.	Global: AI inspects manufactured goods for quality. India: Maruti Suzuki uses AI for vehicle quality checks.	AI enhances product reliability and reduces manufacturing waste.
Education	Personalised Learning – AI adapts content to students' learning pace.	Globally, Khan Academy uses AI for math tutoring. In India, Byju's AI-based platform tailors lessons for students.	AI-driven education tools improve student engagement and performance.

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	Automated Grading – AI evaluates assignments, saving teachers time.	Global: AI grades online tests automatically. India: CBSE is exploring AI for exam evaluation.	AI can reduce grading workload by over 40%.
Customer Service	Chatbots – AI-powered virtual assistants provide instant support.	Global: Many companies use AI chatbots. India: HDFC Bank's EVA chatbot answers customer queries.	AI chatbots cut customer service costs by 30%.
	Personalised Recommendations – AI suggests relevant content/ products.	Global: Netflix recommends shows using AI. India: Hotstar uses AI to recommend content.	AI-driven recommendations enhance user experience and engagement.
Agriculture	Precision Farming – AI optimises crop yields using sensors and drones.	Global: AI drones monitor farmland. India: Agri-tech startup CropIn helps farmers with AI-based solutions.	AI increases crop yields while reducing water and pesticide use.
	Autonomous Tractors – AI automates farming tasks for efficiency.	Global: John Deere develops self-driving tractors. India: Mahindra & Mahindra is working on AI-powered agricultural machinery.	AI lowers labor costs and boosts productivity.

KEY ISSUES CONCERNING AI REGULATION AND USE

- **Defining AI:** There is no universally agreed-upon definition, making regulation inconsistent. An OECD 2023 survey found that policymakers struggle to define AI, affecting global policy alignment.
- **Balancing Innovation and Regulation:** Overregulation can slow AI advancements in critical sectors like healthcare. EU AI Act could delay life-saving AI medical tools. Bias and Discrimination: AI models can reinforce societal biases, leading to unfair outcomes. Amazon's AI hiring tool discriminated against women due to biased training data.
- **Transparency and Explainability:** Many AI decisions lack clear explanations, making accountability difficult. AI-driven loan rejections without justification raise fairness concerns.
- **Accountability and Liability:** Unclear legal responsibility when AI systems fail or cause harm. Who is liable when a self-driving car causes an accident—the manufacturer, software developer, or owner?
- **Safety and Security Risks:** AI vulnerabilities can lead to failures or cyberattacks. Example: Tesla's Autopilot failed to detect an obstacle, causing a crash.
- **Data Privacy Concerns:** AI systems collect and process vast amounts of personal data, raising privacy risks. AI-powered surveillance tools often lack proper safeguards for biometric data.
- **Global Cooperation Challenges:** Differing AI regulations create fragmentation, making compliance complex. For example, the EU enforces a risk-based AI approach, while the US prefers sector-specific regulations.

- **Public Perception and Misinformation:** Fear, distrust, and AI-generated misinformation can erode public confidence. Example: Deepfakes spread misinformation, impacting elections and public discourse.

COURSE OF ACTION FOR REGULATING AI AND ENSURING SUSTAINABLE AI DEVELOPMENT

- **Establish Strong Ethical AI Principles:** AI must prioritise human rights, fairness, and transparency to ensure ethical use. For example, the EU's GDPR enforces strict AI data privacy laws, protecting individuals from misuse.
- **Implement Robust Safety and Security Standards:** AI systems should be safe, reliable, and resistant to cyber threats. Microsoft's AI-driven cybersecurity tools detect and prevent cyberattacks in real-time.
- **Create Clear and Adaptive AI Regulations:** Governments must develop flexible laws that evolve with AI advancements. Example: India's NITI Aayog AI framework promotes responsible AI use in healthcare and agriculture.
- **Ensure AI Transparency and Explainability:** AI models should be interpretable and accountable for their decisions. Example: Google's Explainable AI tools help industries understand AI-driven decisions.
- **Encourage International Cooperation and AI Governance:** Global partnerships can harmonise AI regulations and prevent misuse. For example, the Global Partnership on AI (GPAI) unites nations to ensure ethical AI development.
- **Invest in AI Education and Workforce Training:** AI literacy programs must prepare individuals for AI-driven economies. Example: Google's AI for Everyone initiative trains professionals on ethical AI practices.
- **Promote AI for Sustainable Development:** AI should address global challenges like climate change, agriculture, and healthcare. AI-driven precision farming in India optimises water use and boosts crop yields.
- **Establish Independent AI Oversight and Accountability Mechanisms:** Regulatory bodies must monitor AI use, enforce laws, and address violations. For example, the EU AI Act proposes an independent authority to oversee AI safety and ethics.

CONCLUSION

The Paris AI Action Summit 2025 is a pivotal step toward global AI governance. Led by India and France, it highlights the need for collaboration on ethics, regulation, and innovation. Constructive global action is crucial for establishing transparent policies and fostering sustainable advancements to ensure AI's responsible and inclusive growth.

INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR (ITER)

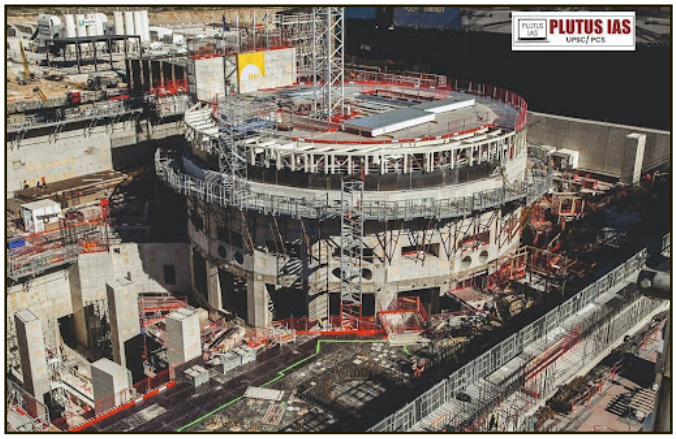
WHY IN THE NEWS?

Prime Minister Narendra Modi and French President Emmanuel Macron jointly visited the International Thermonuclear Experimental Reactor (ITER) in Cadarache, France. This historic visit marks the first time any Head of State or Government has toured ITER, one of the world's most ambitious fusion energy projects. The visit underscores India and France's commitment to advancing clean energy technologies, with ITER aiming to demonstrate fusion as a large-scale, carbon-free energy source.



WHAT IS ITER?

ITER (originally the International Thermonuclear Experimental Reactor, also meaning "the way" in Latin) is a global nuclear fusion research megaproject aimed at generating energy through fusion, similar to the process occurring in the Sun. It is the world's largest fusion experiment, being constructed in Cadarache, France.



BRIEF HISTORY OF ITER

- **1985:** Concept proposed during the Geneva Superpower Summit.
- **2006:** Seven partners formally agreed to fund and develop ITER.
- **2013:** Construction began at the Cadarache site.
- **2020:** Assembly of the Tokamak reactor started.
- **2035 (Planned):** Expected to achieve first deuterium-deuterium plasma operation.

PARTICIPATING COUNTRIES

ITER is a collaborative effort of seven major members: China

- **European Union**
- **India**
- **Japan**
- **Russia**
- **South Korea**
- **United States**

Other nations, including Australia, Canada, Kazakhstan, and Thailand, have cooperation agreements.

ITER PARTICIPANTS AND THEIR CONTRIBUTIONS

Country/Region	Contribution
China	Contributes superconducting magnets, vacuum vessel components, and other high-tech systems.
European Union	Largest financial contributor (~45% of funding), provides Tokamak building, cooling water, and power supply systems.
India	Supplies cryostat, cooling systems, and diagnostics.
Japan	Provides superconducting cables, neutral beam heating systems, and remote handling technology.
Russia	Supplies superconducting cables, gyrotrons for plasma heating, and diagnostic systems.
South Korea	Contributes superconducting magnets, vacuum vessel sectors, and power supply systems.
United States	Provides Tokamak cooling water systems, central solenoid magnets, and diagnostics.
Switzerland	Previously participated through Euratom; currently a non-participant due to EU policy.
United Kingdom	Initially part of Fusion for Energy via Euratom; withdrew in 2024 and is no longer a participant.

Australia	Not a full member, but has a technical cooperation agreement focusing on plasma research.
Kazakhstan	Signed a cooperation agreement in 2017 to contribute to fusion research.
Thailand	Joined via cooperation agreement (2018), focusing on knowledge exchange and research support.
Canada	Originally a full member but withdrew in 2003; rejoined in 2020 with a focus on tritium research.

OBJECTIVES OF ITER

- **Demonstrate Feasibility of Fusion Power:** Prove fusion as a large-scale, carbon-free energy source.
- **Achieve High Fusion Gain (Q Value):** Momentarily produce a plasma with thermal power 10× greater than the injected power (Q = 10). Sustain a steady-state plasma with Q > 5 for extended operation.
- **Sustain Long Fusion Pulses:** Maintain a fusion pulse for up to 8 minutes.
- **Develop Key Fusion Technologies:** Superconducting magnets. Remote handling and robotic maintenance.
- **Verify Tritium Breeding Concepts:** Test methods for producing tritium fuel within the reactor.
- **Enhance Neutron Shielding & Heat Conversion:** Improve technologies for handling energy released by fast neutrons in the fusion reaction.
- **Experiment with Burning Plasma State:** Study self-sustaining fusion reactions for future power plants.
- **Build Global Fusion Capabilities:** Develop skills, tools, supply chains, and project management expertise. Strengthen nuclear fusion industries in participating countries.

THE EXACT PROCESS AT ITER: HOW IT WORKS

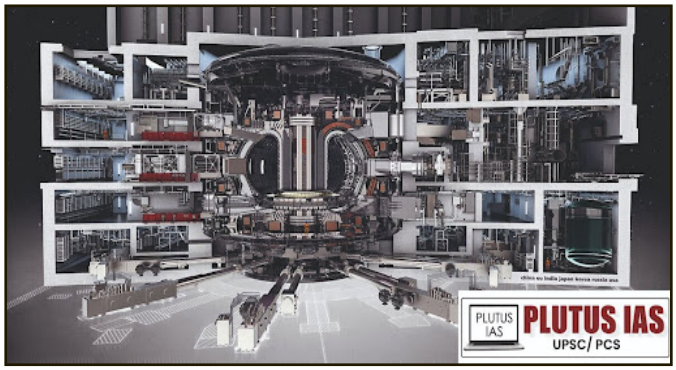
1. **Fuel Selection:** Deuterium-Tritium Fusion: ITER will use Deuterium (^2H) and Tritium (^3H), two isotopes of hydrogen, as fuel. Deuterium is extracted from seawater, while Tritium is scarce and will be produced inside the reactor using lithium.
2. **Creating Plasma:** Heating the Fuel to 150 Million °C: The reactor uses a Tokamak, a doughnut-shaped magnetic confinement device, to hold the fuel.
   Plasma (superheated ionized gas) is created by heating the deuterium-tritium mixture to 150 million degrees Celsius, 10 times hotter than the Sun's core.
   ITER uses three heating methods to reach this extreme temperature:
   Ohmic Heating – Using electrical currents inside the plasma.
   Neutral Beam Injection – Injecting high-energy neutral atoms into the plasma.
   Radio Frequency Heating – Using electromagnetic waves to energise plasma particles.
3. **Magnetic Confinement:** Containing the Plasma: Since plasma is extremely hot, it cannot touch the reactor walls..Strong superconducting magnets (cryogenically cooled to -269°C) create magnetic fields to confine and shape the plasma in the Tokamak chamber.
4. **Fusion Reaction:** Energy Generation
   Deuterium and Tritium nuclei collide and fuse, forming helium (^4He) and a high-energy neutron. The reaction releases 500 MW of heat energy, achieving a fusion gain (Q) of ≥10 (i.e., 10 times the input power).
   Helium remains trapped, helping sustain the plasma, while neutrons escape and transfer their energy to the reactor walls.
5. **Handling Energy:** No Electricity Generation Unlike commercial power plants, ITER will not convert heat into electricity.
   The released energy will be absorbed by the reactor walls and vented to study plasma behaviour. Future reactors (like DEMO) will use this energy to produce electricity.

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6. **Tritium Breeding:** Future Fuel Self-Sufficiency ITER will test a breeding blanket, a lithium-based material that captures escaping neutrons to produce Tritium, making future fusion plants self-sufficient.

ITER INSTRUMENTS AND THEIR USES

Instrument	Function/Use in Experiment
Vacuum Vessel	Contains plasma using magnetic fields; provides shielding and structural support.
Breeder Blanket	Tests tritium production via lithium reactions; contributes to fuel sustainability.
Magnet System	Confines and controls plasma using superconducting magnets (central solenoid, toroidal, poloidal, correction coils).
Neutral Beam Injectors (HNB)	Heats plasma by injecting high-energy neutral particles (deuterium ions).
Ion Cyclotron Resonance Heating (ICRH)	Uses radio waves to heat plasma ions by matching their oscillation frequency.
Electron Cyclotron Resonance Heating (ECRH)	Uses electromagnetic radiation to heat plasma electrons.
Cryostat	Maintains a super-cool vacuum environment for superconducting magnets and vacuum vessel.
Divertor	Removes waste and impurities from plasma, extracts heat, and prevents contamination.
Cooling Systems	Maintains operational temperature balance using water, liquid nitrogen, and helium cooling.



SIGNIFICANCE OF ITER

- **Breakthrough in Clean Energy:** Aims to demonstrate fusion power as a limitless, carbon-free energy source. Unlike fossil fuels, fusion does not produce greenhouse gases or long-lived radioactive waste.
- **Scientific and Technological Advancements:** Pioneers in plasma physics and fusion energy research. Develops cutting-edge superconducting magnets, tritium breeding, and neutron shielding.
- Energy Security & Sustainability: Fusion fuel (deuterium & lithium for tritium) is abundant and widely available. Reduces dependence on finite fossil fuels and nuclear fission.
- Global Collaboration: Largest international scientific collaboration in energy research. It involves seven major partners: the EU, the USA, China, India, Japan, Russia, and South Korea.
- **Economic & Industrial Impact:** Boosts high-tech industries, supply chains, and job creation in

participating countries. Strengthens expertise in engineering, robotics, and large-scale project management.

- **Lays Foundation for Future Fusion Reactors:** ITER is a stepping stone for commercial fusion power plants like DEMO. Helps refine reactor designs for sustainable power generation in the future.
- **Advancing Fundamental Physics:** Enhances understanding of plasma behavior, magnetism, and extreme heat conditions. Supports broader applications in space science, astrophysics, and material sciences.

PRESENT STATUS OF ITER

The reactor will not generate electricity but aims to demonstrate the feasibility of nuclear fusion as an energy source.
It seeks to produce 500 MW of fusion power while consuming only 50 MW, achieving a Q-value (fusion gain) of ≥10.
Construction delays and rising costs have led to budget estimates between €18-22 billion (some estimates suggest $45-65 billion).

Current Timeline:

First hydrogen plasma achieved: Work is 70% complete (as of mid-2020).
Full deuterium-tritium operations are planned for 2035.
ITER's successor, DEMO, aims to be the first fusion reactor to generate electricity experimentally.

ISSUES WITH ITER AND WAYS TO ADDRESS THEM

Challenges	Ways to Address	Steps Taken
Plasma Stability & Control	Advanced Magnetic Confinement – 18 powerful toroidal field magnets. – Active feedback control systems. – Pellet injection & magnetic perturbations.	Plasma control experiments in JET & EAST.
Material Durability	Radiation-Resistant Materials – Tungsten-based divertors. – EUROFER steel for neutron resistance.	ITER testing breeder blankets.
Tritium Fuel Supply	Breeding Tritium In-Situ – Lithium-based breeder blankets. – Tritium-sharing agreements.	Canada joined ITER (2020) for tritium expertise.
Superconducting Magnet Performance	High-Performance Superconductors – Nb_3Sn for toroidal coils, NbTi for poloidal coils. – Quench detection systems.	Successfully tested 40kA superconducting cables.
Vacuum Vessel & Heat Management	Efficient Cooling & Shielding – Helium-cooled blankets. – Advanced heat exchangers & liquid nitrogen cooling.	ITER cryostat completed in 2020.
Remote Handling & Maintenance	Robotic & AI-Driven Maintenance – Autonomous robots & manipulators. – AI-powered reactor monitoring.	Built Remote Handling Test Facility in France.

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Energy Gain & Continuous Operation	Optimized Plasma Heating & Fueling – Neutral beam injection, radio-frequency heating, electron cyclotron resonance. – Extended tokamak pulse length.	EAST tokamak achieved 1,056s sustained fusion (2023).
High Costs & Funding Issues	Global Cost-Sharing Model – International contributions (money, man-power, technology). – Public-private partnerships.	ITER Council ensures budget & financial stability.
International Collaboration & Politics	Independent Governance & Dispute Resolution – ITER Council neutral decision-making. – Bilateral agreements.	UK remains in fusion re-search despite Brexit (2024).
Construction & Engineering Complexity	Modular Assembly & Precision Manufacturing – Pre-fabricated components. – Digital twin technology for simulations.	70% of ITER components built & delivered.
Public Perception & Regulatory Hurdles	Transparent Communication & Safety Protocols – Open research publications. – Public education & outreach programs.	Fusion Education Programs launched globally.
Competition from Alternative Energy	Faster Development & Industry Partnerships – Collaborating with private fusion startups. – Exploring hybrid fusion-fission reactors.	First private-public fusion projects started in EU & US.

CONCLUSION

ITER is tackling technical & logistical challenges with cutting-edge solutions and global partnerships. Progress in plasma control, materials science, tritium breeding, and superconducting magnets is ensuring fusion's viability. Despite hurdles, ITER remains the world's most ambitious fusion experiment, paving the way for commercial fusion power.

PRELIMS QUESTION:

1. With reference to the Deep Ocean Mission (DOM), which of the following is/are correct?

1. The mission aims to develop a manned submersible capable of reaching depths of 6,000 meters.
2. The mission's total budget is estimated at Rs. 4,077 crore for a 10-year period.

Select the correct answer using the code given below:

A. 1 only

B. 2 only

C. Both 1 and 2

D. Neither 1 nor 2

2. With reference to Scramjet Engine technology, consider the following statements:

1. Scramjet engines are capable of operating at hypersonic speeds (Mach 5 and above).
2. Scramjets rely on rotating parts like turbines and compressors for air compression.
3. The combustion process in a scramjet engine occurs at supersonic speeds without any moving parts.

How many of the above-given statements are correct?

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A. Only one

B. Only two

C. All three

D. None

3. Consider the following statements:

1. The Union Budget 2025-26 aims to increase India's nuclear power capacity to 100 GW by 2047.
2. Bharat Small Reactors (BSRs) are designed for urban areas to support energy demands.
3. The government has approved the construction of a 6 x 1208 MW nuclear plant in Gujarat as part of the nuclear energy mission.

How many of the statements given above are correct?

A. Only one

B. Only two

C. All three

D. None

4. With reference to the Global Partnership on Artificial Intelligence (GPAI), Consider the following statement:

1. Global Partnership on Artificial Intelligence is an Intergovernmental cooperation set up by the G20 group.
2. India is the founding member of the Global Partnership on Artificial Intelligence (GPAI)
3. GPAI is hosted by the Organization of the Petroleum Exporting Countries (OPEC).

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

5. Which of the following is the primary objective of ITER?

A To develop nuclear fission technology

B To demonstrate the feasibility of fusion power as a large-scale energy source

C To produce electricity for commercial use

D To replace all existing power plants immediately

ANSWER

1. A	**2. A**	**3. A**	**4. A**	**5. B**

MAINS QUESTION:

1. Discuss the objectives, significance, and challenges associated with India's Deep Ocean Mission (DOM). How can India ensure that the mission remains sustainable in the long run?

(250 words, 15 marks)

2. Discuss the working principle and applications of scramjet engines in hypersonic technologies. How does India's successful testing of an actively cooled scramjet combustor contribute to the development of advanced defence technologies?

(250 words, 15 marks)

3. What are the challenges associated with the development of nuclear energy in India, and what measures can be taken to address them? Discuss in the context of the Union Budget 2025-26.

(250 words, 15 marks)

4. The regulation of Artificial Intelligence is not just the need of the hour but a raison d'être (fundamental necessity). Comment.

(Answer in 150 words)

5. Discuss the key objectives of the ITER project and how they contribute to the future of fusion energy.

(Answer in 150 words)



UNIQUE SECURITY CHALLENGES IN BORDER AREAS

WHY IN THE NEWS?

Union Home Minister and Minister of Cooperation, Shri Amit Shah, chaired a high-level review meeting in New Delhi on the security situation in Jammu and Kashmir. The meeting, attended by key officials including Jammu and Kashmir's Lieutenant Governor Shri Manoj Sinha and top officials from the Ministry of Home Affairs and the Jammu and Kashmir administration, discussed strategies to combat terrorism in the region. Shri Amit Shah emphasized the government's commitment, under Prime Minister Narendra Modi's leadership, to completely eradicate terrorism in Jammu and Kashmir. He directed security agencies to intensify efforts and set a "zero infiltration" goal while focusing on a ruthless approach towards terrorism and infiltration.



INDIA BORDER AND SECURITY:

Force	Established	Mandate
Border Security Force (BSF)	1965	Guards India's land borders prevents unauthorized entry, combats smuggling, ensures peace in border areas, and supports the Army during wartime.
Assam Rifles (AR)	1835	Secures northeastern borders, conducts counterinsurgency operations, and supports internal security with dual control (MHA & MoD).
Indo-Tibetan Border Police (ITBP)	1962	Guards the Indo-Tibetan border, prevents border violations and participates in disaster relief, rescue operations, and peacekeeping missions globally.
Sashastra Seema Bal (SSB)	1963	Secures India-Nepal and India-Bhutan borders focus on border security, counter-smuggling, unauthorized immigration, community policing, and disaster relief.
National Security Guard (NSG)	1984	Elite counter-terrorism force handling bomb disposal, hostage rescue, and counter-hijacking operations. Played a key role in the 26/11 Mumbai attacks.

Indian Coast Guard (ICG)	1978	Secures maritime borders, conducts anti-smuggling and anti-piracy operations, and handles disaster management along the coast.
Central Industrial Security Force (CISF)	1969	Secures critical infrastructure like airports, nuclear plants, and government buildings, provides fire safety, and VIP security, and protects heritage monuments.
Central Reserve Police Force (CRPF)	1939	Maintains internal security, conducts counterinsurgency operations, and provides law enforcement support in conflict zones, elections, and during disasters.
Special Protection Group (SPG)	1985	Provides proximate security to the Prime Minister, former Prime Ministers, and their families, with a focus on close protection and intelligence collaboration.

CHALLENGES TO NATIONAL SECURITY IN BORDER AREAS:

1. **Cross-Border Terrorism:** Infiltration by terrorist groups, especially from Pakistan and Bangladesh, remains a major threat.
2. **Smuggling & Illegal Immigration:** Porous borders facilitate arms, drugs, and human trafficking, threatening security.
3. **Border Disputes:** Ongoing territorial disputes, particularly with China and Pakistan, create tensions.
4. **Infiltration & Espionage:** Cross-border espionage and intelligence gathering pose serious risks.
5. **Ethnic & Political Instability:** Insurgencies and separatist movements complicate security in border regions.
6. **Technological & Cyber Threats:** Advanced technology like drones and cyberattacks challenge border defence systems.
7. **Lack of Infrastructure:** Remote areas lack roads, surveillance, and communication, hindering security efforts.
8. **Climate & Natural Disasters:** Harsh climates and disasters like floods complicate border management.
9. **International Relations:** Diplomatic tensions with neighbouring countries affect border security cooperation.
10. **Resource Constraints:** Limited manpower and funds stretch border security forces thin.

UNIQUE CHALLENGES TO INTERNAL SECURITY IN JAMMU KASHMIR:

1. **Cross-border Terrorism:** Militant groups, especially from Pakistan, infiltrate the region to carry out attacks, creating ongoing security threats.
2. **Separatist Sentiment:** A significant portion of the Kashmiri population desires an independent Kashmir, fueling protests and unrest.
3. **Social Media Manipulation:** Misinformation spreads on social media, exacerbating tensions and inciting violence.
4. **Narco-terrorism:** Drug trafficking funds terrorist activities, complicating the security environment.
5. **Difficult Terrain:** The region's mountainous geography makes surveillance and security operations difficult.
6. **Human Rights Concerns:** Allegations of human rights abuses by security forces alienate the local population.
7. **Political Instability:** Shifting government policies regarding Kashmir creates confusion and uncertainty among the people.

WAY TO IMPROVE BORDER SECURITY:

1. **Increase Cooperation:**

- **Coordinate Agencies:** Enhance communication between local authorities and border agencies.

- **Build Capacity:** Train officials to handle common border security challenges.
- **Facilitate Cooperation:** Promote collaboration at interagency, intra-service, and international levels.

2. **Improve Technology:**

- **Biometric Identification:** Use fingerprint, iris scanners, and facial recognition for border identification.
- **Surveillance Systems:** Deploy telecom fiber for monitoring and detecting unauthorized activities.
- **Floodlighting:** Illuminate border areas for improved visibility and security.

3. **Raise Awareness:**

- **Reduce False Documents:** Enhance technology and public awareness to limit counterfeit documents.

4. **Economic and Social Development:**

- **Trade and Relations:** Foster border community involvement in trade and diplomatic relations.
- **Border Area Development:** Focus on infrastructure and social development in border regions.

CONCLUSION

Border security is crucial for maintaining national sovereignty and stability. Challenges such as cross-border terrorism, smuggling, territorial disputes, and technological threats demand a multi-pronged approach. Increased cooperation between agencies, advanced technologies like biometric identification and surveillance systems, and raising public awareness can help mitigate these challenges. Additionally, economic development and infrastructure improvements in border areas are essential for enhancing security and fostering positive relations with neighbouring countries. Strategic, coordinated efforts are needed to ensure India's borders remain secure and protected.

NATIONAL SECURITY SOCIAL MEDIA

WHY IN THE NEWS?

India's digital boom, while offering immense potential, is accompanied by a surge in cybercrime. Home Minister Amit Shah outlined the government's response, emphasizing a multi-faceted strategy. This includes blocking malicious online content, fostering inter-agency collaboration to combat cyber threats, and employing AI to detect financial fraud. Recognizing the borderless nature of cybercrime, the government stresses a holistic approach encompassing software security, service provider responsibility, and user awareness. The rising number of cybercrime cases underscores the urgent need for these measures to safeguard India's burgeoning digital economy and its citizens. The government's goal is a substantial reduction in cybercrime, reflecting its commitment to a secure digital future.



WHAT IS SOCIAL MEDIA?

Social media refers to online platforms and tools that enable users to create, share, and interact with content, as well as connect with others. It allows people to communicate, exchange ideas, and build communities through text, images, videos, and other forms of media. Social media platforms typically offer features like messaging, commenting, liking, sharing, and following, which help users engage with one another.

1. **Facebook:** A platform for sharing personal updates, photos, and videos and engaging with friends, family, and communities.

2. **Instagram:** Focused on sharing images and videos, often with artistic or personal branding purposes.
3. **Twitter (now X):** A microblogging platform for sharing brief thoughts, news updates, and trending topics.
4. **TikTok:** A video-sharing app that allows users to create short, creative videos, often paired with music or special effects.
5. **LinkedIn:** A professional network for connecting with colleagues, recruiters, and businesses, used for career networking and sharing industry-related content.

HOW HAS SOCIAL MEDIA BECOME A THREAT TO INTERNAL SECURITY?

1. **Radicalization and Recruitment:** Extremist groups use social media to spread propaganda and recruit individuals, particularly vulnerable youth, leading to potential violence.
2. **Misinformation:** False information spreads rapidly, causing confusion, distrust, and social unrest, often fueling protests or riots.
3 **Cyberbullying and Harassment:** Online abuse harms individuals psychologically and disrupts social cohesion, contributing to societal instability.
4. **Organizing Protests and Riots:** Social media enables the coordination of protests, which can escalate into violence, creating public safety risks.
5. **Data Privacy Concerns:** Personal information shared on social media can be exploited for malicious purposes like identity theft or targeted misinformation.
6. **Foreign Interference:** Social media is used by foreign actors to manipulate public opinion, interfere in elections, and create political divisions.

WHAT ARE THE GOVT ACTION TO TACKLE THE THREAT OF SOCIAL MEDIA?SSSSSS

1. **Advisories:** MeitY has advised social media platforms to quickly remove misinformation and hoax bomb threats. Social media platforms are urged to report activities that threaten India's unity, integrity, sovereignty, security, or economic stability.
2. **Financial Assistance:** The central government provides financial assistance to law enforcement agencies in states and union territories to enhance their cybersecurity infrastructure and capabilities.
3. **Partnerships:** The government collaborates with academic institutions and R&D centres to build the cybersecurity workforce.
4. **Legal Action:** Social media platforms that fail to comply with the IT Rules and Bharatiya Nyay Sanhita (BNS) may face legal action.
5. **Reporting:** Social media threats can be reported to the Internet Crime Complaint Center (IC3).
6. **Other Actions:** The government has strengthened mechanisms to address and combat cybercrime.

CHALLENGES IN CONTROLLING THREATS FROM SOCIAL MEDIA:

1. **Misinformation and Fake News:** False information spreads rapidly on social media, causing confusion, inciting violence, or triggering harmful actions.
2. **Hate Speech and Cyberbullying:** Identifying and moderating harmful content like hate speech and bullying is difficult, especially when it's subtle or disguised.
3. **Privacy Concerns:** Balancing user privacy with the need to monitor for malicious activity is complex due to the large amount of personal data collected on platforms.
4. **Anonymity:** Online anonymity allows harmful behaviours to thrive without accountability, making it hard to trace perpetrators.
5. **Platform Complexity:** The vast number of social media platforms and their constantly evolving features make it hard to monitor and enforce rules consistently.
6. **Global Reach:** Social media threats can quickly cross international borders, requiring cooperation between multiple legal systems and jurisdictions to address them.

7. **Algorithmic Manipulation:** Algorithms that prioritize engagement can unintentionally amplify harmful content, making it more likely to spread.
8. **Social Engineering Attacks:** Cybercriminals exploit social media to manipulate users through scams like phishing, aiming to steal sensitive information.
9. **Resource Limitations:** Effective policing of social media requires significant human resources to review flagged content and take appropriate action.

WHAT ARE WAYS TO REGULATE SOCIAL MEDIA?

1. **Content Moderation:** Use AI and human moderators to detect and remove harmful content like hate speech and misinformation. Platforms should have clear guidelines and enforce them consistently.
2. **Platform Accountability:** Hold platforms accountable for harmful content and impose penalties for non-compliance with regulations.
3. **Transparency:** Require platforms to publish transparency reports on content moderation and disclose political ads to prevent manipulation.
4. **Data Privacy:** Strengthen user data protection with stricter privacy laws and ensure platforms get explicit consent before collecting data.
5. **Combating Misinformation:** Partner with fact-checkers, label false content, and provide context to reduce misinformation spread.
6. **Protect Vulnerable Groups:** Implement stronger protections against cyberbullying harassment and create safe spaces for users, especially minors.
7. **Media Literacy:** Promote digital literacy campaigns to help users identify misinformation and navigate social media safely.
8. **Cross-Border Cooperation:** Establish international regulations and cooperation between countries to tackle global issues like hate speech and cybercrime.
9. **Algorithm Transparency:** Regulate algorithms to prevent the amplification of harmful content and ensure user well-being is prioritized.

CONCLUSION

Social media has become an integral part of modern life, providing significant benefits in communication, networking, and content sharing. However, its widespread use also presents critical threats to internal security, such as radicalization, misinformation, cyberbullying, and privacy concerns. To address these threats, governments are taking multi-faceted actions, including advisories, financial assistance to law enforcement, partnerships with academic institutions, and legal measures to enforce compliance with regulations.

TERRORISM IN INDIA: CHALLENGES TO NATIONAL SECURITY

WHY IN THE NEWS?

German Chancellor Olaf Scholz has disapproved of US Vice President JD Vance's remarks at the Munich Security Conference, where Vance criticized European nations' stances on issues like free speech and immigration. Vance warned that the real threat to Europe comes from within, alleging a retreat from fundamental values shared with the United States. His comments, made on February 14, have sparked a larger debate about a potential rift in US-Europe relations. Scholz responded strongly, rejecting Vance's criticism as inappropriate among allies, highlighting a growing divergence in values between the two regions. This controversy highlights tensions surrounding political shifts in Europe and the US and raises questions about the future of transatlantic cooperation.

WHAT IS TERRORISM?

Terrorism is the use of violence or the threat of violence to create fear, typically aimed at achieving political, ideological, or religious goals. It often targets innocent civilians or symbolic sites, such as government buildings, embassies, or places of public gathering, to generate widespread panic and pressure governments or societies into making political changes. The key characteristic that

distinguishes terrorism from other forms of violence is its intentional focus on creating fear among a larger audience rather than achieving direct military victory. Terrorism can be carried out by non-state actors, such as extremist groups or individuals, or by state actors (state-sponsored terrorism). The motivations behind terrorism can vary widely, ranging from resistance against an oppressive regime to religious extremism to nationalist or separatist movements. Modern terrorism often involves tactics such as bombings, hijackings, kidnappings, and suicide attacks and has evolved to include cyberattacks and the use of weapons of mass destruction.

TERRORISM AND INDIA

1. **1993 Bombay Bombings:** 13 bomb blasts in Mumbai, killing 257 and injuring over 700. Linked to Dawood Ibrahim's D-Company and Pakistan-based groups.
2. **Parliament Attack (2001):** Militants attacked India's Parliament, killing 9 and injuring 18. Perpetrated by Jaish-e-Mohammed and Lashkar-e-Tayyaba.
3. **Mumbai 26/11 (2008):** Coordinated attacks on hotels, restaurants, and a train station, killing 164 and injuring 300+ by Lashkar-e-Tayyaba.
4. **Indian Airlines Flight 814 Hijacking (1999):** The hijacking of a flight, resulting in one death and 154 hostages, was carried out by Harkat-ul-Mujahideen.
5. **Godhra Train Burning (2002):** The train fire killed 59, sparking Gujarat riots, with accusations of local Muslim involvement.
6. **Delhi Bombings (2008):** Bomb blasts across Delhi killed 30 and injured over 100, orchestrated by the Indian Mujahideen.
7. **Uri Attack (2016):** Attack on an army base in Jammu and Kashmir, killing 18 soldiers, claimed by Jaish-e-Mohammed.
8. **Pulwama Attack (2019):** A suicide bombing killed 40 CRPF soldiers in Jammu and Kashmir, attributed to Jaish-e-Mohammed.

TERRORISM AS A THREAT TO NATIONAL SECURITY:

1. **Loss of Life and Property:** Terrorist attacks cause casualties and infrastructure damage and instil fear, undermining national stability.
2. **Governance Instability:** Terrorism weakens governments by challenging authority and creating political turmoil, potentially fueling extremism.
3. **Economic Consequences:** Attacks disrupt markets, decrease tourism and investment, and lead to high-security costs, hindering economic growth.
4. **International Relations:** Terrorism's transnational nature strains diplomatic relations, requiring international collaboration on counter-terrorism measures.
5. **Radicalization and Recruitment:** Terrorist groups exploit grievances to recruit individuals, sometimes leading to homegrown terrorism.
6. **Cyber Terrorism:** Terrorist groups target critical infrastructure through cyber-attacks, creating widespread disruption.
7. **Human Rights Impact:** Counter-terrorism measures can infringe on civil liberties and human rights, potentially creating a backlash.
8. **Long-Term Effects:** Recovery from terrorist attacks takes years, with lingering social divisions and trauma.

GOVERNMENT OF INDIA'S INITIATIVE TO COUNTER TERRORISM:

1. **Legislation:** The Unlawful Activities (Prevention) Act (UAPA) allows for banning terrorist organizations and prosecuting individuals involved in terrorism. The National Investigation Agency (NIA) investigates terrorism-related cases across states.
2. **Intelligence & Surveillance:** Coordination between agencies like the Intelligence Bureau (IB) and RAW enhances intelligence sharing. National Counter Terrorism Centre (NCTC) aims for centralized counter-terrorism coordination.

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3. **Security Forces & Military:** The Indian Armed Forces, National Security Guard (NSG), and anti-insurgency operations play key roles in neutralizing threats.
4. **Border Security:** The Border Security Force (BSF) and ITBP prevent cross-border terrorism, with operations like "All Out" targeting militants in Kashmir.
5. **Counter-Radicalization:** The government engages in community programs, monitors social media, and promotes rehabilitation to counter-radicalization.
6. **International Cooperation:** India collaborates with countries like the U.S., and Russia, and through bodies like INTERPOL and SAARC to combat global terrorism.
7. **Financial Measures:** It combats terrorist financing by monitoring financial transactions and working with organizations like FATF.
8. **Public Awareness & Vigilance:** Campaigns encourage public vigilance, while emergency response systems ensure rapid action during attacks.
9. **Technological Advancements:** India uses surveillance tools and strengthens cyber defence to counter modern terrorist threats.

WHY DOES TERRORISM STILL PERSIST?

1. **Political Grievances:** Ongoing conflicts and weak governance create environments where terrorist groups thrive, exploiting political disputes and power vacuums.
2. **Ideological Extremism:** Radical ideologies, often fueled by religion or political beliefs, are spread through propaganda and social media, leading to recruitment and violence.
3. **Socioeconomic Inequality:** Poverty, lack of education, and limited opportunities make individuals vulnerable to radicalization, with extremist groups offering a sense of purpose.
4. **External Support:** State-sponsored terrorism and illegal funding sources like drug trafficking sustain terrorist organizations.
5. **Technological Advancements:** The internet and access to weapons enable terrorists to spread propaganda, recruit, and carry out sophisticated attacks.
6. **Martyrdom Ideology:** Some terrorists are motivated by the promise of martyrdom and the belief they are fighting for a greater cause.
7. **Social Factors:** Alienation and lack of identity, particularly among marginalized youth, make them more susceptible to extremist ideologies.
8. **Ineffective Counter-Terrorism:** Failure to address root causes and lack of global cooperation allow terrorist networks to persist.

WAY TO CONTAIN TERRORISM

1. **Strengthen Security & Intelligence:** Improve intelligence sharing, surveillance, and counter-terrorism operations to prevent attacks.
2. **Counter Radicalization:** Promote education, community programs, and rehabilitation for at-risk individuals to prevent extremist ideologies.
3. **Address Socioeconomic Inequality:** Invest in poverty reduction, job creation, and education to reduce vulnerability to terrorism.
4. **Legislation:** Strengthen anti-terrorism laws and ensure swift prosecution to deter terrorist activities.
5. **Disrupt Financing:** Monitor and block financial channels funding terrorism and combat money laundering.
6. **International Cooperation:** Collaborate with global partners for intelligence sharing and joint operations to disrupt terrorist networks.
7. **Resolve Root Causes:** Address political grievances and conflicts and promote good governance to reduce terrorist motivations.
8. **Cybersecurity:** Monitor and prevent online radicalization and protect against cyber-attacks.
9. **Community Engagement:** Build trust with local communities and encourage cooperation to identify threats.

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CONCLUSION

The news highlights a controversy between German Chancellor Olaf Scholz and U.S. Vice President JD Vance, who criticized European nations on issues like free speech and immigration at the Munich Security Conference. Vance warned about Europe's retreat from shared values with the U.S., sparking a debate over a potential rift in U.S.-Europe relations. Scholz rejected these comments, emphasizing the importance of unity between allies, pointing to a growing divergence in values between the two regions. This ongoing tension reflects larger shifts in political dynamics, both in Europe and the U.S., with implications for future cooperation between the two regions.

POROUS BORDERS : THREAT TO INTERNAL SECURITY

WHY IN THE NEWS?

The 55th BSF-BGB Director General Level Border Coordination Conference is in the news as it is being held in New Delhi . The talks, led by DG BSF Daljit Singh Chawdhary and DG BGB Major General Mohammad Ashrafuzzaman Siddiqui, focus on border security, crime prevention, and trade infrastructure. The MEA stressed the importance of honouring MoUs and agreements for better coordination



BRIEF ABOUT INDIA & ITS BORDER

India shares its land borders with seven countries, spanning approximately 15,106 kilometres, and has a maritime boundary of 7,516 kilometres along the Arabian Sea, the Indian Ocean, and the Bay of Bengal. While some land borders are secured with fencing and checkpoints, others remain porous due to geographical and diplomatic complexities, leading to infiltration and smuggling. Maritime security faces challenges like piracy, illegal migration, and unregulated fishing. Initiatives like the Sagar Mala Programme and Coastal Surveillance Network (CSN) are strengthening India's border security, ensuring both land and sea frontiers are well-guarded.

GOVERNMENT INITIATIVES FOR BORDER MANAGEMENT

1. **Border Infrastructure Development:** Projects like the construction of border roads and fencing aim to enhance mobility for security forces and deter unauthorized crossings. Example: The Bharatmala Project aims to construct highways along border areas for improved military and logistical movement.
2. **Deployment of Specialized Forces:** The BSF, Indo-Tibetan Border Police (ITBP), and Sashastra Seema Bal (SSB) are strategically positioned along various borders, each trained to handle specific regional challenges. Example: The Rashtriya Rifles is a counter-insurgency force deployed in Jammu and Kashmir to neutralise threats from cross-border terrorism.
3. **International Collaborations:** Regular dialogues and joint exercises with neighbouring countries, exemplified by the BSF-BGB conferences, aim to address cross-border issues like smuggling, human trafficking, and infiltration. Example: The India-Myanmar Border Agreement facilitates coordinated patrolling and intelligence-sharing to curb insurgent activities.
4. **Legal and Policy Measures:** Enactment of laws such as the Passport (Entry into India) Act and the Foreigners Act empowers authorities to regulate entry and manage the stay of foreigners.
5. **Community Engagement:** Initiatives like the Border Area Development Programme (BADP) focus on improving infrastructure and economic conditions in border regions, thereby fostering cooperation between

local communities and security agencies. Example: The Vibrant Villages Programme (VVP) promotes the development of villages along the Indo-China border to strengthen security through community participation.

POROUS BORDERS: A THREAT TO INTERNAL SECURITY

1. **Infiltration by Militants:** Unmonitored borders can be exploited by insurgents and terrorists to enter the country. Example: The Samadhan Doctrine, a counter-Maoist strategy, focuses on blocking infiltration routes from Nepal and Myanmar.
2. **Smuggling of Arms and Narcotics:** Illicit trade in weapons and drugs thrives in areas where border control is weak, funding criminal activities and insurgencies. Example: The Narco Coordination Centre (NCORD) targets drug trafficking along the India-Pakistan and India-Myanmar borders.
3. **Human Trafficking:** Porous borders facilitate the trafficking of persons for forced labour, prostitution, and other exploitative purposes, leading to severe human rights violations. Example: The Ujjwala Scheme provides support for victims of human trafficking by offering rehabilitation and reintegration services.
4. **Economic Threats:** Smuggling of goods undermines the local economy and results in significant revenue losses for the government. Example: The Operation Thunderstorm initiative cracked down on cross-border smuggling networks in Northeast India.
5. **Spread of Diseases:** Unregulated cross-border movement can lead to the spread of infectious diseases, posing public health challenges. Example: The Integrated Disease Surveillance Programme (IDSP) monitors and responds to disease outbreaks in border regions.
6. **Demographic Changes:** Illegal immigration can alter the demographic composition of border areas, leading to social and political tensions. Example: The National Register of Citizens (NRC) was implemented in Assam to identify and curb illegal immigration.

CHALLENGES IN BORDER MANAGEMENT

1. **Diverse and Difficult Terrains:** The varied geography, from the Himalayas to dense forests and riverine landscapes, hampers the establishment of physical barriers and consistent patrolling. Example: The Border Outposts Strengthening Programme focuses on securing vulnerable border stretches.
2. **Lengthy Borders:** The sheer expanse of India's borders makes comprehensive monitoring a daunting task. Example: CIBMS is being deployed along the Indo-Pak and Indo-Bangladesh borders for round-the-clock surveillance.
3. **Cross-Border Cultural Ties:** Ethnic and cultural affiliations often span borders, complicating enforcement actions. Example: The Indo-Nepal Treaty of Peace and Friendship allows free movement but poses security risks.
4. **Resource Constraints:** Ensuring adequate manpower, advanced technology, and infrastructure across all border areas requires substantial investment. Example: Modernization of Police Forces (MPF) Scheme provides funding to improve law enforcement in border states.
5. **Political and Diplomatic Sensitivities:** Border disputes necessitate careful handling to prevent escalation.
6. **Local Opposition:** Infrastructure projects like fencing can face resistance from local populations due to concerns over livelihood and restricted movement.

RECOMMENDATION FOR BETTER BORDER MANAGEMENT

1. **Technological Integration:** Adopt advanced surveillance systems, including drones, motion sensors, and satellite imagery, to monitor remote and sensitive areas effectively. Example: Drone-Based Border Surveillance Project enhances real-time threat detection.
2. **Enhanced Training and Resources:** Provide specialized training for border security personnel and equip them with modern tools to detect and prevent illegal activities. Example:

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The Police Modernization Scheme ensures the latest equipment for border forces.

3. **Strengthened International Cooperation:** Engage in regular dialogues, intelligence sharing, and joint operations with neighbouring countries to address cross-border challenges collaboratively. Example: BIMSTEC Border Security Cooperation enhances regional counter-terrorism efforts.

4. **Community Participation:** Involve local communities in security efforts by addressing their socio-economic needs and encouraging them to report suspicious activities.

5. **Policy Reforms:** Regularly update and enforce laws to address emerging threats and ensure stringent penalties for violations related to border security.

CONCLUSION

Securing India's borders i a multifaceted challenge that requires a balanced approach, integrating technological advancements, robust policy frameworks, international cooperation, and community engagement. The 55th Director General-level Border Coordination Conference between the BSF and BGB exemplifies the ongoing efforts to address these challenges through dialogue and collaboration. By implementing comprehensive and adaptive strategies, India can enhance its border security and safeguard national integrity.

PRELIMS QUESTIONS:

1. With reference to the Border Security Forces in India, consider the following statements:

1. The Border Security Force (BSF) was established in 1965 to protect India's land borders.
2. The Indo-Tibetan Border Police (ITBP) is responsible for securing India's borders with Nepal and Bhutan.
3. The National Security Guard (NSG) specializes in counter-terrorism operations and has a significant role in bomb disposal and hostage rescue.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

2. Which of the following statements are correct regarding the challenges posed by social media to internal security?

1. Misinformation on social media can lead to public confusion and unrest.
2. Cyberbullying and online harassment do not significantly affect social cohesion.
3. Anonymity on social media can protect harmful individuals from accountability.

Select the correct answer using the code given below:

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

3. Which of the following statements is correct about terrorism?

1. Terrorism is solely carried out by non-state actors.
2. Terrorism aims to create fear in a society to achieve political, ideological, or religious goals.
3. Modern terrorism may involve tactics like cyber-attacks and the use of weapons of mass destruction.

Select the correct answer using the code given below:

A. 1 and 2 only

B. 2 and 3 only

C. 1 and 3 only

D. 1, 2 and 3

4. Consider the following statements regarding the Border Security Force (BSF) and the Border Guard Bangladesh (BGB):

1. The BSF operates under the Ministry of Defense, whereas the BGB is under the Ministry of Home Affairs of Bangladesh.
2. The primary focus of BSF-BGB coordination meetings is to enhance trade relations between India and Bangladesh.
3. The Indo-Bangladesh border is India's longest land border with any neighboring country.

Which of the statements given above is/are correct?

A. 1 and 2 only

B. 2 and 3 only

C. 3 only

D. 1, 2, and 3

ANSWER

1. B	**2. C**	**3. B**	**4. C**

MAINS QUESTIONS:

1. Discuss the importance of inter-agency coordination and technological advancements in strengthening border security in India.

(250 words, 15 marks)

2. Critically examine the government's approach to tackling the threats posed by social media to internal security, focusing on measures such as content moderation, legal action, and international cooperation.

(250 words, 15 marks)

3. In light of global terrorism, explain the measures India has undertaken to counter terrorism and how these initiatives contribute to national security.

(250 words, 15 marks)

4. India's porous borders pose a significant challenge to national security. Analyze the threats emanating from land and maritime borders, citing recent examples.?

(250 words, 15 marks)





INDIA'S HEALTH CARE: TRANSFORMING HEALTHCARE THROUGH DIGITALIZATION

WHY IN THE NEWS?

India's healthcare sector is undergoing a digital transformation driven by government initiatives, policy reforms, and technological advancements. With a growing population and rising healthcare demands, digital health solutions are enhancing accessibility, affordability, and efficiency. Key technologies like telemedicine, electronic health records (EHRs), and AI-driven diagnostics are helping bridge the gap between urban and rural services. The World Economic Forum highlights India's potential to lead globally in digital health, with a focus on public-private partnerships, interoperability, and strong data governance. Initiatives like the Ayushman Bharat Digital Mission (ABDM) and the Digital Health Incentive Scheme (DHIS) are paving the way for a resilient digital healthcare ecosystem and could set a global benchmark.

WORLD ECONOMIC FORUM APPRAISAL:

India's healthcare landscape is undergoing a digital transformation driven by government initiatives, policy reforms, and technological advancements. With a rapidly growing population and increasing demand for quality healthcare, digital health solutions are playing a crucial role in enhancing accessibility, affordability, and efficiency. Digital healthcare infrastructure in India is evolving to bridge the gap between urban and rural healthcare services, leveraging telemedicine, electronic health records (EHRs), and artificial intelligence (AI)-driven diagnostics. The recent World Economic Forum (WEF) article highlights India's potential to become a global leader in digital health by building a resilient digital health ecosystem. The report emphasizes the role of public-private partnerships, the importance of interoperability, and the need for robust data governance frameworks. It underscores how India's initiatives, such as the Ayushman Bharat Digital Mission (ABDM) and the Digital Health Incentive Scheme (DHIS), can set a global benchmark for digital healthcare transformation.

DIGITAL HEALTH INITIATIVES:

1. **Ayushman Bharat Digital Mission (ABDM): The Ayushman Bharat Digital**

Mission (ABDM) aims to create a digital health ecosystem in India, connecting healthcare providers and patients via unique health IDs. Key features include:

Health ID: A unique ID to store and share medical records.

Healthcare Professionals Registry (HPR): A database of registered healthcare professionals.

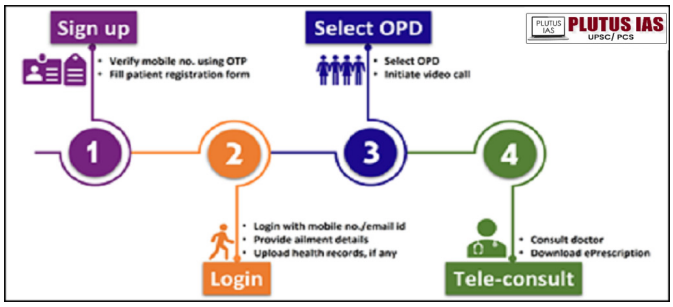
Health Facility Registry (HFR): A repository of healthcare facilities.

Unified Health Interface (UHI): A platform for digital health services. Over 200,000 Ayushman Arogya Mandirs provide early diagnosis for diseases like cancer, hypertension, and diabetes. As of January 2025, 73 crore ABHA accounts have been created, with 49.15% women beneficiaries. The mission also facilitates offline account creation in areas with limited connectivity. A collaboration with IIT Kanpur will leverage AI for healthcare research, while the Digital Health Incentive Scheme (DHIS) offers financial rewards to healthcare providers adopting digital solutions, promoting a paperless healthcare system.



2. **Telemedicine and e-Sanjeevani:** The e-Sanjeevani platform offers remote doctor consultations with two main modules: OPD (doctor-to-patient consultations) and AB-HWC (connecting remote Health and Wellness Centers with specialist doctors). This is particularly beneficial in rural or underserved areas.





3. **U-Win Portal:** This platform is dedicated to digitizing vaccination services for pregnant women and children. It provides features like self-registration, automated alerts, and e-vaccination certificates and even allows users to create Ayushman Bharat Health Account IDs for themselves and their children.



4. **Aarogya Setu App:** Initially developed for COVID-19 tracking, this app has evolved into a broader digital health service platform. It integrates various services like scheduling doctor appointments, receiving prescriptions, downloading vaccination certificates, and managing digital health records.



5. **e-Hospital:** Part of the Digital India initiative, this platform is a hospital management system for both patients and healthcare providers. It integrates services like blood bank management and hospital

registrations, making healthcare more accessible online.



6. National Tele Mental Health Programme (Tele MANAS): Launched in 2022, this program aims to improve access to mental health services through teleconsultations, with more than 17.6 lakh calls handled as of January 2025.



KEY POLICIES SHAPING DIGITAL HEALTH CARE:

1. **National Health Policy (NHP) 2017:** Focuses on using digital technologies like electronic health records and telemedicine to improve healthcare accessibility and efficiency, especially in rural and underserved areas.
2. **National Health Mission (NHM):** Supports health infrastructure and human resources, aiming to improve access to quality healthcare for marginalized and rural populations. It provides technical and financial assistance to states for strengthening public healthcare systems.
3. **Health Data Management Policy:** Ensures privacy, security, and governance of digital health records, with strict protocols for patient consent, data anonymization, and secure data exchange across stakeholders.
4. **National Digital Health Mission (NDHM):** Aims to provide universal health coverage through a digital infrastructure, including Health IDs, Digi Doctor repositories, Health Facility Registers, and Personal Health Records. It focuses on interoperability, cybersecurity, and data exchange to ensure a secure and accessible healthcare ecosystem.



5. **Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM):** Strengthens primary, secondary, and tertiary healthcare infrastructure, integrating digital health technologies to enhance service delivery, research, and emergency response capacities. It's the largest public health infrastructure initiative since 2005.

CONCERNS REGARDING DIGITAL HEALTH CARE:

1. **Data Privacy & Security:** The increasing use of digital health records raises risks of breaches and misuse despite policies in place to ensure data protection.
2. **Digital Divide:** Rural areas still struggle with limited internet access and digital literacy, preventing full adoption of digital health services.

3. **Interoperability:** Achieving seamless integration across various health systems (e.g., Health IDs, EMRs) is a major challenge, hindering data exchange and continuity of care.
4. **Regulation & Accountability:** Clear regulations are needed for AI-driven diagnostics and telemedicine to ensure quality care and patient safety.
5. **Healthcare Worker Training:** Ongoing training for healthcare professionals is crucial to effectively use digital tools, preventing errors in patient care.
6. **Ethical Concerns:** AI in healthcare raises questions around transparency, biases, and informed consent, potentially impacting patient outcomes.
7. **Sustainability & Funding:** Maintaining and scaling digital health infrastructure requires continuous investment and resources to stay up to date.

WAY FORWARD:

1. **Strengthening Data Security & Privacy:** Ensure strict compliance with data protection regulations and continually update security measures to safeguard health data. Implement advanced encryption and blockchain technologies to enhance security and maintain patient trust.
2. **Bridging the Digital Divide:** Increase investments in digital infrastructure, especially in rural and underserved areas, to ensure that everyone can access digital health services. Provide training programs to improve digital literacy among healthcare workers and the general population.
3. **Achieving Interoperability:** Promote standardized frameworks for data exchange across health systems. Ensure seamless integration between digital health services like Health IDs, EHRs, and telemedicine platforms to facilitate smooth and efficient healthcare delivery.
4. **Establishing Clear Regulations:** Develop comprehensive regulatory frameworks for AI-driven healthcare technologies and telemedicine, ensuring quality standards and accountability. Create transparent guidelines for AI usage and ensure consistent monitoring to guarantee patient safety.
5. **Healthcare Worker Training & Support:** Implement continuous training programs for healthcare professionals to effectively use digital tools and stay updated on new technologies. Provide ongoing technical support and education to ensure the proper utilization of digital health services.
6. **Addressing Ethical Issues in AI:** Develop ethical guidelines for AI usage in healthcare, ensuring transparency, fairness, and accountability in AI-driven decision-making. Conduct regular audits of AI systems to prevent biases and ensure equitable treatment for all patients.
7. **Sustainable Investment & Funding:** Ensure sustained government and private sector investments to expand and maintain digital health infrastructure. Explore innovative funding models like public-private partnerships (PPP) to ensure the long-term sustainability of digital health solutions.

CONCLUSIONS

India's digital healthcare transformation holds immense potential to enhance healthcare accessibility and efficiency. With continued policy support, infrastructure development, and public-private collaborations, the country is poised to emerge as a global leader in digital health. Future focus areas include AI-driven diagnostics, blockchain-based health records, and enhanced cybersecurity frameworks. The Indian government's proactive approach toward digital healthcare infrastructure and policies is shaping a more efficient and accessible healthcare system. With growing investments in digital health and technological advancements, India's healthcare system is expected to evolve into a globally recognized model for digital transformation, setting benchmarks for other developing nations.

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NATIONAL COMMISSION FOR SAFAI KARAMCHARIS (NCSK): UPHOLDING THE SPIRIT OF ARTICLE 17 OF THE CONSTITUTION

WHY IN THE NEWS?

The Union Cabinet has approved the extension of the tenure of the National Commission for Safai Karamcharis (NCSK) for three more years, up to March 31, 2028. The financial implications of this extension are estimated to be ₹51 crore. The current tenure of the Commission was set to expire on March 31, 2025, but has now been extended. Originally established as a statutory body under the National Commission for Safai Karamcharis Act 1993, the Commission became a non-statutory body after the Act lapsed in 2004. Its role expanded after the enactment of The Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013, focusing on the elimination of manual scavenging and the rehabilitation of affected workers.

WHAT IS NCSK?

The National Commission for Safai Karamcharis (NCSK) was constituted on 12 August 1994 as a statutory body under the National Commission for Safai Karamcharis Act 1993. It was initially established for three years, up to 31 March 1997. Through amendments in 1997 and 2001, the Act's validity was extended to March 2002 and then to February 2004. After the Act lapsed on 29th February 2004, NCSK has been functioning as a non-statutory body under the Ministry of Social Justice and Empowerment. Its tenure is extended periodically through Government Resolutions.





THE MANDATE OF THE NATIONAL COMMISSION FOR SAFAI KARAMCHARIS (NCSK)

1. **Recommendations for Upliftment:** Advise the Central Government on specific programs for eliminating inequalities in status, facilities, and opportunities for Safai Karamcharis. Recommend measures for the social and economic upliftment of Safai Karamcharis.

2. **Monitoring and Evaluation:** Study and evaluate the implementation of programs and schemes related to the social and economic rehabilitation of Safai Karamcharis and scavengers. Investigate specific grievances and take suo-motu notice regarding non-implementation of:

- Programs or schemes for Safai Karamcharis.
- Decisions, guidelines, or instructions aimed at mitigating hardships.
- Legal provisions concerning Safai Karamcharis.
- Could you report these matters to the concerned authorities, as well as the central or state governments?

3. **Working Conditions Assessment:** Study and monitor working conditions, including health, safety, and wages of Safai Karamcharis employed under various agencies (Government, Municipalities, Panchayats, etc.). Make recommendations to improve these conditions.

4. **Reporting to Governments:** Submit reports to central or State Governments on issues concerning Safai Karamcharis, highlighting their difficulties and disabilities. Address any other matter referred by the Central Government.

5. **Implementation of the Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013:**

- Monitor the implementation of the Act.

- Enquire into complaints regarding contraventions of the Act and provide findings to relevant authorities with recommendations for further action.
- Advise Central and State Governments for the effective execution of the Act.
- Take suo-motu notice of any non-implementation of the Act.
- Possess authority to call for information from any Government or local authority regarding the above matters.

6. Monitoring Supreme Court Judgment (W.P. (C) No. 324 of 2020 - Dr Balram Singh & Others Vs. Union of India):

- **Compensation for sewer deaths:** The revised compensation amount is Rs. 30 lakhs, payable by the concerned agency (Union, Union Territory, or State Government). If the dependents of any victim have not received this amount, it shall be paid accordingly.
- **Compensation for sewer victims with disabilities:** Compensation shall depend on the severity of a disability. Minimum salary: Rs. 10 lakhs. If the permanent disability renders the victim economically helpless, the compensation shall not be less than Rs. 20 lakhs.

WORKING OF THE COMMISSION:

- **Field Visits:** The Chairperson, Vice-Chairperson, and Members conduct extensive tours to assess the socio-economic conditions of Safai Karamcharis.
- **Interaction & Grievance Redressal:** Engage with Safai Karamcharis individually and through associations; take up grievances with local authorities.
- **Complaints Handling:** Receive and address complaints/petitions from Safai Karamcharis nationwide by seeking reports from concerned authorities.
- **Proactive Measures:** Take suo-motu cognisance of issues based on media reports and intervene proactively.
- **Investigations & Inquiries:** Conduct sittings across the country to investigate grievances, evaluate scheme progress, and ensure the implementation of laws.
- **Review & Monitoring:** Regular meetings and video conferences with State/Local authorities to review the problems of Safai Karamcharis. Status of compensation payments to sewer death victims' legal heirs.
- **Policy Recommendations:** Provide recommendations to the Ministry of Social Justice and Empowerment for rehabilitation and eradication of manual scavenging, both periodically and in Annual Reports.

KEY ACHIEVEMENTS OF NCSK

1. Regularly review sewer death cases and compensation payments with States/UTs through official communication with Chief Secretaries and other authorities.
2. Disposal of 51 cases where state authorities faced challenges in locating legal heirs after the Commission's intervention.
3. Ensuring compensation payments in 20 sewer death cases, with amounts ranging from Rs. 10 lakhs to Rs. 30 lakhs, paid promptly within one month of death.
4. Securing compassionate appointments for dependents of deceased Safai Karamcharis.
5. Inspection of Safai Karamcharis Neem Chowki Harizon Basti in Sawai Madhopur District, Rajasthan (March 2024) and directing the district administration to renovate the community centre.

THE NATIONAL COMMISSION FOR SAFAI KARAMCHARIS (NCSK) FACES SEVERAL CHALLENGES:

1. Non-Statutory Status: Since the lapse of the National Commission for Safai Karamcharis Act, 1993, in 2004, the Commission has been functioning as a non-statutory body. This limits its authority in enforcing decisions and recommendations.

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2. **Inadequate Implementation of Laws:** Despite The Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013, manual scavenging still persists in many parts of India. The lack of strict enforcement mechanisms leads to the continued exploitation of workers.

3. **Delayed Compensation for Sewer Deaths:** Many state governments delay or fail to provide compensation as mandated by the Supreme Court. Bureaucratic hurdles and difficulties in identifying legal heirs further slow down the process.

4. **Lack of Awareness and Reporting Mechanisms:** Many Safai Karamcharis are unaware of their rights and the legal provisions available to them. Fear of job loss prevents them from reporting unsafe working conditions and wage disparities.

5. **Poor Working Conditions:** Safai Karamcharis continues to face hazardous working environments, including exposure to toxic gases, lack of protective gear, and unsafe sanitation infrastructure. Employers often ignore health and safety regulations.

6. **Limited Employment Alternatives:** Rehabilitation efforts for manual scavengers are often ineffective, and there are limited opportunities for alternative livelihoods. Skill development programs and financial assistance schemes do not reach all beneficiaries.

7. **Inefficient Coordination Between Agencies:** Multiple agencies, including municipalities, state governments, and the central government, handle different aspects of Safari Karamcharis' welfare, leading to poor coordination. Delays in policy implementation and execution of schemes.

8. **Inadequate Funding and Resources:** The Commission lacks adequate financial and administrative resources to function effectively. Insufficient staff and infrastructure hinder field visits, grievance redressal, and monitoring.

9. **Non-recognition of Contractual and Informal Workers:** Many Safai Karamcharis work on a contractual basis and are not covered under various welfare schemes. Private agencies employing sanitation workers often evade accountability.

10. **Social Stigma and Discrimination:** Safai Karamcharis continues to face caste-based discrimination and exclusion from mainstream society. The stigma attached to sanitation work affects their access to education, housing, and other social services.

WAY FORWARD FOR NCSK

1. **Follow-up Mechanism**: Though NCSK's recommendations are not binding, a structured follow-up system should be established to ensure effective implementation, with regular monitoring by the Ministry of Social Justice and Empowerment.
2. **Increased Resource Allocation**: The government should enhance NCSK's financial and human resources to strengthen its functioning, outreach, and implementation of welfare schemes.
3. **Curbing Corruption**: Strict monitoring and accountability mechanisms should be implemented to prevent misuse of funds meant for Safai Karamcharis' welfare under schemes like Swachh Bharat Mission (SBM) and National Safai Karamcharis Finance and Development Corporation (NSKFDC).
4. **Financial Compensation Authority**: The Commission should be empowered to recommend and directly facilitate financial compensation under government provisions, such as the Supreme Court-mandated ₹30 lakh compensation for sewer deaths and other relief schemes.
5. **Alternative Employment Opportunities**: The Government should ensure the effective implementation of the Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS), skill development initiatives under the Skill India Mission, and NSKFDC loans for business startups.
6. **Reducing Social Stigma**: To improve their socio-economic conditions, Public awareness

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campaigns under Swachh Bharat Abhiyan and the inclusion of Safai Karamcharis in social welfare schemes like PM Awas Yojana and Ayushman Bharat should be promoted.

7. **Technology Integration**: Adopting advanced mechanized cleaning technologies under the Swachh Bharat Mission (Urban & Rural) should be prioritised to eliminate manual scavenging and ensure worker safety. The government should encourage states to procure robotic scavenging machines under the NAMASTE scheme for sewer and septic tank cleaning.

CONCLUSION

The NCSK plays a vital role in safeguarding Safai Karamcharis but faces challenges like lack of enforcement power, resource constraints, and ineffective implementation. Strengthening it with greater authority, financial autonomy, technological adoption, and government support is essential. A holistic approach involving policy reforms, skill development, and alternative employment will help eradicate manual scavenging and ensure dignity for Safai Karamcharis. Collaborative efforts are key to creating a safer and more inclusive environment.

A MILESTONE IN INDIA'S RURAL WATER REVOLUTION: JAL JEEVAN MISSION

WHY IN THE NEWS?

The Jal Jeevan Mission (JJM) is making headlines due to its ambitious goal of providing clean tap water to every rural household in India by 2024. Launched by Prime Minister Narendra Modi, the initiative aims to drastically reduce the gap between rural and urban water access. With only 17% of rural households having tap water connections at the time of launch, JJM plans to deliver water to nearly 16 crore additional households, directly benefiting over 19 crore rural families. This effort is not only about improving access but also enhancing public health and tackling disparities in water supply. The mission's progress is closely watched as it works towards its 2024 target, reshaping the water supply landscape for rural India.



KEY ACHIEVEMENTS:

As of August 12, 2024, 11.82 crore additional rural households have been connected to tap water under the JJM, bringing the total to 15.07 crore households (77.98% of rural households). This milestone significantly impacts rural populations by ensuring consistent access to potable water.

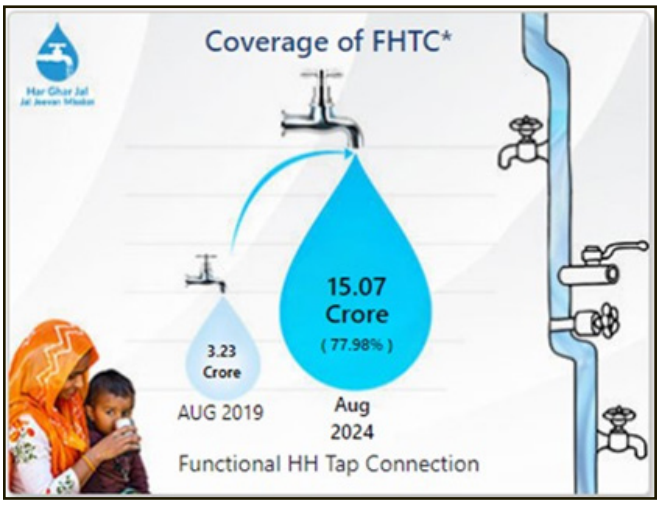
OBJECTIVES OF THE JAL JEEVAN MISSION

1. Provide tap water connections to every rural household.
2. Prioritize areas affected by poor water quality, drought, deserts, and villages under the Sansad Adarsh Gram Yojana (SAGY).
3. Provide tap water to essential public facilities, including schools, Anganwadi centres, health centres, and community buildings.
4. Monitor the functionality of tap connections to ensure consistent supply.
5. Encourage community participation (through cash, kind, or labour) to foster ownership of the project.
6. Ensure sustainability by maintaining water sources, infrastructure, and regular operational funding.

7. Empower the workforce in the water sector by training in various areas such as construction, plumbing, water quality management, and more.
8. Raise awareness about safe drinking water and promote shared responsibility among all stakeholders.

COMPONENTS UNDER JJM:

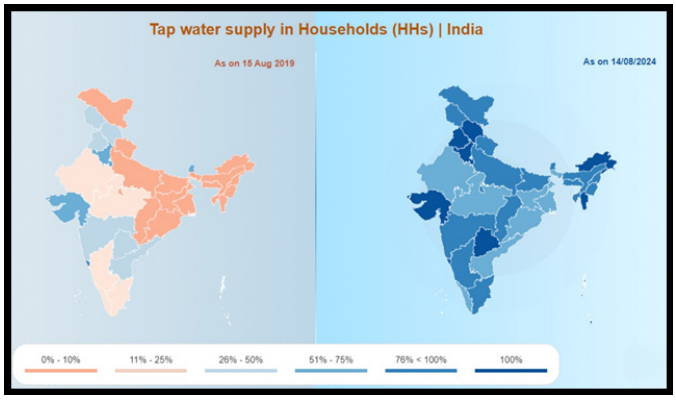
1. **Development of Infrastructure:** Creating or upgrading in-village piped water supply systems to connect every rural household to reliable tap water.
2. **Augmentation of Water Sources:** Developing and enhancing reliable sources of water, such as wells, borewells, rivers, or reservoirs, to ensure a sustainable water supply in rural areas.
3. **Bulk Water Treatment and Transfer:** Establishing or improving water treatment plants and bulk water transfer systems to ensure that clean, safe water reaches villages, especially in areas where local sources are insufficient.
4. **Technological Interventions for Contaminant Removal:** Installing technologies in areas where water quality issues, such as contamination by arsenic, fluoride, or iron, affect the water supply. These technologies help ensure that water is potable and safe for consumption.
5 **Retrofitting Existing Water Schemes:** Upgrading and modifying ongoing or completed water supply schemes to ensure that every household receives at least 55 litres of water per capita per day (lpcd).
6. **Greywater Management:** Implementing systems to manage and recycle greywater (wastewater from baths, sinks, etc.), reducing water wastage and promoting sustainable water use practices within rural communities. This also includes community training, research, and capacity-building initiatives to enable local participation in water management.
7. **Flexi Funds for Unforeseen Challenges:** Provision of Flexi Funds to address unforeseen challenges such as those arising from natural disasters, enabling timely and effective responses to safeguard the water supply.



IMPACT OF JJM

1. **Time-saving:** The mission saves an estimated 5.5 crore hours daily, mostly for women who no longer need to spend hours fetching water from distant sources.
2. **Health Improvements:** By providing safe drinking water, JJM helps prevent 400,000 deaths annually due to waterborne diseases like diarrhoea, which is a leading cause of death in rural areas. The initiative is also projected to save 14 million Disability-Adjusted Life Years (DALYs), indicating a significant improvement in public health.
3. **Reduction in Child Mortality:** According to Nobel Laureate Prof. Michael Kremer's research, safe water coverage can reduce child mortality among those under five by 30%, potentially saving 136,000 children's lives every year.
4. **Job Creation:** JJM's implementation is expected to generate 59.9 lakh person-years of direct employment during its capital expenditure phase. Additionally, 13.3 lakh person-years of direct employment will be generated during the operation and maintenance phase. Indirect employment is estimated at 2.2 crore person-years, leading to a significant boost to local economies.

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resources leads to reduced availability of clean and safe water for consumption.

4. Population Growth: Rapid population growth increases the demand for water, making it difficult to meet the needs of rural and urban areas alike, especially in water-scarce regions.

5. Agricultural Practices: Irrigation inefficiencies, such as flood irrigation and the overuse of water-intensive crops (e.g., rice, sugarcane), place immense pressure on available water resources.

CHALLENGES AND SOLUTIONS IN JAL JEEVAN MISSION (JJM):

Challenges	Solutions
Lack of Reliable Water Sources	Financial assistance from the Ministry of Finance for infrastructure development.
Groundwater Contamination	Technological interventions like filtration systems (e.g., reverse osmosis) for safe drinking water.
Uneven Geographical Terrain	Decentralized water supply systems, such as solar-powered pumps and rainwater harvesting.
Scattered Rural Habitations	Bulk water transfer and decentralized systems for remote areas.
Regulatory Delays	Streamlined regulatory processes and coordination for faster statutory clearances.
Lack of **Skilled Personnel**	The Nal Jal Mitra Programme to train local personnel in water supply management.
Inefficient Implementation	Establishment of State and District Programme Management Units (PMUs) to monitor progress.

FACTORS RESPONSIBLE FOR WATER SCARCITY IN INDIA:

1. **Climate Change:** Altered rainfall patterns and increasing frequency of droughts due to global warming affect water availability in many regions, particularly in arid and semi-arid areas.

2. **Over-extraction of Groundwater:** Over-reliance on groundwater for irrigation, drinking water, and industrial use has led to the depletion of aquifers in several parts of India, causing wells and borewells to dry up.

3. **Pollution:** Industrial and domestic waste contaminating rivers, lakes, and groundwater

6. **Water Management Issues:** Lack of proper water management and inefficient distribution networks result in wastage of water and unequal distribution across regions.

7. **Deforestation:** Deforestation and land degradation reduce the natural water retention capacity of the environment, leading to soil erosion, reduced groundwater recharge, and poor water retention in the ecosystem.

8. **Limited Water Storage Infrastructure:** Inadequate reservoirs, dams, and rainwater harvesting systems reduce the ability to store and manage water for future use, especially during dry seasons.

9. **Urbanization:** Rapid urban expansion increases the demand for water but often lacks proper planning and infrastructure for sustainable water supply and wastewater management.

WAYS TO ENSURE THE SUSTAINABILITY OF WATER SOURCES FOR EVERYONE:

1. **Promote Water Conservation:** Encourage water-saving practices like rainwater harvesting, reducing water wastage, and water-efficient appliances at homes, farms, and industries.
2. **Implement Efficient Irrigation Techniques:** Adopt drip irrigation, sprinkler systems, and crop selection suited to local water availability to reduce water usage in agriculture.
3. **Protect Natural Water Bodies:** Conserve rivers, lakes, and wetlands by preventing pollution and encroachment and implementing strict regulations to protect these vital water sources.
4. **Increase Groundwater Recharge:** Promote recharge pits, percolation tanks, and natural recharge systems to replenish groundwater levels and prevent over-extraction.
5. **Water Recycling and Reuse:** Encourage the reuse of wastewater for non-potable purposes (e.g., agriculture, landscaping) and establish systems for greywater recycling.
6. **Reduce Pollution:** Strengthen policies and enforcement on industrial effluent treatment, sewage management, and plastic waste reduction to prevent contamination of water sources.
7. **Restore Watersheds and Forests:** Protect and restore watershed areas and forests, which play a crucial role in maintaining the natural hydrological cycle and ensuring proper water flow.
8. **Public Awareness and Education:** Raise awareness about the importance of sustainable water use and conservation at the community level, through programs, campaigns, and educational initiatives.

CONCLUSION:

The Jal Jeevan Mission is a transformative initiative aimed at ensuring that every rural household in India has access to safe and reliable tap water by 2024. With significant progress already made, the mission is poised to improve the health, education, and socio-economic conditions of rural communities across the country while also promoting sustainable water management practices.

PRELIMS QUESTION:

1. With reference to the Ayushman Bharat Digital Mission (ABDM), consider the following statements:

1. The ABDM aims to create a nationwide digital health ecosystem by connecting healthcare providers and patients through unique health IDs.
2. ABDM provides for the integration of AI technologies to improve the quality of healthcare services and outcomes.
3. The mission aims to provide only online consultation services, excluding physical healthcare infrastructure improvements.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

2. With reference to the National Commission for Safai Karamcharis (NCSK), consider the following statement:

1. The National Commission for Safai Karamcharis (NCSK) is a statutory body.
2. The National Commission for Safai Karamcharis (NCSK) is mandated to take suo motto action.
3. The NCSK can Study and monitor working conditions, including health, safety, and wages of Safai Karamcharis employed under various agencies.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

3. With reference to the Jal Jeevan Mission, consider the following statements:

1. The mission aims to provide clean tap water to every rural household in India by 2024.
2. As of August 2024, the Jal Jeevan Mission has connected 11.82 crore rural households to tap water.
3. The mission exclusively focuses on urban areas to ensure reliable water supply.

How many of the above-given statements are correct?

A. Only one

B. Only two

C. All three

D. None

ANSWER

1. B	2. B	3. A

MAINS QUESTION:

1. India's digital healthcare transformation is reshaping accessibility, efficiency, and affordability in the sector. Critically analyze the key initiatives driving this change, their potential challenges, and the way forward for ensuring a sustainable and equitable digital healthcare ecosystem.

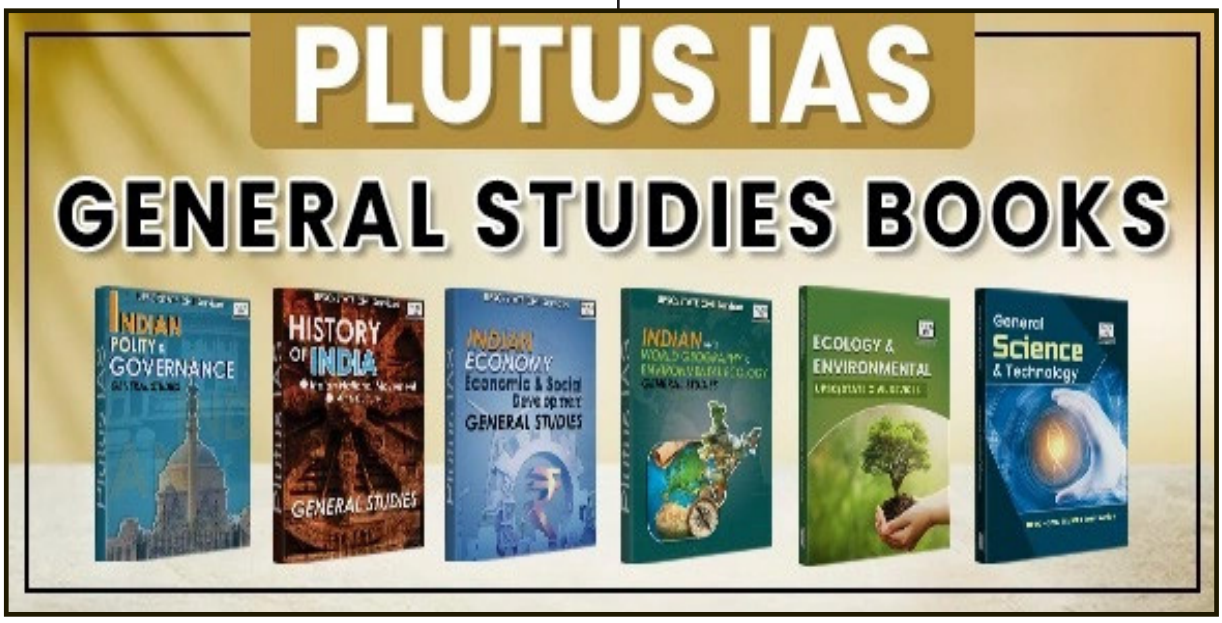
(250 words, 15 marks)

2. Despite various legal safeguards and government initiatives, Safai Karamcharis continue to face social and economic challenges. Critically analyse the role of the National Commission for Safai Karamcharis (NCSK) in addressing these issues. Suggest measures to enhance its effectiveness.

(Answer in 250 words)

3. Discuss the key components of the Jal Jeevan Mission and its potential impact on rural India.

(250 words, 15 marks)



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BEYOND THE HEADLINES: THE UNTOLD STORY OF SUBHAS CHANDRA BOSE'S FIGHT FOR FREEDOM

WHY IN THE NEWS?

The grand celebration of Parakram Diwas at Barabati Fort, Cuttack, marks the birth anniversary of the iconic freedom fighter Netaji Subhas Chandra Bose. The event, organized in his birthplace, celebrated Odisha's deep connection with Netaji and its role in shaping his early thoughts and ideals. A significant moment of the event was a Video message from Prime Minister Narendra Modi, who paid tribute to Netaji's unwavering dedication to India's independence struggle. The Prime Minister highlighted Netaji's perseverance and determination towards the vision of a free India, drawing attention to the Azad Hind Fauz as a symbol of unity in diversity.



WHAT IS PARAKARM DIWAS?

Parakram Diwas (also known as Netaji Jayanti) is a national observance in India that celebrates the birth anniversary of Netaji Subhas Chandra Bose on 23 January. The day is dedicated to honouring his immense contributions to India's struggle for independence. The name Parakram Diwas translates to the Day of Valor, highlighting Netaji's bravery, leadership, and unwavering commitment to the cause of Indian independence. Bose is especially remembered for his role as the leader of the Indian National Army (INA), which fought against British colonial rule, and for founding the Azad Hind Government. The day was officially recognized as Parakram Diwas in 2021, marking his 124th birth anniversary, and it is celebrated annually with various events across India, especially in states like West Bengal, Odisha, Assam, Jharkhand, and Tripura. While it is celebrated with patriotic fervour, the naming of the day as Parakram Diwas has sparked some controversy, with certain political leaders and Netaji's family members calling for the day to be renamed as Deshprem Divas (Day of Patriotism) or Deshanayak Divas (Day of National Hero).



SUBHAS CHANDRA BOSE:

1. **Early Life and Background:**
   Birth and Family: Subhas Chandra Bose was born on 23 January 1897 in Cuttack, Odisha, into a well-off Bengali family. His father, Janakinath Bose, was a prominent lawyer, and his mother, Prabhavati Devi, was deeply religious and nurturing.
   Education: Bose was an exceptional student, excelling in academics from an early age. He completed his early education in Cuttack and later attended Presidency College in Kolkata. His academic brilliance earned him a spot at Cambridge University in England, where he graduated with a degree in B.A. (Honours) in Philosophy. He also cleared the Indian Civil Services (ICS) exam, which was seen as a prestigious career path.
   Cultural Influence: Growing up in the culturally rich environment of Bengal, Bose was inspired by the Bengal Renaissance and deeply influenced by the nationalist movements of the time. His admiration for the freedom struggle grew through the teachings of leaders like Swami Vivekananda and Bankim Chandra Chattopadhyay.

2. **Subhas Chandra Bose's Contribution to India's Freedom:**
   Involvement with the Indian National Congress: Subhas Chandra Bose initially aligned with the Indian National Congress (INC), led by Mahatma Gandhi. However, Bose was more radical in his approach compared to Gandhi's philosophy of non-violence. Bose firmly believed that India's independence could only be achieved through a more aggressive, militant strategy.
   Disagreement with Gandhi and INC Leadership: As Bose's views on achieving independence clashed with Gandhi and the INC leadership, he formed his own faction within the Congress, advocating for the complete independence of India (Purna Swaraj) and the use of force if necessary.
   Electoral Success: In 1938, Bose was elected the President of the Indian National Congress, but his differences with Gandhi and the Congress leadership led to his resignation in 1939. He believed that the Congress was not doing enough to push for India's freedom.
   The Azad Hind Movement: Bose's ultimate goal was India's independence through armed struggle. His legacy in the freedom movement is most strongly tied to the formation of the Azad Hind Fauj (Indian National Army) and his leadership of the Azad Hind Government during World War II.

3. **Subhas Chandra Bose and the Indian National Army (INA):**
   Formation of INA: Bose's leadership of the Indian National Army (INA) stands as one of his most significant contributions to the Indian freedom struggle. During his time in Southeast Asia, Bose sought help from Nazi Germany and Imperial Japan to form the INA, comprising Indian prisoners of war and expatriates.
   INA's Role in the War: The INA fought alongside the Japanese against British forces in India and Southeast Asia. Though the INA ultimately did not succeed in liberating India, its efforts played a crucial role in inspiring a sense of nationalism and military resistance against British rule.
   INA's Symbolism: The INA became a symbol of unity and courage in the face of adversity, and its efforts directly influenced the post-war independence movement. Netaji's famous slogan, "Give me blood, and I will give you freedom," inspired many to join the cause.

4. **Subhas Chandra Bose and the Forward Bloc:**
   Formation of the Forward Bloc: In 1939, after his resignation from the INC, Subhas Chandra Bose formed the Forward Bloc, a left-wing political group within the Indian National Congress. This group aimed to unite all anti-colonial forces and push for immediate and total independence.
   The Role of the Forward Bloc: While the Forward Bloc initially struggled to gain widespread support, it became an important platform for Bose to mobilize the masses and promote a more militant form of resistance against British colonial rule. The organization also focused on working-class issues, which Bose believed were crucial for building a strong national movement.

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Ideological Differences: The Forward Bloc was ideologically distinct from the main Congress party. Bose's vision for India's future included strong central governance, industrialization, and a more assertive foreign policy, in contrast to the moderate approach favoured by leaders like Gandhi and Nehru.

5. **Subhas Chandra Bose's Activities Abroad:**
   Journey to Germany and Japan: After being placed under house arrest by the British authorities, Bose escaped India in 1941 and travelled to Germany and Japan to seek support for India's independence. He believed that the Axis powers, despite their problematic ideologies, could help India fight British imperialism
   Collaboration with Axis Powers: In Germany, Bose formed ties with Nazi officials, including Adolf Hitler, and later moved to Japan, where he secured military support for his vision of an independent India. While he did not fully endorse Nazi ideologies, he believed that the Axis powers could help weaken British rule in India.
   Role in the Indian National Army (INA): In Japan, Bose took charge of the INA, which fought against British forces in Burma and parts of India. He also established the Azad Hind Government, which declared war on Britain and Japan's allies.
   Mysterious Disappearance: Bose's efforts came to a sudden halt after Japan's defeat in World War II. In 1945, he is believed to have died in a plane crash in Taiwan, though this has been the Subject of much speculation and controversy. Many still believe that Bose may have survived and spent his final years in secrecy.

OVERALL IMPACT OF SUBHAS CHANDRA BOSE'S IDEOLOGY IN POST-INDEPENDENCE INDIA:

1. **Nationalism and Patriotism:** Subhas Chandra Bose's unwavering commitment to India's independence and his call for complete independence (Purna Swaraj) inspired generations of Indians. His iconic slogan, "Give me blood, and I will give you freedom," symbolizes courage and unity in the fight for freedom.
2. **Legacy of the Indian National Army (INA):** The Indian National Army (INA), led by Bose, became a symbol of militant nationalism. Though it did not lead to immediate independence, it sparked a spirit of resistance against British rule, complementing other independence efforts.
3 **Rejection of Non-Violence**: Bose's militant approach to India's freedom struggle, emphasizing self-reliance and strength, contrasted with Gandhi's non-violence but contributed to a multifaceted independence movement, highlighting the role of assertive nationalism.
4. **Influence on Post-Independence Politics:** Bose's vision for a strong, centralized India shaped post-independence policy on defence, security, and industrialization, leaving a lasting impact on India's nation-building and development.
5. **Inspiration for Post-Independence Leaders:** Bose's ideology of strong governance and national unity inspired radical and left-wing political leaders, especially in West Bengal, influencing their approach to consolidating India's democracy and addressing regional divisions.
6. **Symbol of Unity in Diversity:** Bose's leadership of the INA, which included diverse linguistic, cultural, and religious groups, epitomized his belief in unity in diversity, a core value in India's national identity.
7. **Continued Debate on His Disappearance:** The mystery of Bose's disappearance after World War II continues to spark debates. Many believe he may have survived and secretly worked for India's cause, keeping his legacy alive through ongoing research and public interest.
8. **Promoting National Resilience:** Bose's life, marked by sacrifices and setbacks, exemplified resilience and determination. His persistence in the face of adversity serves as a motivation for overcoming challenges in nation-building and pursuing the greater good of India.

CONCLUSION:

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Subhas Chandra Bose's impact on post-independence India is profound. His contributions transcend mere political actions; they embody the spirit of resistance, freedom, and sacrifice. Bose's ideology continues to shape India's national identity, political thinking, and the moral fibre of the country's struggle for justice, making him an enduring figure in Indian history. His call for complete independence, his leadership of the Indian National Army, and his efforts to strengthen India's sovereignty continue to inspire political discourse and are integral to understanding India's historical and modern identity.

RAVIDAS: THE MYSTIC POET-SAINT OF THE BHAKTI MOVEMENT

WHY IN THE NEWS?

The birth anniversary of Bhagat Ravidas, a prominent poet-saint of the Bhakti movement, was celebrated with religious fervour. The Shiromani Gurdwara Parbandhak Committee (SGPC) organised special events to honour his contributions to spirituality and social reform. His teachings on equality, devotion, and social harmony continue to inspire millions across the Indian subcontinent.



SAINT RAVIDAS

Ravidas, also known as Raidas, was a revered Indian mystic poet-saint of the Bhakti movement during the 15th to 16th century CE. Venerated as a guru in multiple regions, including Uttar Pradesh, Bihar, Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Punjab, and Haryana, he was a poet, social reformer, and spiritual figure. His teachings emphasised the removal of caste and gender divisions and promoted unity in spiritual pursuit.

LIFE AND TEACHINGS:

- Ravidas was born in Sir Gobardhanpur, near Varanasi, in present-day Uttar Pradesh. His birthplace is now known as Shri Guru Ravidass Janam Asthan.
- His mother was Mata Kalsi, and his father was Santokh Dass, belonging to a leather-working Chamar community.
- Originally engaged in leatherwork, he later devoted himself to spiritual pursuits, spending time with Sufi saints, sadhus, and ascetics.
- Married to Lona Devi, Ravidas had a son, Vijay Dass.
- His teachings emphasized the idea of a formless divine (nirguna bhakti), rejected idol worship, and promoted equality.

LITERARY WORKS:

- The Adi Granth and the Panchvani of the Hindu warrior-ascetic group Dadupanthi are the two oldest attested sources of Ravidas's literary works.
- The Adi Granth includes 41 of Ravidas's poems, making him one of thirty-six contributors to this foremost canonical scripture of Sikhism.
- His poetry addresses issues such as social justice, the nature of a just state, dispassion, and the true essence of a yogi.
- Some poems attributed to Ravidas were likely composed by later poets as acts of reverence, reflecting the broader Bhakti tradition.

PHILOSOPHY OF SAINT RAVIDAS:

- Ravidas' hagiographies illustrate his struggle against rigid social structures and orthodox Brahminical traditions.
- His teachings emphasise equality, unity, and devotion beyond caste and religious divisions.
- His poetry and legends often depict a challenge to both Hindu and Islamic authorities of his time.

- Many miracles are attributed to him, such as making a stone float on water and reversing the flow of the Ganges, symbolising divine intervention in his spiritual journey.
- Scholars note that poetry attributed to Ravidas from the 17th to the 20th century carries a strong anti-Brahminical and anti-communal theme, reflecting the socio-political struggles of marginalised groups under Islamic and colonial rule.

CONTRIBUTION TO THE BHAKTI MOVEMENT:

- Ravidas played a crucial role in shaping the Bhakti movement, emphasising devotion (bhakti) as the path to salvation.
- He rejected caste-based discrimination and advocated for spiritual equality.
- His teachings focused on a formless divine (nirguna bhakti), similar to other Bhakti saints like Kabir and Nanak.
- He composed devotional hymns that spread the message of love, compassion, and unity.
- His spiritual influence attracted followers across different social and religious backgrounds.
- He emphasised ethical living and selfless service as the true essence of devotion.
- His Concept of Begumpura (a city without sorrow) envisioned an ideal society free from social hierarchies and injustice.
- Ravidas' teachings were included in Sikh scripture, influencing Sikhism and other religious traditions.

SPIRITUAL AND SOCIAL IMPACT:

- He was traditionally considered a disciple of Ramananda and a contemporary of Kabir.
- Ravidas' fame grew, and even Brahmins revered him for his spiritual wisdom.
- He travelled extensively across India, visiting pilgrimage sites and spreading his teachings.
- He played a crucial role in social reform, advocating for an egalitarian society free from caste-based discrimination.
- The Ravidassia religious movement considers him a central figure, continuing his legacy.

THE CONCEPT OF BEGUMPURA:

The Concept of Begumpura was proposed by Sant Ravidas, a prominent Bhakti saint. Through his poetry, he envisioned Begumpura as a utopian city free from suffering, sorrow, and social discrimination. In his couplets, he described it as a land of equality and bliss, where no one experiences pain or injustice: "Begampura sahar ko naao, dukhu-andoohu nahi tahi thaao" (Translation: "Begumpura is the name of the city, where there is no suffering or sorrow.") This idea reflected Ravidas' vision of a casteless and oppression-free society, aligning with his broader teachings on social equality and spiritual liberation.

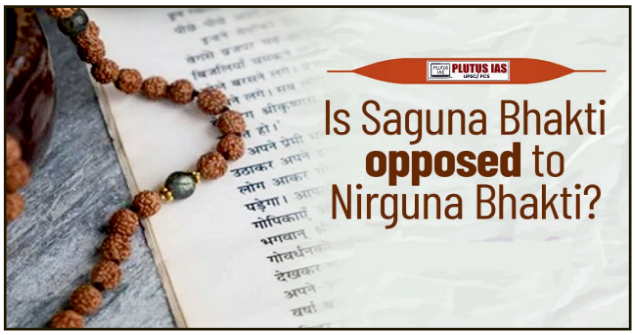
LEGACY:

- Ravidas is revered as a saint and a religious reformer who stood against social injustice.
- The Ravidassia religion emerged as a distinct religious movement in the 21st century, focusing exclusively on the teachings of Ravidas.
- Ravidassias give utmost respect to Guru Granth Sahib but consider Guru Ravidas as their supreme spiritual guide.
- The Amritbani Guru Ravidass Ji, a holy scripture compiled by Ravidassia followers, contains 240 hymns based solely on Ravidas' teachings.
- The movement gained momentum after the 2009 attack on a Ravidassia temple in Vienna, leading to its formal separation from Sikhism.
- Niranjan Dass is the head of Dera Sachkhand Ballan, an important spiritual center for Ravidassias.
- The movement reflects the aspiration of marginalised communities, particularly the Chamars, to establish their independent religious identity.
- Notable places of worship include Guru Ravidass temples in Bedford (UK), Nasinu (Fiji), Birmingham (UK), and Pittsburg (California, USA).
- Kathryn Lum notes that Ravidassia followers emphasise self-identity and independence, aiming for social upliftment beyond Sikhism.

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CONCLUSION:

avidas' life and works significantly impacted the Bhakti movement, inspiring devotion beyond social barriers. His emphasis on equality, devotion, and inner spirituality continues to resonate in various religious traditions today. His poetry and teachings remain a guiding force for those seeking spiritual enlightenment and social harmony.



COMPARISON BETWEEN SAGUNA BHAKTI AND NIRGUNA BHAKTI

Features	Saguna Bhakti	Nirguna Bhakti
Origin	Emerged as a response to the need for personal devotion to deities with attributes	Developed as a movement emphasizing formless devotion and inner spirituality
Key Features	Worship of a deity with form (e.g., Vishnu, Shiva, Devi, Krishna, Rama)	Devotion to a formless, attributeless divine (Brahman)
Regions	More prevalent in North and South India (e.g., Tamil Nadu, Karnataka, Maharashtra)	Spread across North India, especially in Uttar Pradesh, Punjab, and Rajasthan
Spiritual Leaders	Prominent leaders include Ramanuja, Tulsidas, Mirabai, Surdas, and Chaitanya Mahaprabhu.	Leaders include Kabir, Ravidas, Nanak, Dadu Dayal, and Sant Eknath
Scriptural Basis	Relies on epics like Ramayana, Bhagavata Purana, and Puranic texts	Rooted in Upanishads, Sufi influences, and Sant poetry
Mode of Worship	Idol worship, temple rituals, bhajans, and kirtans	Meditation, naam-simran (chanting), inner realization, and simple devotion
View on Caste and Social Hierarchy	Some sects followed caste distinctions; however, Bhakti saints tried to soften rigid caste divisions.	Strongly opposed casteism, ritualism, and priestly authority
Philosophical Influence	Based on Advaita (non-dualism), Vishishtadvaita (qualified non-dualism), and Dvaita (dualism) philosophies	Strongly influenced by Nirguna Brahman concept from Vedanta and Sufism
Gender Inclusivity	Prominent female saints like Mirabai contributed, but temple access remained restricted for many lower castes and women.	More inclusive, with women and lower-caste individuals gaining recognition as spiritual seekers
Impact on Society	Strengthened traditional Hinduism, encouraged devotional practices, and popularized bhakti through temple culture	Advocated social reforms, caste, and religious harmony, and challenged rigid Brahmanical traditions
Concept of Liberation (Moksha)	Liberation through devotion (bhakti) and grace of the deity	Liberation through self-realization and merging with the formless divine

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SWAMI RAMAKRISHNA PARAMHANSA

WHY IN THE NEWS?

Prime Minister Narendra Modi recently paid tribute to Sri Ramakrishna Paramhansa on his birth anniversary, acknowledging the profound influence the mystic and spiritual leader had on both his life and the nation. In a heartfelt message on social media, PM Modi expressed his reverence for the saint, emphasizing his deep spiritual connection with Maa Kali and the powerful impact of his teachings on figures like Swami Vivekananda. Sri Ramakrishna, born in 1836 into a humble background, remains a key figure in India's spiritual history, with his teachings on the unity of religions and devotion continuing to inspire millions globally.



SWAMI RAMAKRISHNA PARAMHANSA:

1. **Birth and Family:** Swami Ramakrishna was born Gadadhar Chattopadhyay on February 18, 1836, in Kamarpukur, Bengal, to a poor Brahmin family with strong religious values.
2. **Early Spiritual Experiences:** From a young age, he showed deep spirituality, having mystical visions, especially of Maa Kali, which guided his devotion.
3. **Limited Education:** Despite little formal education, Ramakrishna focused on spiritual practices, meditation, and religious rituals rather than academics.
4. **Marriage:** At 23, he married Saradamani Devi, whom he regarded as a divine companion, continuing his spiritual quest without interruption.
5. **Spiritual Path:** Ramakrishna explored various spiritual paths, believing that all religions lead to the same divine truth, which became a central teaching in his life.

PARAMHANSA'S AND RAMAKRISHNA MISSION:

1. **Swami Ramakrishna Paramhansa:** A mystic and spiritual leader, he emphasized the unity of all religions and the importance of direct spiritual experience, particularly devotion to Maa Kali.
2. **Influence on Swami Vivekananda:** His teachings deeply inspired Swami Vivekananda, who later founded the Ramakrishna Mission.
3. **Ramakrishna Mission:** Established in 1897 by Vivekananda, it focuses on spreading Ramakrishna's teachings of religious harmony, selfless service, and spiritual growth. The mission also engages in social welfare, education, and healthcare.
4. **Global Impact:** The Ramakrishna Mission has centres worldwide, continuing its work of promoting spirituality, service, and religious unity.

PARAMHANSA'S SOCIAL REFORM:

1. **Paramahamsa's Social Reform:** Ramakrishna Paramahamsa challenged caste barriers, promoted women's rights, and advocated for social service.
2. **Paramahamsa Mandali:** Organized gatherings where people of different castes could eat together, breaking down caste divisions.
3. **Ramakrishna Movement:** Based on Ramakrishna's belief in the unity of all religions, it spread Vedanta and emphasized spiritual unity, charitable work, and service to humanity.
4. **Ramakrishna Mission:** Founded by Swami Vivekananda in 1897, it focused on social service, including disaster relief, hospitals, and educational institutions.
5. **Teachings of Ramakrishna:** Emphasized religious unity, the idea that serving humanity is serving God and that there are many paths to the Divine.

PARAMHANSA'S IDEAS AND PHILOSOPHY:

1. **Unity of Religions:** Ramakrishna believed all religions lead to the same truth. He often said, "As many faiths, so many paths," emphasizing that all forms of worship are valid expressions of the Divine.
2. **Divinity of Humanity:** He saw every person as a manifestation of God and believed that realizing the Divine in others is key to spiritual growth. This encouraged an attitude of respect, love, and equality toward all people.
3. **Selfless Service:** Service to humanity was considered the highest form of devotion. For Ramakrishna, helping others was synonymous with serving God, and this formed a core element of his spiritual practice.
4. **Personal Spiritual Experience:** Ramakrishna encouraged a personal, experiential approach to spirituality. He practised and recommended deep devotion (bhakti), meditation (dhyana), and other practices to experience God's presence directly.
5. **Multiple Paths to God:** He believed there are many legitimate paths to spiritual enlightenment, whether through love (bhakti), knowledge (jnana), or meditation (dhyana), advocating that everyone should find their personal path to the Divine.
6. **Transcendence of Ego:** Ramakrishna emphasized the importance of renouncing the ego. He believed that self-realization could only occur when a person transcends their individual self-centeredness and surrenders to the Divine will.
7. **Mystical Vision:** He had profound mystical experiences and encouraged others to seek direct communion with God through intense spiritual practice, making mysticism a central feature of his teachings.
8. **Embrace of Simplicity:** Ramakrishna led a life of simplicity and austerity, focusing on the essential spiritual truths. He believed true happiness comes not from material wealth but from inner peace and spiritual realization.

PARAMHANSA'S CONTRIBUTION TO THE EARLY FREEDOM MOVEMENT:

1. **Spiritual Inspiration:** Ramakrishna's teachings helped foster a sense of national pride and spiritual awakening, encouraging Indians to reconnect with their cultural and religious roots, which was crucial in resisting British colonialism.
2. **Promoting Unity:** By emphasizing the unity of all religions, Ramakrishna helped reduce religious divisions and encouraged national unity, which became vital for the collective struggle for independence.
3. **Influence on Swami Vivekananda:** Ramakrishna's teachings profoundly shaped Swami Vivekananda, who combined spirituality with nationalism, motivating and inspiring many leaders and freedom fighters.
4. **Empowering Marginalized Groups:** Ramakrishna advocated for equality and social justice, challenging caste divisions and supporting the upliftment of women and the oppressed, aligning with the social reform movements that were part of the freedom struggle.
5. **Emphasis on Self-Reliance:** His philosophy of self-reliance and inner strength inspired many to work toward the betterment of India, laying the groundwork for a self-sufficient, free nation.

PARAMAHANSA AND SWAMI VIVEKANANDA:

1. **Guru-Disciple Bond:** Ramakrishna was the spiritual mentor of Vivekananda, profoundly shaping his philosophy and mission.
2. **Philosophical Influence:** Ramakrishna's belief in the unity of all religions influenced Vivekananda's vision of religious tolerance and spiritual inclusivity.
3. **Global Representation:** Vivekananda took Ramakrishna's teachings worldwide, especially at the 1893 Chicago Parliament of Religions, promoting Vedanta and India's spiritual heritage.
4. **Social Reform:** While Ramakrishna focused on spiritual awakening, Vivekananda combined it with social reform, advocating for women's rights, education, and the removal of caste discrimination.

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5. **Legacy of Strength:** Ramakrishna taught Vivekananda that true strength comes from within. Vivekananda emphasized self-reliance and inner strength in both personal and national development.
6. **Nation-Building:** Vivekananda expanded Ramakrishna's idea of the divine in all people into a call for India's spiritual and national revival.

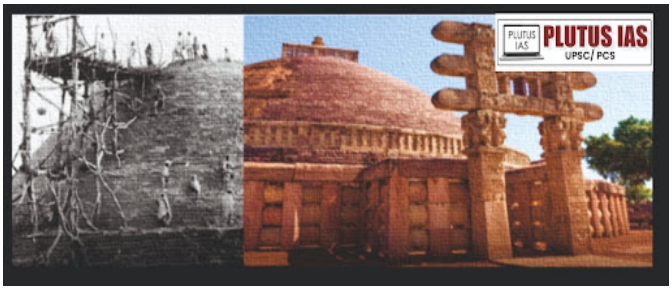
CONCLUSION

Sri Ramakrishna Paramhansa's teachings on religious unity, devotion, and selfless service have left a lasting impact on India's spiritual and national identity. His influence on Swami Vivekananda helped combine spirituality with nationalism, inspiring the freedom movement. The Ramakrishna Mission, founded by Vivekananda, continues to promote service, education, and religious harmony worldwide. Ramakrishna's advocacy for social reform, including caste equality and women's rights, contributed to India's social awakening. His emphasis on self-reliance and the divine nature of all people laid the groundwork for a unified and independent India.

CONSERVING THE NATIONAL HERITAGE: SAFEGUARDING INDIA'S ANCIENT WONDERS

WHY IN THE NEWS?

Due to climate change and extreme weather events, India's cultural and archaeological heritage is under severe threat. According to UNESCO reports, rising sea levels are endangering coastal heritage sites, while heat waves and heavy rainfall are accelerating the decay of historical monuments. With the 2025 Kumbh Mela approaching and increased government funding for conservation, protecting India's heritage has become a national priority, demanding urgent action.



THE RICH HISTORY OF INDIAN CULTURE IN ARCHITECTURE

1. **Indus Valley Civilization (2500 BCE - 1900 BCE):** The cities of Harappa and Mohenjo-Daro exhibit advanced urban planning, drainage systems, and grid-based street designs.
2. **Buddhist Architecture:** The stupas at Sanchi and the rock-cut caves at Ajanta and Ellora exemplify early Indian craftsmanship and religious devotion.
3. **Hindu Temple Architecture:** Temples such as the Brihadeshwara Temple in Tamil Nadu and the Sun Temple at Konark showcase intricate carvings, massive gopurams, and sacred symbolism.
4. **Mughal Architecture:** The Taj Mahal, Red Fort, and Fatehpur Sikri reflect Persian influences and artistic excellence.
5. **Colonial and Modern Architecture:** The Victoria Memorial, Gateway of India, and Rashtrapati Bhavan blend Indian and European styles, symbolizing India's colonial and post-independence identity.

   Examples of Architectural Wonders Across India

   Taj Mahal (Uttar Pradesh): A symbol of love and architectural brilliance.

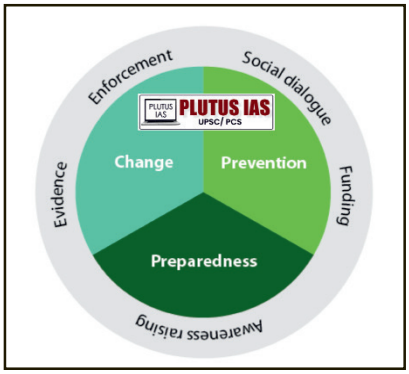
   Hampi (Karnataka): The capital of the Vijayanagar Empire with stunning temple ruins.

   Khajuraho Temples (Madhya Pradesh): Known for their intricate sculptures and depictions of human expressions.

GOVERNMENT MEASURES TO PROTECT INDIA S RICH HERITAGE:

LEGISLATIVE FRAMEWORK :

1. The Ancient Monuments and Archaeological Sites and Remains (AMASR) Act, 1958, protects monuments from encroachments.
2. The National Policy on Monuments, Antiquities, and Archaeological Sites guides conservation efforts.



GOVERNMENT INITIATIVES

Scheme	Date of Inauguration	Ministry	Features
Adopt a Heritage 2.0	2024	Ministry of Tourism & Ministry of Culture	Corporate involvement in the conservation of lesser-known monuments.
PRASAD (Pilgrimage Rejuvenation and Spiritual Augmentation Drive)	2014	Ministry of Tourism	Develops infrastructure and facilities at pilgrimage sites to enhance heritage tourism.ss
Swachh Iconic Places (SIP) Initiative	2016	Ministry of Housing and Urban Affairs	Targets cleanliness and preservation of heritage sites like Taj Mahal, Ajanta Caves, and Golden Temple.
Mausam Project	2014	Ministry of Culture	Focuses on maritime heritage conservation along India's coastal regions, such as historic trade routes in Lothal, Gujarat.
Vibrant Villages Programme	2023	Ministry of Home Affairs	Enhances conservation and promotion of cultural heritage in border villages to boost tourism and local economy.
National Cultural Audiovisual Archives (NCAA)	2014	Ministry of Culture	Digitally archives India's rich cultural and architectural heritage for future generations.s
Adopt a Heritage Scheme	2017	Ministry of Tourism	Private companies adopt heritage sites for maintenance and promotion; 25 monuments adopted as per PIB 2024.
HRIDAY (Heritage City Development and Augmentation Yojana)	2015	Ministry of Housing and Urban Affairs	Focuses on urban heritage conservation with ₹500 crore allocated for development.
National Mission on Monuments and Antiquities (NMMA)	2007	Ministry of Culture	Over 3 lakh antiquities digitized for documentation.
UNESCO Collaboration	Ongoing	Ministry of Culture & UNESCO	India partners with UNESCO for site preservation and cultural awareness programs, with $10 million allocated for 2024.



SIGNIFICANCE OF INDIA'S ARCHITECTURAL HERITAGE:

1. **Cultural Identity:** Architectural sites connect citizens with India's historical legacy. For example, the ruins of Nalanda University represent India's ancient knowledge traditions and Buddhist heritage. As per the PIB report (2024), Nalanda has been included in India's priority list for UNESCO heritage conservation projects.

2. **Tourism and Economy:** Heritage tourism contributes nearly 2.1% of India's GDP, generating employment for 87 lakh people. The PIB (2024) highlights that the Taj Mahal alone attracted 7 million visitors last year, significantly boosting the local economy in Agra.

3. **Educational Value:** Structures serve as living classrooms for students and historians. The Rashtrapati Bhavan and Parliament House are examples of where modern governance meets historical architecture. The 2024 ASI report emphasizes the role of digital archives in making historical knowledge more accessible to students nationwide.s

4. **Spiritual and Artistic Value:** Temples, mosques, and churches represent India's religious harmony and artistic excellence. The Golden Temple in Amritsar is a significant religious and architectural marvel, attracting millions of devotees each year. The Culture Ministry (2024) has allocated ₹500 crore for the restoration of religious heritage sites across India.

ISSUES CONCERNED WITH THE PRESERVATION OF INDIAN ARCHITECTURE

1. **Urbanization and Encroachment:** Rapid expansion of cities threatens historical sites with illegal constructions.
2. **Pollution and Climate Change:** Acid rain, pollution, and temperature fluctuations damage structures like the Taj Mahal.
3. **Neglect and Lack of Funds:** Insufficient government funding leads to poor maintenance of lesser-known monuments.
4. **Theft and Smuggling of Artifacts:** Illegal trade in antiquities leads to the loss of cultural treasures.
5 **Unregulated Tourism:** High footfall at sites like Hampi and Ajanta caves leads to wear and tear of ancient carvings.

WAYS TO PRESERVE INDIA'SS RICH ARCHITECTURE

1. **Community Participation:** Local communities should be involved in preservation efforts through awareness programs. For example, the "Adopt a Heritage" initiative encourages local businesses and individuals to contribute to the upkeep of historical sites.
2. **Sustainable Tourism Practices:** Limiting visitor numbers and using eco-friendly restoration techniques. The Taj Mahal now restricts daily visitors to 40,000 to prevent damage, as per the latest PIB report (2024).
3. **Technology Integration:** Use of 3D mapping, AI, and laser scanning to digitally preserve structures. The ASI (2024) has mapped 500 monuments digitally to assist in long-term conservation.
4. **Strengthening Laws:** Enhancing penalties for encroachment and illicit trade in antiquities. The UNESCO Convention on the Means of Prohibiting and Preventing Illicit Import,

Export, and Transfer of Cultural Property (1970) supports India's efforts in protecting artefacts.

5. **Corporate and NGO Partnerships:** Collaboration with private organizations for funding and expertise. The "Adopt a Heritage 2.0" program has led to 25 major monuments being supported by corporate sponsors.



CONCLUSION

Preserving India's architectural heritage is not just a duty but a necessity to maintain the country's cultural identity and economic strength. Government policies, community participation, and technological advancements can play a significant role in safeguarding these wonders. India's historical structures are a testament to its glorious past, and proactive efforts must be taken to ensure that they continue to inspire future generations.

PRELIMS QUESTIONS:

1. Which of the following statements are correct about Parakram Diwas?

1. Parakram Diwas is celebrated annually on 23 January to mark the birth anniversary of Subhas Chandra Bose.
2. Parakram Diwas was officially recognized in 2020 as a national observance in India.
3. The day is celebrated with patriotic fervour across India, especially in states like West Bengal, Odisha, and Assam.

Select the correct answer using the code given below:

A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

2. Which Bhakti saint proposed the Concept of "Begumpura"?

A. Kabir
B. Ravidas
C. Mirabai
D. Tulsidas

3. With reference to Sri Ramakrishna Paramhansa, consider the following statements:

1. Sri Ramakrishna was born in Bengal in 1836.
2. He believed in the equality of all religions.
3. He advocated for women's education and widow remarriage.

How many of the above-given statements are correct?

A. Only one
B. Only two
C. All three
D. None

4. Which of the following initiatives is aimed at urban heritage conservation in India?

A. HRIDAY
B. PM Awas Yojana
C. Start-Up India
D. Digital India

ANSWER

1. C	2. B	3. C	4. A

Mains Questions:

1. Discuss the contributions of Subhas Chandra Bose to India's freedom struggle and how his legacy continues to influence the nation's political and social fabric.

(250 words, 15 marks)

2. Compare and Contrast t the Saguna Bhakit and Nirguna Bhakti and their profound impact on medieval social life.

(Answer in 150 words)

3. Discuss the philosophical teachings of Sri Ramakrishna Paramhansa and their influence on India's spiritual and social movements.

(250 words, 15 marks)

4. Discuss the significance of architectural heritage in India and suggest measures to ensure its effective conservation in the face of modern challenges.?

(250 words, 15 marks)



PRELIMS BITs

"PRELIMS BITS: WETLAND CITY ACCREDITATION (WCA): INDORE AND UDAIPUR"

WHY IN THE NEWS?

Prime Minister Narendra Modi recently praised Indore and Udaipur for their recognition under the Wetland City Accreditation (WCA) system. Indore, known for its consistent performance as India's cleanest city in the Swachh Survekshan rankings, has significantly advanced urban development and smart city initiatives. Meanwhile, Udaipur has been recognized for its efforts in heritage conservation, sustainable tourism, and urban beautification. These cities continue to set governance, cleanliness, and innovation benchmarks, serving as role models for urban development across the country.



WETLAND CITY ACCREDITATION (WCA)

ORIGIN OF THE WCA SYSTEM:

Nature: Voluntary accreditation system recognizing cities that value and conserve wetlands.
Approval: Adopted at COP12 of Ramsar Convention (2015) in Uruguay.
Validity: 6 years, renewable if the city meets specific criteria.

CRITERIA FOR RECOGNITION

- Demonstrated conservation efforts for urban and peri-urban wetlands.
- Integration of wetlands in urban planning and sustainable development.
- Awareness campaigns to engage and educate citizens on wetland values.
- Policies for wise use of wetland resources.
- Monitoring and management to ensure wetland health.
- Socio-economic benefits for local communities derived from wetlands.

SIGNIFICANCE OF WCA

- Promotes conservation and wise use of urban/ peri-urban wetlands.
- Ensures sustainable socio-economic benefits for local populations.
- Encourages positive relationships between cities and Wetlands of International Importance.
- Supports the Amrit Dharohar Initiative of MoEF&CC.

WETLANDS IN INDORE

SIRPUR LAKE: KEY FACTS

Basics:

Location: Situated on Indore-Dhar Road, Indore, Madhya Pradesh.
Ramsar Site Designation: Declared a Ramsar site under the Ramsar Convention on 07 January 2022.
IBA Status (Important Bird Area): Designated as one of 19 Important Bird Areas (IBAs) of Madhya Pradesh by BirdLife International in 2015.

Nature and Characteristics

- **Type:** Human-made wetlands stabilized and acquired near-natural characteristics over two centuries.
- CommonlyknownasPakshiVihar(BirdSanctuary). Lake Features: Shallow, alkaline, and nutrient-rich.
- Maximum depth: 2 meters during the monsoon season.

Biodiversity:

- **Plant and Animal Life:** 175 terrestrial plant species, 6 macrophytes, 30 fish species (natural and cultured), 8 reptiles and amphibian species.
- **Birdlife:** The area supports 130 bird species (residents and migrants), including threatened species such as the common pochard (Aythya ferina), the Egyptian vulture (Neophron percnopterus), and the Indian river tern (Sterna aurantia).

Significance for Communities

- Fisheries.
- Medicinal plants.
- Buffer against flooding.
- Regulation of the local microclimate.
- Offers benefits like spiritual enrichment, recreation, and education for local communities.

INDIAN RIVER TERN: KEY FACTS

Aspect	Details
Scientific Name	Sterna aurantia
Family	Laridae
Habitat	Inland rivers, freshwater lakes, tanks; rarely in tidal creeks or coasts.
Distribution	From Iran to the Indian Subcontinent, Myanmar, and Thailand.
Size	Medium-sized, 38–43 cm long.
Physical Description	– **Breeding Plumage**: Dark grey upperparts, white underparts, black cap, yellow bill, red legs. – **Non-Breeding Plumage**: Greyish-white cap with black streaks, dark mask, dusky bill tip. – **Juveniles**: Brown head, grey upperparts with brown markings, white underparts, yellowish bill with dark tip.
Tail	Forked with long, flexible streamers.
Wings	Long and pointed.
Breeding Season	March to May.
Nesting	– Ground scrape on sandbanks, bare rock, or sand. – Lays 3 greenish-grey to buff eggs with brown blotches and streaks.
Feeding Habits	– Diet: Fish, crustaceans, tadpoles, aquatic insects. – Hunting: Plunge dives into water.
Unique Traits	Exclusively found in freshwater habitats, unlike most Sterna terns.
Conservation Status	Population declines due to habitat pollution and degradation.

WETLANDS IN UDAIPUR:

Lake	Highlights	Ecological Importance	Cultural/Recreational Significance
Lake Pichola	– Known for stunning views, especially at sunset.	– Supports a diverse aquatic ecosystem.	– Home to iconic palaces like Jag Mandir and Lake Palace.
Lake Fateh Sagar	– A larger, man-made lake surrounded by Aravalli hills. – Contains Nehru Park and a solar observatory.	– Major source of drinking water for Udaipur.	– Popular boating destination with panoramic views.
Lake Rang Sagar	– Calm waters with scenic sunrise and sunset views.	– Supports birdlife and aquatic species.	– A peaceful retreat surrounded by hills.
Lake Swaroop Sagar	– Smaller, tranquil lake often overlooked by tourists.	– Supports diverse flora and fauna.	– Offers insight into local life, surrounded by neighborhoods.
Lake Doodh Talai	– Primarily used as a water reservoir.	– Supports birdlife, including migratory species.	– Offers scenic greenery, a peaceful atmosphere, and recreational opportunities.

PRELIMS QUESTIONS:

1. **With reference to the Indian River Tern, Consider the following statement:**
2. **Indian River Tern is a type of fish**
3. **Indian River Tern almost found in the freshwater lakes**
4. **Indian River Tern is aligned with the summer season in India**
5. **Indian River Tern is under the critically endangered category of the IUCN.**

How many of the above-given statements are correct?

A. Only one

B. Only two

C. Only three

D. All four

ANSWER

1. B



PRELIMS BITS: THE SCIENCE BEHIND FOG AND THUNDERSTORM

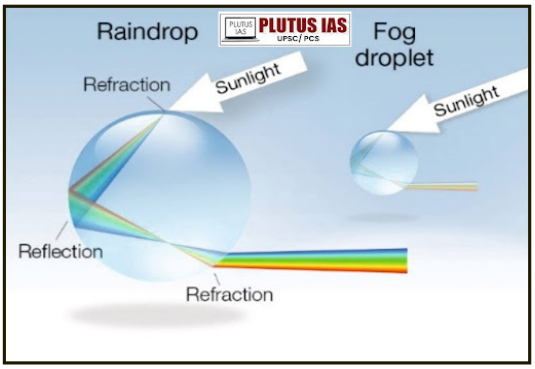
WHY IN THE NEWS?

The India Meteorological Department (IMD) has forecast dense fog conditions over Uttarakhand, Punjab, Haryana, Chandigarh, Sub-Himalayan West Bengal, and Sikkim today, with similar conditions expected in isolated pockets of Uttar Pradesh, Gangetic West Bengal, Coastal Odisha, and Bihar for the next 2-3 days. Additionally, light to moderate rainfall accompanied by thunderstorms is predicted over Arunachal Pradesh, Assam, and Meghalaya for the next two days. IMD has also projected a rise in temperature by 2-4°C over Northwest, Central, and East India during the next four days. These weather conditions may impact transportation, visibility, and overall climate patterns in the affected regions.



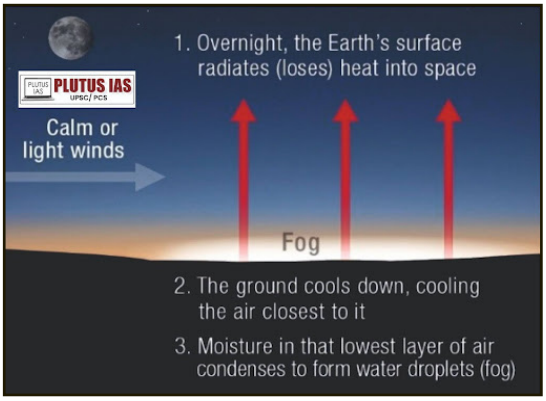
WHAT IS FOG?

The World Meteorological Organization (WMO) defines fog as a suspension of very small water droplets in the air that reduces visibility at ground level to less than one kilometer.



MECHANISM OF THE FORMATION OF THE FOG:

- **Similar to Cloud Formation:** Fog forms like clouds but occurs at the surface rather than higher in the atmosphere.
- **Cooling to Dew-Point Temperature:** For fog to form, air must cool to its dew-point temperature (the temperature at which condensation occurs).
- **Condensation of Water Vapour:** Invisible water vapour condenses into tiny droplets, creating fog.
- **Nighttime Cooling:** The most common cause of fog is overnight cooling, as the ground radiates heat absorbed during the day.
- **Ideal Weather Conditions:** Clear skies, light winds, and a high-pressure system favor fog formation.
- **Role of Wind:** Too much wind → Low clouds form instead of fog. Too little or no wind → Dew forms on surfaces instead of fog.
- **Moisture Content in Air:** Measured by the dew point temperature, higher values indicate more moisture. Fog forms when air temperature and dew point temperature are close together.
- **Temperature Difference Matters:** If the daytime temperature is too high compared to the dew point, nighttime cooling may not be sufficient for condensation.
- **Classic Fog Formation Pattern:** Rain in the evening increases the dew-point temperature. A high-pressure system follows, bringing clear skies and light winds overnight. This setup often results in thick, dense fog.



TYPES OF FOG

Type	Formation Process	Characteristics
Radiation Fog	Forms when the ground cools overnight, causing air near the surface to reach the dew-point temperature.	Most common type, occurs under clear skies and light winds.
Advection Fog	Forms when warm, moist air moves over a cooler surface.	Common in coastal areas; sea fog is a type of advection fog.
Upslope Fog	Forms when moist air is forced up a slope and cools to saturation.	Can occur over mountains, hills, or even gentle slopes.
Fogbow	Caused by the refraction and reflection of sunlight in fog droplets.	Similar to rainbows but appears white due to smaller droplet size.

COMPARISON BETWEEN SMOG, FOG, AND MIST

Factor	Smog	Fog	Mist
Definition	A mixture of fog, smoke, and air pollutants	A dense suspension of tiny water droplets reducing visibility	A light suspension of water droplets with less density than fog
Main Components	Smoke, dust, industrial pollutants, and fog	Water droplets formed by condensation	Water droplets formed by condensation but in lower concentration
Visibility Reduction	Can reduce visibility to a few meters	Reduces visibility to less than 1 km	Visibility remains more than 1 km
Colour	Yellowish or brownish due to pollutants	Usually white or grey	Appears whitish and thin
Formation Process	Forms when pollutants mix with fog in the presence of high humidity and temperature inversions	Forms when air cools to the dew-point temperature, causing condensation	Forms similarly to fog but with fewer water droplets
Common Causes	Vehicular emissions, industrial pollution, burning of fossil fuels	Cooling of air, high humidity, light winds, and clear skies	Same as fog but with less moisture and higher visibility
Occurrence	More common in urban areas with high pollution	Found in valleys, near water bodies, and low-lying areas	Appears in open landscapes, hills, and near water sources
Health Impact	Severe respiratory issues, eye irritation, and lung diseases due to pollutants	Generally harmless but can cause breathing discomfort in sensitive individuals	No significant health impact

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Impact on Transportation	Causes major traffic, air, and rail disruptions due to extremely low visibility	Reduces visibility, causing travel delays	Minimal impact on transportation
Example Events	London's Great Smog (1952) caused 8,000+ deaths	Common in winter mornings in valleys and plains	Often seen over fields and water bodies in the early morning

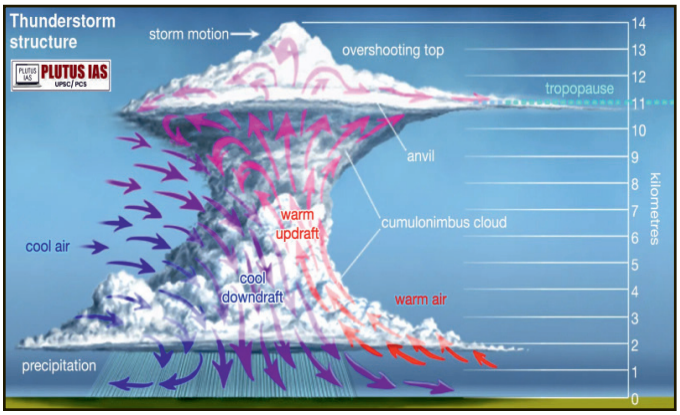
THUNDERSTORMS:

WHAT IS A THUNDERSTORM?

A thunderstorm is a rain shower accompanied by the sound of thunder. Since thunder is produced by lightning, all thunderstorms are characterized by the presence of lightning.

MECHANISM OF THUNDERSTORM FORMATION

- **Ingredients for Formation:** Moisture, Rising unstable air (air that continues to rise when disturbed), Lifting mechanism (e.g., hills, mountains, or air collisions).
- **Surface Heating:** The sun heats the earth's surface, warming the air above it.
- **Rising Air:** Warm air rises because it is lighter and warmer than the surrounding air. This upward movement is driven by convection.
- **Cloud Formation:** As the air rises and cools, its water vapor condenses into a cloud. The cloud grows as it continues to rise into colder parts of the atmosphere.
- **Ice Particle Creation:** As the cloud reaches freezing temperatures, liquid water drops freeze into ice particles. These ice particles grow by collecting supercooled liquid droplets or vapor.
- **Collision of Ice Particles:** When ice particles collide, they build up electric charges. Some collisions transfer charge, leading to the formation of lightning.
- **Lightning and thunder:** The electric discharge from lightning creates thunder (sound waves), which we hear during a storm.



THUNDERSTORM TYPES AND FEATURES

Thunderstorm Type	Features
Single-Cell Thunderstorm	– Small, brief, weak storms
	– Lasts about 1 hour
	– Typically driven by afternoon heating
	– May produce brief heavy rain and lightning
Multi-Cell Thunderstorm	– Common, garden-variety thunderstorms
	– New updrafts form along the gust front (leading edge of rain-cooled air)

	– Cells usually last 30 to 60 minutes, system can last for several hours
	– May produce hail, strong winds, brief tornadoes, and/or flooding
Squall Line	– Group of storms arranged in a line
	– Accompanied by squalls of high wind and heavy rain
	– Can be hundreds of miles long, but 10-20 miles wide
	– Less likely to produce tornadoes than supercells
Supercell	– Long-lived (greater than 1 hour), highly organized storms
	– Features a tilted rotating updraft (mesocyclone), which can extend up to 10 miles in diameter
	– Can lead to violent tornadoes (most large tornadoes come from supercells)
Bow Echo	– Radar signature of squall line that "bows out"
	– May indicate high winds in the middle of the line, with possible brief tornadoes
	– Often evolves into a comma-shaped storm complex
Mesoscale Convective System (MCS)	– Collection of thunderstorms that act as a system
	– Can cover an entire state and last more than 12 hours
	– Includes subtypes like Mesoscale Convective Complex (MCC) and Mesoscale Convective Vortex (MCV)
Derecho	– Long-lived wind storm associated with a band of rapidly moving thunderstorms
	– Produces straight-line wind damage along a swath
	– By definition, extends over 240 miles and wind gusts of 58 mph or more

PRELIMS QUESTION:

1. Which of the following conditions are prerequisites for the formation of Fog?

1. Cooling of air
2. Low humidity,
3. Light Calm winds
4. Clear skies
5. High temperature

Select the correct answer using the code given below:

A. 1, 2 and 3 Only

B. 1, 3, and 4 Only

C. 2, 4, and 5 Only

D. 3, 4 and 5 Only

2. The term 'Mesoscale Convective System (MCS)' is sometimes mentioned in the news in the context of:

A. Climate change

B. Urban Heat Island Effect

C. Landslides

D. Thunderstorms

ANSWER

1. B	2. D

THE DEEP DIVE INTO THE ECB

WHY IN THE NEWS

India's investment ecosystem and external commercial borrowings (ECBs) have significantly developed over the past few years. The recent report by the State Bank of India (SBI) has highlighted trends in investment announcements, the private sector's contribution, and the role of ECB in corporate financing.



DEFINITION:

External Commercial Borrowings (ECB) are commercial loans raised by eligible resident entities from recognized non-resident entities. They adhere to regulatory parameters such as minimum maturity, all-in-cost ceiling, and permitted and non-permitted end-uses. ECBs are governed under FEMA Notification Nos. 3R & 8.

Hedging Status of ECB Loans -Sep-22 vis-à-vis Sep-24 (US$ bn)		
Description	Sep-22	Sep-24
A. ECB – Total outstanding	173.5	190.4
B. ECB – INR denominated	15.1	15.3
C. ECB – FDI Companies' borrowings from foreign parent	28.4	32.5
of which, (a) INR denominated	10.8	12.4
(b) FCY denominated	17.6	20.1
D. ECB – Non-Rupee and non-FDI [= A-B-C(b)]	140.7	154.9
E. Hedged non-Rupee non-FDI ECBs (i.e., D above)	61.6	89.5
F. ECB – unhedged {D-E}	78.9	65.5
G. Percentage share of unhedged ECB {(F)/(A)*100}	45.5	34.4

ECB CRITERIA:

Eligible Borrowers: All entities except Limited Liability Partnerships (LLPs) can raise ECB.

Eligible Lenders:

- Resident of FATF (Financial Action Task Force) or IOSCO-compliant country.
- Multilateral/regional financial institutions where India is a member.
- Foreign equity holders (for specific ECB purposes).
- Foreign branches/subsidiaries of Indian banks (only for FCY ECB).

MINIMUM AVERAGE MATURITY PERIOD (MAMP):

GENERAL ECB: 3 YEARS.

- Foreign equity holder ECB for specific purposes: 5 years.
- Manufacturing sector ECB (up to INR 3.5 billion per FY): 1 year.

CURRENCY OPTIONS:

- ECB can be raised in Indian Rupees (INR) or any freely convertible foreign currency.

MODES OF RAISING ECB:

1. **Automatic Route:** AD Category-I Bank examines and approves the case. The application, along with Form ECB, is sent to RBI for Loan Registration Number (LRN) issuance.

2. **Approval Route:** The borrower applies through AD Category-I Bank to RBI for approval. The application is considered based on

macroeconomic conditions and the merits of the proposal.

TYPES OF ECB:

- Loans
- Securitized instruments
- Buyers' and Suppliers' credit
- Foreign Currency Convertible Bonds (FCCBs)
- Foreign Currency Exchangeable Bonds (FCEBs)
- Financial Lease

ALLOWED SECTORS FOR ECB USE:

- Infrastructure sector (as per the Harmonised Master List).
- Shipping & airline companies (for import of second-hand vessels/aircraft under Track I).
- Manufacturing sector (ECB up to INR 3.5 billion per FY can have a 1-year MAMP).
- General corporate purposes & working capital (only under Track III).

NON-PERMITTED END-USES OF ECB:

- Real estate activities.
- Purchase of land.
- Investment in the capital market.
- Import of services.
- Refinancing of Rupee-denominated ECB under Track II.
- Payment of overdue import bills (Track I ECBs only).
- Contribution to Limited Liability Partnerships (LLPs).

REGULATORY COMPLIANCE & REPORTING:

- **Loan Registration Number (LRN):** Required before any ECB draw-down.
- **Changes in ECB Terms:** Must be reported to RBI via Revised Form ECB within 7 days.
- **Hedging Requirements:** Certain entities (NBFCs, Holding Companies, Core Investment Companies) must hedge 100% of ECB exposure if MAMP is less than 5 years old. AD Category-I Bank verifies compliance and reports to RBI via ECB 2 returns.
- **Conversion of ECB into Equity:** Subject to FDI sectoral cap. Reported via Form FC-GPR and ECB 2 Return.
- **Monthly Reporting:** ECB transactions must be reported via ECB 2 Return to RBI within 7 working days of the end of the month.

COMPARISON OF ECBS AND FDI

Feature	External Commercial Borrowings (ECBs)	Foreign Direct Investment (FDI)
Type	Debt financing	Equity financing
Structure	Debt instruments raised from foreign investors	Foreign money invested in equity capital
Purpose	Used for capital expansion and modernization	Helps foster economic growth in both host and investing country
Permitted Uses	Infrastructure, manufacturing, corporate purposes	Investment in business operations and assets
Repayment	Has a fixed repayment schedule with interest	No fixed repayment; returns depend on business performance
Interest Cost	Interest payments required	No direct interest cost, but profit-sharing or dividends apply

Exchange Rate Risk	Can impact repayment costs	Shared between investor and investee company
Control & Ownership	No impact on ownership	Foreign investors may gain significant control
Maturity	Fixed maturity period	Long-term investment with no fixed maturity
Regulation	Subject to RBI regulations	Subject to government policies and sectoral caps
Impact on Balance of Payments	Increases external debt and impacts the balance of payments	Improves capital account balance
Sectoral Focus	Various sectors as per RBI guidelines	Sector-dependent based on government policies and investor preference
Risk Factors	Exchange rate fluctuations, regulatory changes	Capital outflows if profits are not reinvested
Benefits	Access to foreign capital at competitive rates	Boosts job creation, infrastructure, and economic development
Examples	Indian companies raising loans from foreign banks or issuing bonds in overseas markets	Foreign companies setting up manufacturing facilities or acquiring stakes in Indian companies

PRELIMS QUESTIONS:

1. Consider the following statements:

1. External Commercial Borrowing (ECB) and FDI are both a debt investment in Indian markets.
2. The ECB is prohibited in the real estate sector, while the FDI is allowed in the Real estate sector.
3. The Ministry of Finance regulates the ECB, While the RBI regulates the FDI.

How many of the statements given above are correct?

A. Only one

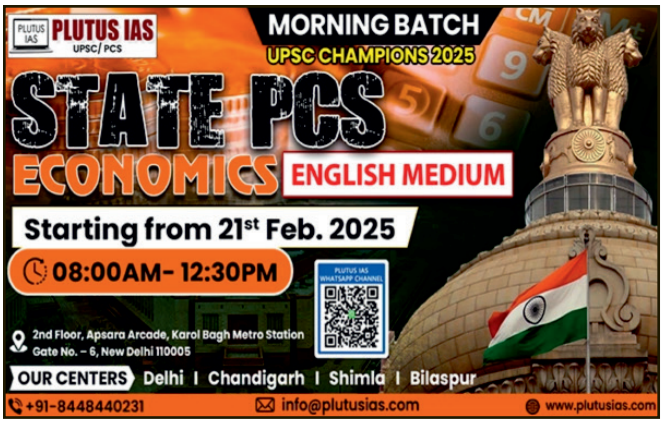
B. Only two

C. All three

D. None

ANSWER

1.A



PRELIMS BITS: ENDEMIC ANIMALS TO INDIAANIMAL NAME, REGION, AND KEY FEATURES.



NAME OF THE ENDEMIC ANIMAL, ITS ENDEMIC REGION IN INDIA, AND ITS BASIC FEATURES:

Name of Animal	Endemic Region in India	Basic Features
Sangai Deer (Brow-Antlered Deer)	Keibul Lamjao National Park, Manipur	Semi-aquatic deer, adapted to floating vegetation (Phumdi), endangered.
Kashmir Stag (Hangul)	Kashmir Valley, Jammu & Kashmir	Only red deer species in India, critically endangered.
Rufous Babbler	Western Ghats	A small bird with rufous plumage, found in dense forests.
Malabar Grey Hornbill	Western Ghats	A large bird with a distinct casque on its beak, feeds on fruits.
Black-and-Orange Flycatcher	Western Ghats	Small songbird with striking black and orange colors.
Nilgiri Wood Pigeon	Nilgiri Hills, Western Ghats	Large pigeon with dark grey plumage, inhabits dense forests.
Pygmy Hog	Assam (Manas National Park)	World's smallest wild pig, critically endangered.
Indian Giant Squirrel	Western and Central India	Large, colorful tree squirrel, arboreal.
Bare-Bellied Hedgehog	Southern India	Small nocturnal mammal with spiny body, rare species.
Brown Palm Civet	Western Ghats	Nocturnal, tree-dwelling mammal, feeds on fruits and small animals.
Malabar Large-Spotted Civet	Western Ghats	Endangered carnivore, lives in dense forests.
Red-Crowned Roofed Turtle	Northern India (Ganges Basin)	Freshwater turtle with a distinctive red crown on its head.
Nilgiri Flycatcher	Nilgiri Hills, Western Ghats	Small blue bird, found in montane forests.
White-Cheeked Barbet	Western Ghats	Greenish bird with white cheek patches, frugivorous.
Nilgiri Pipit	Nilgiri Hills	Small bird found in grasslands and montane forests.

White-Bellied Treepie	Western Ghats	Tree-dwelling bird with white belly and long tail.
Malabar Gliding Frog	Western Ghats	Large tree frog with webbed feet, capable of gliding.
Great Nicobar Serpent Eagle	Nicobar Islands	Small eagle that preys on reptiles, endemic to Great Nicobar.
Andaman Woodpecker	Andaman Islands	Black woodpecker with strong bill, found in dense forests.
Narcondam Hornbill	Narcondam Island	Large, rare hornbill species with distinctive casque.
Green Avadavat	Central India	Small finch species, bright green plumage.
Yellow-Throated Bulbul	Peninsular India	Medium-sized bird with yellow throat and olive body.
Nilgiri Tahr	Western Ghats (Nilgiri Hills)	Wild goat species, adapted to rocky terrain, endangered.
Nicobar Parakeet	Nicobar Islands	Large green parrot with red beak, found in rainforests.
Bugun Liocichla	Arunachal Pradesh	Recently discovered bird species, critically endangered.
Nilgiri Laughingthrush	Western Ghats	Social bird with melodious calls, brownish plumage.
Bufo Beddomii	Western Ghats	Toad species, adapted to moist environments.
Rhacophorus Pseudomalabaricus	Western Ghats	Rare tree frog species, capable of gliding.
Bonnet Macaque	Southern India	Monkey species with distinctive bonnet-shaped hair.
Pomona Roundleaf Bat	Western Ghats	Bat species with rounded leaf-nosed structure.
Andaman Shrew	Andaman Islands	Small, nocturnal insectivorous mammal.
Andaman Spiny Shrew	Andaman Islands	Rare shrew species with spiny fur.
Mitred Horseshoe Bat	India	A bat species with horseshoe-shaped nasal folds.
Day's Shrew	Western Ghats	Small shrew species, insectivorous.
Nicobar Flying Fox	Nicobar Islands	Large fruit bat, plays a role in seed dispersal.

Andaman Rat	Andaman Islands	Endemic rodent species, found in forests.
Andaman Horseshoe Bat	Andaman Islands	Nocturnal bat, relies on echolocation for hunting.
Khajuria's Leaf-Nosed Bat	Central India	Small bat species with leaf-like nose structure.
Jungle Palm Squirrel	Peninsular India	Arboreal squirrel, feeds on nuts and fruits.
Kondana Soft-Furred Rat	Maharashtra	Rare rat species found in the Western Ghats.
Nicobar Shrew	Nicobar Islands	Endemic shrew species, found in tropical forests.
Peters's Tube-Nosed Bat	India	Small bat species with unique tube-like nostrils.

PRELIMS BITS: GLOBAL PARTNERSHIP ON ARTIFICIAL INTELLIGENCE (GPAI)

FOR PRELIMS:

What is AI, types of AI? What are the international laws regulating AI? What is the Global Partnership on Artificial Intelligence (GPAI)

WHY IN THE NEWS?

The Paris AI Action Summit 2025 will be a pivotal event in shaping global AI policies, governance, and innovation. Led by India and France, the summit will gather world leaders, tech giants, and policymakers to discuss key issues like privacy, ethics, AI governance, and economic impact. The focus areas include AI regulation, data security, economic growth, and global collaboration, aiming to establish responsible AI frameworks, safeguard user data, and drive AI-driven innovation across industries.



GLOBAL PARTNERSHIP ON ARTIFICIAL INTELLIGENCE (GPAI)

Category	Details
Full Name	Global Partnership on Artificial Intelligence (GPAI)
Established	June 15, 2020
Proposed By	Canada and France (2018 G7 Summit)
Hosted By	Organization for Economic Co-operation and Development (OECD)
Objective	Guide responsible AI development, ensuring it aligns with human rights and democratic values

Founding Members (15)	Australia, Canada, France, Germany, India, Italy, Japan, Mexico, New Zealand, Republic of Korea, Singapore, Slovenia, UK, USA, EU
Joined in 2021 (10)	Czechia, Israel + additional EU countries (total membership: 25)
Total Members (2022)	29 countries
Pending Members (7)	Austria, Chile, Finland, Malaysia, Norway, Slovakia, Switzerland
Key Activities	Supports AI research, policy recommendations, and international collaboration
Working Groups	– Responsible AI (including AI & Pandemic Response)
	– Data Governance
	– Future of Work
	– Innovation & Commercialization
Centres of Expertise	– Montreal (supports Responsible AI & Data Governance)
	– Paris (supports Future of Work & Innovation & Commercialization)
Steering Committee Chairs	– Jordan Zed & Baroness Joanna Shields (2020-2021)
	– Joanna Shields & Renaud Vedel (2021-2022)
	– Yoichi Iida & Inma Martinez (2023-2024)
Rotating Presidency	Canada (2020), France (2021), Japan (2022), India (2023)

PRELIMS QUESTION:

1. Consider the following countries:

1. Argentina
2. India
3. Russia
4. China

How many of the above countries are members of the Global Partnership on Artificial Intelligence (GPAI)?

A. Only one

B. Only two

C. Only three

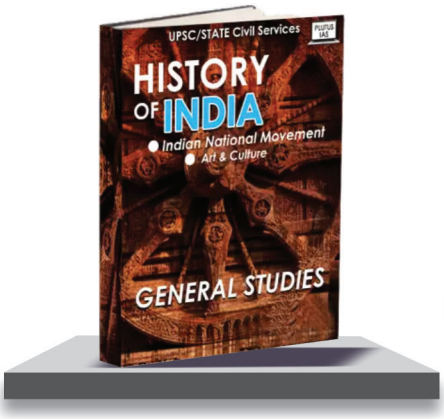
D. All four

ANSWER

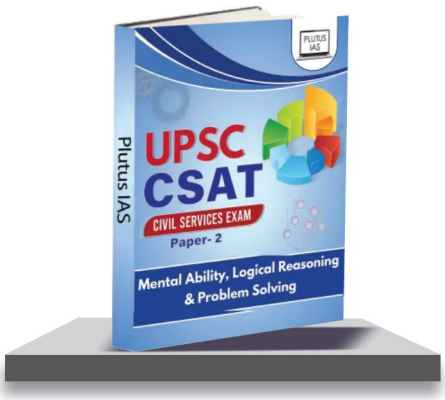
1. B

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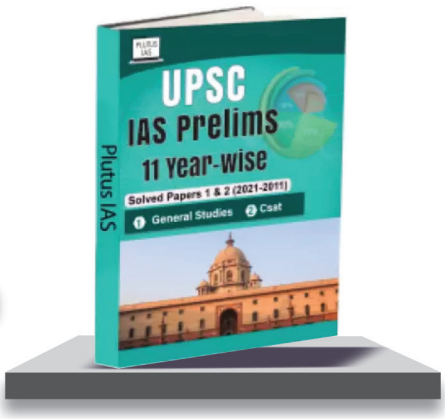
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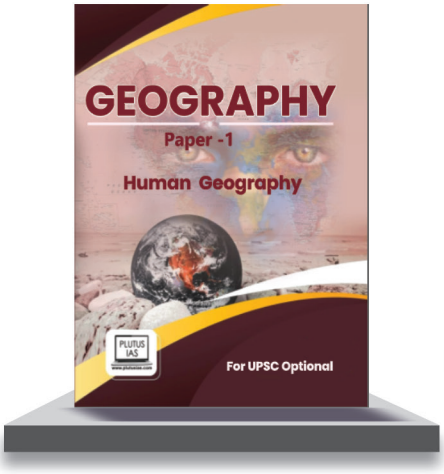


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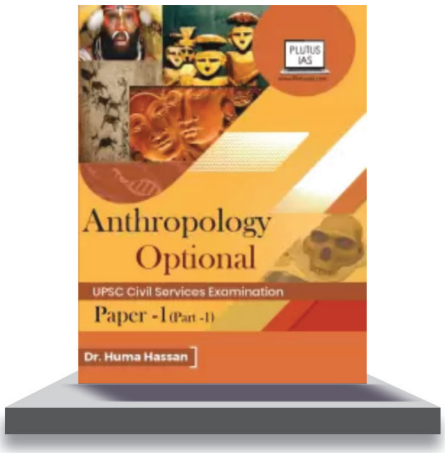


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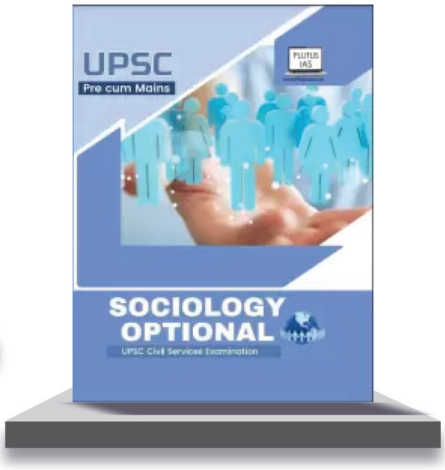
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