PLUTUS IAS
UPSC / PCS

MONTHLY CURRENT AFFAIRS DECEMBER 2025

Topic Covered

1. MODEL YOUTH GRAM SABHA
2. E-DAR AND IRAD SYSTEMS
3. REWIRING INDIA'S POWER SECTOR
4. MODERNISING MEDIA GOVERNANCE
5. DPDP ACT IMPLEMENTATION
6. NARI SHAKTI AND THE NEW INDIA
7. NATIONAL CONFERENCE ON HANDLOOMS & HANDICRAFTS 2025.



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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
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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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DECEMBER 2025
CURRENT AFFAIRS

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BRIDGING THE JUSTICE GAP: THE ROLE OF LEGAL SERVICES AUTHORITIES IN EMPOWERING CITIZENS

WHY IN THE NEWS?

India, the world's largest democracy, guarantees equal rights and protection under the law to all citizens. However, many still struggle to access legal services due to poverty, illiteracy, and lack of awareness.

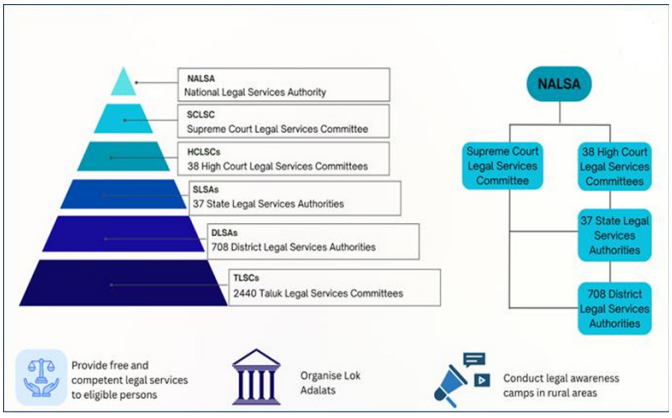
To address this, the Legal Services Authorities Act, 1987 established bodies to provide free and competent legal aid to the disadvantaged. Since the Act came into force on November 9, 1995, this day is observed annually as National Legal Services Day.

It is in the news as the day is being celebrated across the country with legal awareness camps and outreach programmes organised by NALSA and State Legal Services Authorities. New digital initiatives and helpline services have also been launched to make justice more accessible and affordable.



LEGAL SERVICES AUTHORITIES

- The Legal Services Authority Act, 1987, established legal aid organisations nationwide to ensure that no citizen suffering from economic or other barriers is denied an equal opportunity for getting justice.
- The act established a three-tier system to provide free and competent legal services:
- National Legal Services Authority (headed by the Chief Justice of India)
- State Legal Services Authorities (headed by the Chief Justice of High Court)
- District Legal Services Authorities (headed by the District Judge)

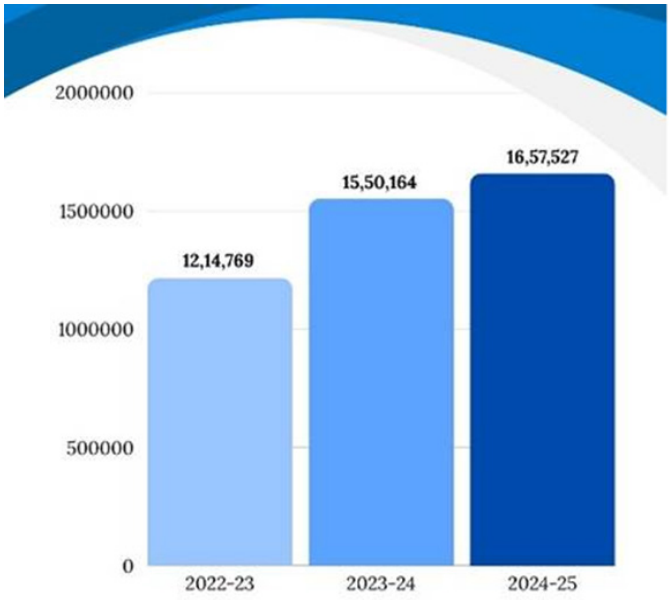


Legal aid is funded by the central and state governments and donations through a three-tier funding structure:

Central funding or donations to the Central Authority through the National Legal Aid Fund

Central or State Government funding or other contributions to the State Authority through the State Legal Aid Fund

State Government funding or other donations to the District Authority through the District Legal Aid Fund



No. of beneficiaries of legal aid and advice

The number of people who benefited from free legal aid in the past three years has risen. From 2022-23 to 2024-25, over 44.22 lakh people benefited from the legal aid and advice given by the Legal Services Authorities.

How to Apply for Free Legal Aid?

Anyone who needs free legal services and is eligible can apply to the concerned Legal Services Authority or Committee.[8]

- The application can be submitted **in writing, by filling up a prescribed form**, or made **orally** (in which case an officer or paralegal volunteer will help record the request).
- Applications can also be made **online** through the Legal Aid Application available on the websites of NALSA or State/District Legal Services Authorities.

If NALSA receives an application directly, it will **forward it to the appropriate authority**.

Once the application reaches the concerned Legal Services Institution, it is reviewed to decide the next steps. Depending on the case, assistance may include **legal advice**, **counselling**, or **appointment of a lawyer** to represent the applicant in court.

If the application is accepted:

- The applicant is **informed about the lawyer assigned**, and both receive a **letter of appointment**.
- The lawyer will then contact the applicant, or the applicant may also reach out to the lawyer.

As per **Regulation 7(2) of the National Legal Services Authority (Free and Competent Legal Services) Regulations, 2010**, a decision on the application must be made **immediately, and not later than seven days** from the date of receipt.

Communication of Application Status:

1. **Physical applications:** Updates are sent to the applicant's postal or email address.
2. **Online applications:** An application number is generated, and the applicant can **track the status online** through the respective portal.
3. **Applications from Government Departments/ Centralised Public Grievance Redress and Monitoring System (CPGRAMS):** Applicants are informed via email and can view the scanned copy and remarks on the **CPGRAMS** and **Legal Services Authority** websites.

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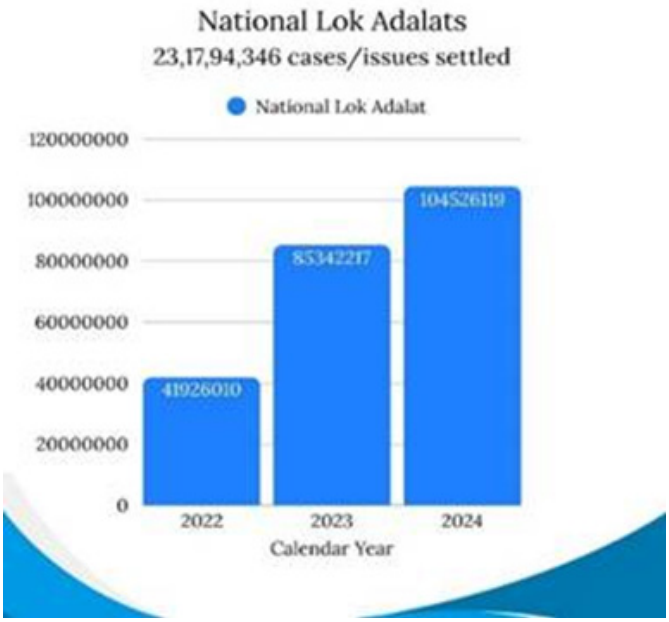
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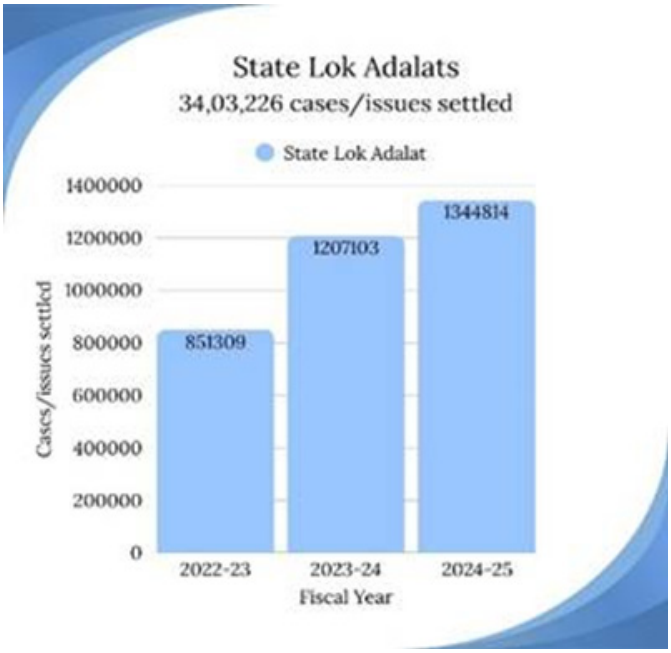
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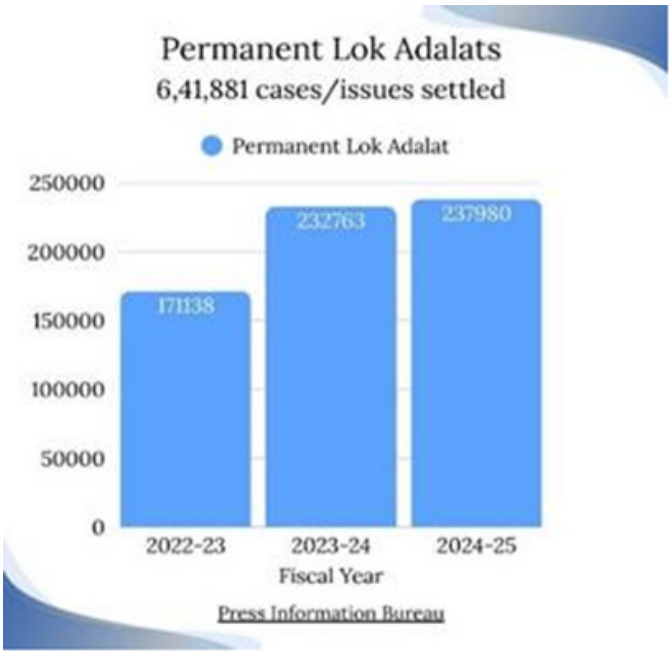
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LOK ADALATS

The Act also established Lok Adalats and Permanent Lok Adalats, which are alternate dispute redressal forums organised by the legal authorities above. The forums settle pending disputes or cases or those at the pre-litigation stage amicably.From 2022-23 to 2024-25 over 23.58 crore cases were resolved through the state, permanent and national Lok Adalats.







LEGAL AID DEFENSE COUNSEL SYSTEM (LADCS) SCHEME

The LADCS scheme by NALSA provides free legal defense in criminal cases for eligible beneficiaries under the Legal Services Authorities Act, 1987.

As on September 30, 2025, 668 districts have a functional LADCS office.

Over 7.86 lakh cases out of the 11.46 lakh assigned cases were disposed by the LADCs from 2023-24 to 2025-26 (till September, 2025).

The approved financial outlay of LADCs scheme is Rs. 998.43 crore for the fiscal years 2023-24 to 2025-26.

DESIGNING INNOVATIVE SOLUTIONS FOR HOLISTIC ACCESS TO JUSTICE

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Modern technology is helping people access the legal system easily and affordably, too. About 2.10 crore people (as on February 28, 2025) were given pre-litigation advice, pro bono services, and legal representation and awareness through the DISHA scheme, which has been implemented from 2021-2026. It is funded by the Government of India and has an outlay of Rs. 250 crore.

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LEGAL AWARENESS PROGRAMMES

Many people are unaware of their rights and legal procedures. NALSA conducts various legal awareness programmes on laws related to children, labourers, disaster victims and other marginalised sections of society. The authorities also prepare booklets and pamphlets in simple language, which are distributed among people. From 2022-23 to 2024-25, over 13.83 lakh legal awareness programmes were organised by the Legal Services Authorities and about 14.97 crore people attended them. The Department of Justice runs the Legal Literacy and Legal Awareness programme (LLLAP) under DISHA. Various regional implementing agencies state such as the Sikkim State Women commission and the Arunachal Pradesh SLSA run the programme. Through the programme, the department developed communication materials in 22 scheduled languages and dialects of the northeastern states. Doordarshan also collaborated with the ministry and aired 56 legal awareness TV programmes in six languages, reaching over 70.70 lakh people. 21 webinars on socio-legal issues were aired on government social media channels from 2021 to 2025. Overall, the LLLAP reached over 1 crore people.

FAST TRACK AND OTHER COURTS

Fast-track courts (FTCs) were established for the speedy trial of heinous crimes and civil cases related to women, children, senior citizens, disabled persons, and property cases pending for more than five years—while the 14th Finance Commission recommended 1,800 FTCs during 2015-20, 865 FTCs are currently functional as of June 30, 2025.

A centrally sponsored scheme launched in October 2019 established Fast Track Special Courts (FTSCs) dedicated to victims of serious sexual offenses, including those under the Protection of Children from Sexual Offences (POCSO) Act; as of June 30, 2025, 725 FTSCs including 392 exclusive POCSO courts are functional in 29 states and union territories and have disposed of 3,34,213 cases since inception.

The scheme, which began in 2019-20 with an initial allocation of Rs. 767.25 crore (Rs. 474 crore from the Nirbhaya Fund), has been extended twice, with the latest extension up to March 31, 2026, at an outlay of Rs. 1,952.23 crore (Rs. 1,207.24 crore from Nirbhaya Fund).

TRAINING

The National Judicial Academy regularly conducts academic programmes for judges and legal-aid functionaries, providing them with the latest legal knowledge, practical skills, and deeper understanding of challenges faced by vulnerable groups to advance equal access to justice.

NALSA runs the Para-legal Volunteers Scheme to provide legal training to volunteers from diverse backgrounds, who are trained to act as intermediaries between people and legal services institutions. The legal authorities train these volunteers in the constitutional vision of justice, basics of criminal law, labour laws, law for juveniles, and laws for protection of women and senior citizens.

To strengthen capacity-building for legal aid personnel serving marginalised communities, NALSA has developed 4 Training Modules specifically for Legal Services Lawyers and Para-Legal Volunteers (PLVs), and Legal Services Institutions across the country conduct training programmes for panel lawyers and PLVs from time to time—from 2023-24 to May 2024, state legal authorities organised 2,315 such training programmes across India, ensuring that legal assistance is effectively provided to those who cannot afford legal representation.

CONCLUSION

India's legal system strives to make justice accessible to all. Removing barriers to justice is inherent in the Indian constitution.

The nationwide network of free legal aid, supported by Lok Adalats, fast-track courts, legal awareness programmes allow for quick and easy dispute resolution. Legal aid and outreach programmes on legal awareness have also reached crores of Indians,

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ensuring that even the most vulnerable sections of society can access their fundamental right to justice without constraints.

Prelims question:

Q. Which of the following statements about the DISHA scheme is correct?

1. It is funded by the Government of India.
2. It aims to provide legal awareness, pre-litigation advice, and pro bono services.
3. It has an outlay of ₹250 crore.

Select the correct answer:

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

Answer: D

Mains Question:

Q. Discuss the significance of the Legal Services Authorities in ensuring access to justice for all. How have schemes like LADCS, DISHA, and fast-track courts strengthened this goal?

(250 words)

INDIA'S NEW LABOUR CODES: TRANSFORMING THE WORKFORCE FOR A MODERN ECONOMY

WHY IN THE NEWS?

India's labour ecosystem has recently come into sharp focus due to major reforms, improved employment figures, and expanding social protection coverage. According to official data, employment in India has surged from 47.5 crore in 2017–18 to 64.33 crore in 2023–24, adding 16.83 crore jobs within six years—a historic rise. Simultaneously, the unemployment rate has halved from 6.0% to 3.2%, and 1.56 crore women have joined the formal workforce, reflecting the Government's push toward inclusive growth. These developments come at a time when India is implementing its four new Labour Codes, which consolidate 29 existing labour laws into a simplified, modern framework. The Codes aim to improve workers' welfare, streamline compliance for industries, and build a future-ready labour market.



RATIONALE BEHIND THE CODIFICATION OF THE EXISTING 29 LABOUR LAWS

Reforms in labour laws are an ongoing process. The Government continuously works to modernize and streamline the legislative framework in line with the evolving economic and industrial landscape of the country. The codification of 29 existing labour laws into four Labour Codes was undertaken to address long-standing challenges and make the system more efficient and contemporary. The codification aims to enhance ease of doing business, promote employment generation, ensure safety, health, social & wage security for every worker.

The key reasons behind this reform include:

Simplifying compliance: Multiplicity of laws leads to difficulty in compliance.

Streamlining enforcement: Multiplicity of authorities in different labour laws led to complexity and difficulty in enforcement.

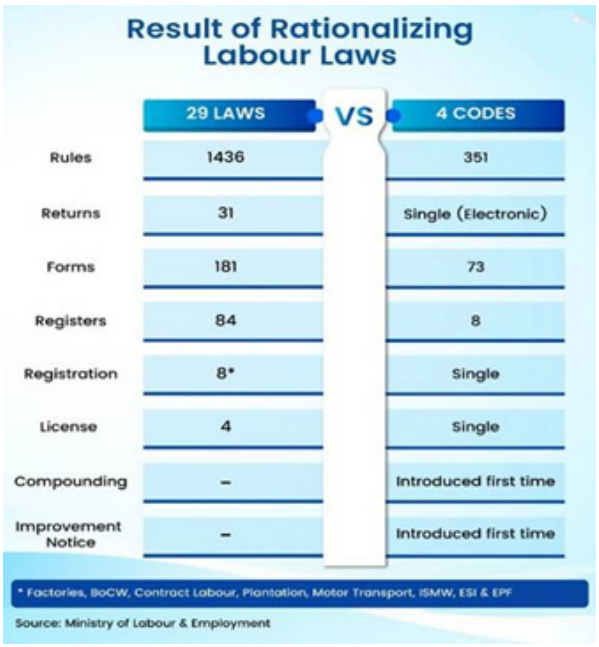
Modernizing outdated laws: Most labour legislations were framed during the pre-Independence era,

necessitating alignment with today's economic realities and technological advancements.

FORMULATION OF 4 LABOUR CODES

An important reason of rationalizing labour laws via codification was to simplify the registration, licensing framework by introducing the concept of a Single Registration, Single License, and Single Return, thereby reducing the overall compliance burden to spur employment.

The second National Commission on Labour had recommended that the existing Labour Laws should be broadly grouped into four/ five Labour Codes on functional basis. Accordingly, the Ministry of Labour & Employment started the exercise to rationalize, simplify and amalgamate the relevant provisions of the labour laws in four codes. The four Labour Codes were enacted after the deliberations held in the tripartite meeting of the Government, employers', industry representatives and various trade unions during 2015 to 2019. The Code on Wages, 2019 was notified on 8th August, 2019 and the remaining three Codes were notified on 29th September, 2020.



FOUR LABOUR CODES OF INDIA

Labour Code	Purpose / Consolidation	Major Highlights / Key Provisions
1. Code on Wages, 2019	Consolidates 4 laws: Payment of Wages Act, 1936; Minimum Wages Act, 1948; Payment of Bonus Act, 1965; Equal Remuneration Act, 1976.	• Universal Minimum Wages for all employees in organized + unorganized sectors. • National Floor Wage – states cannot set wages below this level. • Wage fixation based on skill, geography, working conditions. • Gender-neutral wage and employment protection including transgender workers. • Universal coverage of wage payment rules (removed ₹24,000 limit). • Mandatory overtime at ≥ 2× normal wages. • Employer fully liable for payment of wages. • Inspector-cum-Facilitator for guidance + enforcement. • Compounding of first-time offences. • Decriminalization – fines replace imprisonment for several violations.

2. Industrial Relations Code, 2020	Consolidates 3 laws: Trade Unions Act, 1926; Industrial Employment (Standing Orders) Act, 1946; Industrial Disputes Act, 1947.	• Fixed Term Employment (FTE) with full parity + gratuity after 1 year. • Re-skilling Fund for retrenched workers (15 days' wages). • Recognition of Trade Unions: 51% union = negotiating union; otherwise negotiating council. • Broader definition of worker (includes journalists, sales staff, supervisory workers up to ₹18,000). • Industry defined widely — covers all systematic activities. • Threshold for lay-off/closure raised from 100 → 300 workers. • Women's representation in grievance committees. • Standing Orders threshold raised to 300 workers. • Work-from-Home permitted in services. • Two-member Industrial Tribunals for quick disposal. • Direct tribunal access after 90 days of failed conciliation. • Mandatory 14-day strike/lockout notice. • Mass casual leave = strike. • Digital records and processes. • Compounding & decriminalization of minor offences.
3. Code on Social Security, 2020	Consolidates 9 laws: EPF Act, ESI Act, Maternity Benefit Act, Payment of Gratuity Act, Worker Compensation Act, BOCW Cess Act, Cine Workers Act, Employment Exchanges Act, Unorganised Workers Act.	• Universal social security: organized, unorganized, gig, and platform workers. • Expanded ESIC to entire India; easier voluntary coverage. • EPF inquiries capped at 5 years; must conclude within 2 years. • EPF appeal deposit reduced to 25%. • Self-assessment of construction cess. • Gig/platform worker social security with aggregator contribution (1–2% turnover). • Social Security Fund for unorganised workers. • Expanded definition of dependents including in-laws for female workers. • Uniform definition of wages = Basic + DA + Retaining allowance; at least 50% fixed. • Commuting accidents deemed employment-related. • Gratuity eligibility for FTE after 1 year. • Randomized, algorithm-based inspections. • Decriminalization + fines; 30-day notice before prosecution. • Digitization of all returns and records. • Mandatory vacancy reporting to career centres.

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4. Occupational Safety, Health & Working Conditions (OSHWC) Code, 2020	Consolidates 13 laws: Factories Act, Mines Act, Plantations Labour Act, Contract Labour Act, Motor Transport Workers Act, Inter-state Migrant Workmen Act, BOCW Act, etc.	• Ensures safety, health, working standards across sectors. • Applies to factories, mines, plantations, contract labour, motor transport, journalism, construction, cinema workers, etc. • Aims for safe and humane working conditions. • Promotes ease of doing business through unified compliance. • Regulates working hours, leave, and welfare facilities. • Inter-state migrant workers protected with journey allowance and database registration. • Mandatory free health check-ups, safety training, and welfare provisions. • Strengthens employer responsibility for hazardous workplaces. • Rationalized licensing, single registration, and common returns. • Aligns workforce safety with modern industrial standards.

CONCLUSION

Establishment of the new Labour Codes marks a transformative step in India's labour landscape- one that balances the welfare of workers with the efficiency of enterprises. These provisions simplify compliance, promote safety, and ensure fairness in wages. Moreover, these reforms lay the foundation for a more equitable, transparent, and growth-oriented economy. They reaffirm India's commitment to fostering a modern labour ecosystem that empowers both workers and industry, paving the way for inclusive and sustainable progress.

Prelims question:

Q. Consider the following statements regarding India's new Labour Codes:

1. The Code on Wages introduces a universal minimum wage applicable to both organised and unorganised sector workers.
2. The Industrial Relations Code mandates a 14-day notice period before strikes and lockouts.
3. The Code on Social Security, 2020 extends social security benefits to gig and platform workers for the first time.
4. The OSHWC Code provides for single registration and common licensing for establishments.

Which of the statements given above are correct?

(a) 1 and 2 only (b) 1, 2 and 3 only (c) 1, 3 and 4 only (d) 1, 2, 3 and 4

Answer: D

Mains Question:

Q. The Four Labour Codes mark a major reform in India's labour governance framework. Discuss their significance for employment generation, worker welfare, and ease of doing business.

(250 words)

SUPREME COURT STRIKES DOWN TRIBUNAL REFORMS ACT PROVISIONS TO PROTECT JUDICIAL INDEPENDENCE

WHY IN THE NEWS?

In a landmark ruling, the Supreme Court has once again reaffirmed the constitutional principles governing tribunals in India. A Bench of Chief Justice B.R. Gavai and Justice K. Vinod Chandran struck down multiple provisions of the Tribunal Reforms Act, 2021, declaring them unconstitutional for undermining judicial independence and violating the doctrine of separation of powers.

The Court also directed the Centre to establish the long-pending National Tribunal Commission (NTC) within four months, marking a major step toward ensuring autonomy and accountability in the tribunal system.

Background: Tribunal Reforms Act, 2021 – What It Sought to Do

The Tribunal Reforms Act, 2021 aimed to overhaul India's tribunal ecosystem by reorganising existing tribunals, altering appointment processes, and giving the executive a greater role in fixing service conditions.

Key features of the 2021 Act included:

- Minimum age of 50 years for appointment as tribunal member.
- Four-year tenure, with possible extension.
- Search-cum-Selection Committees that included two serving government secretaries, even though these ministries were often litigants before those tribunals.
- Extensive rule-making powers to the Centre regarding tenure, salaries, allowances, and administrative control.
- Reintroduction of several provisions previously struck down in 2021 by the Supreme Court.

SUPREME COURT'S CORE FINDINGS

1. **Violation of Judicial Independence:** The Court held that tribunals perform essential judicial functions and must be free from executive dominance. Executive influence over appointments, tenure, and service conditions compromises impartiality, especially since the government is the largest litigant before tribunals.
2. **Breach of Separation of Powers:** The Court emphasised that Parliament cannot legislatively undo a judicial decision by reintroducing invalidated provisions with cosmetic modifications. Any law affecting the judicial structure must respect constitutional boundaries.
3. **Constitutional Supremacy:** Reiterating judicial review as a basic feature of the Constitution, the Court noted: "The Constitution is what the Court says it is; Parliament cannot merely restate or repackage an invalidated provision." Thus, re-enacting struck-down provisions amounted to a deliberate attempt to circumvent constitutional scrutiny.

PROVISIONS INVALIDATED BY THE SUPREME COURT

The Court struck down provisions of the Act that:

1. Gave the Centre power to fix tenure and impose the minimum age of 50 years.
2. Allowed government secretaries, who may be litigants, to sit on selection committees.
3. Prescribed short, four-year terms, creating insecurity and inhibiting independence.

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4. Delegated excessive rule-making authority to the executive regarding appointments and service conditions.

DIRECTIONS TO ESTABLISH THE NATIONAL TRIBUNAL COMMISSION

In a significant directive, the Court ordered the Union Government to set up the National Tribunal Commission (NTC) within four months.

Mandate of the NTC:

1. Oversee appointments of tribunal members
2. Regulate service conditions
3. Manage administrative and infrastructural requirements
4. Standardise tribunal functioning
5. Ensure transparency and autonomy across the tribunal ecosystem

The Court termed the NTC an "essential structural safeguard" to prevent persistent executive interference.

ISSUES HIGHLIGHTED BY PETITIONERS

Petitioners argued that the 2021 Act:

1. Attempted a "sly revival" of provisions earlier held unconstitutional
2. Enabled executive dominance over bodies adjudicating cases where the Centre is a party
3. Was passed without adequate legislative debate
4. Abolished nine specialised tribunals, burdening already stretched High Courts

The Supreme Court found these arguments credible, highlighting the need for genuine reform rather than superficial legislative changes.

SIGNIFICANCE OF THE JUDGMENT

1. **Strengthens Judicial Independence:** Ensures tribunals function without executive domination, safeguarding impartial adjudication.
2. **Prevents Legislative Overreach:** Reinforces that Parliament cannot re-enact or repackage provisions already struck down by the Court.
3. **Maintains Tribunal Neutrality:** Reduces executive involvement in appointments and service conditions, ensuring fairness for litigants.
4. **Mandates Creation of National Tribunal Commission (NTC):** Provides an institutional mechanism for transparent appointments, uniform service conditions, and improved administration.
5. **Supports Long-Term Institutional Reform:** Lays the groundwork for standardised processes, improved infrastructure, and reduced case backlog across tribunals.
6. **Upholds the Basic Structure Doctrine:** Protects judicial review and separation of powers—foundational principles of India's constitutional framework.

CHALLENGES AHEAD

1. **Complexity in Establishing the NTC:** Setting up the National Tribunal Commission requires extensive inter-ministerial coordination and clear legislative backing.
2. **Administrative and Financial Constraints:** Creating a centralised body like the NTC demands substantial administrative restructuring and dedicated funding.
3. **Higher Burden on High Courts:** With tribunal vacancies and structural transitions, High Courts may face increased caseloads, worsening delays.
4. **Ensuring Compliance Across Governments:** Both Centre and States must uniformly implement the Court's directives, requiring robust monitoring and periodic review.
5. **Need for Harmonisation of Future Laws:** Any future amendments to tribunal laws must align with judicial precedents to avoid fresh constitutional violations.
6. **Maintaining Tribunal Efficiency During Transition:** Until new appointments and

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procedures stabilise, tribunals may face operational disruptions affecting case disposal

CONCLUSION

The Supreme Court's decision marks a decisive moment in India's tribunal jurisprudence. By striking down provisions that undermined tribunal autonomy and directing the establishment of the National Tribunal Commission, the Court has reaffirmed the principles of judicial independence, separation of powers, and constitutional supremacy. The ruling not only prevents executive encroachment but also sets the stage for a more transparent, efficient, and credible tribunal system strengthening the citizen's right to impartial justice and reinforcing the constitutional vision of an independent judiciary.

Prelims question:

Q. Consider the following statements regarding the Supreme Court's judgment on the Tribunal Reforms Act, 2021:

1. The Court struck down provisions allowing government secretaries to be part of the selection committee for tribunal appointments.
2. The Court upheld the minimum age requirement of 50 years for appointment as tribunal members.
3. The Court directed the establishment of a National Tribunal Commission.

Which of the above statements is/are correct?

(a) 1 and 3 only (b) 2 and 3 only

(c) 1 only (d) 1, 2 and 3

Answer: A

Mains Question:

Q. The Supreme Court's recent judgment striking down provisions of the Tribunal Reforms Act, 2021 has reaffirmed judicial independence and constitutional supremacy. Discuss the key aspects of the judgment, the rationale behind it, and its implications for the future of India's tribunal system.

(250 words)

LINGUISTIC INCLUSION IN THE DIGITAL ERA: INDIA'S AI-DRIVEN TRANSFORMATION

WHY IN THE NEWS?

The Government of India is promoting linguistic inclusion in the digital ecosystem by integrating technologies like Artificial Intelligence (AI), Natural Language Processing (NLP), Machine Learning, and speech recognition to support India's 22 Scheduled Languages and hundreds of regional dialects. These efforts aim to ensure that every citizen can access digital services, e-governance platforms, and online resources in their own language, thereby strengthening digital inclusion and participatory governance.



KEY PLATFORMS DRIVING LINGUISTIC INCLUSION

Artificial intelligence–driven language platforms and expansive digital repositories are transforming how India's diverse languages are preserved, used, and evolved in the digital age. Initiatives such as Bhashini and BharatGen are enabling multilingual

communication across governance, education, and healthcare, while innovative efforts like Adi-Vaani are bringing tribal and endangered languages into the mainstream digital ecosystem. Together, these initiatives ensure that India's linguistic heritage is not only safeguarded but also made functional, dynamic, and future-ready.

Over the past decade, rapid advancements in Artificial Intelligence (AI), Natural Language Processing (NLP), and digital infrastructure have revolutionized efforts to document, digitize, and revitalize India's linguistic diversity. These technologies facilitate large-scale language data collection, real-time translation, and speech recognition across hundreds of Indian languages and dialects—many of which were historically underrepresented. This digital transformation is bridging communication divides, promoting inclusive governance, and empowering citizens by making information and public services accessible in their native tongues. In essence, India's multilingual AI ecosystem is reshaping the nation's linguistic landscape, turning diversity into a strength for digital inclusion and equitable growth.

ADI-VAANI: AI FOR TRIBAL LANGUAGE INCLUSION



KEY PLATFORMS DRIVING LINGUISTIC INCLUSION IN INDIA

Platform / Scheme	Year / Implementing Agency	Core Objective	Key Features & Technologies	Languages / Scope	Significance / Impact
Adi-Vaani	Founded in 2024	Real-time translation and preservation of tribal languages	- Uses AI, Speech Recognition, and NLP - Combines AI precision with human linguistic expertise	Santali, Bhili, Mundari, Gondi and other tribal languages	- Preserves oral linguistic traditions - Enables use in education, governance, and cultural documentation
Scheme for Protection and Preservation of Endangered Languages (SPPEL)	Launched in 2013 Ministry of Education; Implemented by CIIL, Mysuru	Documentation and digital archiving of endangered languages (spoken by fewer than 10,000 people)	- Generates text, audio, video datasets - Supports AI & NLP-based language research	Endangered and lesser-known Indian languages	- Provides linguistic data for AI platforms - Strengthens preservation and research capacity
Sanchika	Managed by CIIL, Mysuru	Centralized digital repository for Indian languages	- Aggregates dictionaries, primers, stories, and multimedia resources - Enables AI model training and translation development	Scheduled and tribal languages	- Supports academic research, education, and AI-based innovation - Preserves cultural and linguistic narratives

BharatGen	National initiative leveraging SPPEL and Sanchika data	Develops AI models for multilingual translation and speech systems	- Builds text-to-text and text-to-speech models - Uses large Indian language datasets	All 22 Scheduled Languages	- Powers multilingual apps in governance, education, healthcare - Enhances digital accessibility and inclusivity
GeM & GeMAI	GeM launched in 2016 by Ministry of Commerce & Industry	Streamline public procurement and make it linguistically inclusive	- GeMAI: AI-powered multilingual assistant using NLP & ML - Offers voice & text-based interaction	Multiple Indian languages	- Enables multilingual navigation and transactions on GeM - Overcomes language barriers in government e-marketplace
Bhashini	Under National Language Translation Mission (NLTM)	Real-time AI translation across Indian languages for inclusive governances	- Uses Machine Translation, ASR, and NLU - Provides multilingual digital services	22 Scheduled + tribal languages	

KEY ACHIEVEMENTS



1. Sansad Bhashini: AI-Powered Parliamentary Translation

- Part of the Bhashini platform under the National Language Translation Mission (NLTM).
- Enables real-time AI translation of parliamentary debates and discussions.
- Promotes citizen engagement by making parliamentary proceedings accessible in multiple Indian languages.
- Strengthens transparency and linguistic inclusion in governance and democratic discourse.

2. Tribal Research, Information, Education, Communication and Events (TRI-ECE) Scheme

- Implemented by the Ministry of Tribal Affairs.
- Supports innovative research and documentation to preserve tribal languages and cultures.
- Develops AI-based translation tools that convert English/Hindi text and speech into tribal languages, and vice versa.
- Integrates Machine Learning, Speech Recognition, and NLP for real-time translation and digital preservation.
- Encourages community participation through Tribal Research Institutes and language experts to ensure accuracy and cultural sensitivity.
- Plays a critical role in digital empowerment of tribal communities and revitalization of endangered languages.

3. Digital Archives and Academic Collaboration

- Institutions like the Central Institute of Indian Languages (CIIL) and the Indira Gandhi National Centre for the Arts (IGNCA) collaborate with Bhashini.
- Focus on digitizing ancient manuscripts, folk literature, and oral traditions.
- These digital archives create rich datasets for AI and NLP systems, linking cultural heritage with modern technology.
- Strengthens India's capacity for cultural preservation, AI-driven translation, and academic research.

4. Empowering Education Through AI-Driven Multilingual Platforms

- Artificial Intelligence is transforming education by making learning more inclusive, accessible, and linguistically diverse.
- Aligns with the National Education Policy (NEP) 2020, which promotes education in the mother tongue or regional language up to Grade 5, and preferably till Grade 8 and beyond.
- Ensures that every learner can access knowledge in their native language, improving comprehension and retention.

a. e-KUMBH Portal

- Developed by the All India Council for Technical Education (AICTE).
- Provides free access to technical books and study materials in multiple Indian languages.
- Supports NEP 2020's goal of promoting higher education in regional languages.

b. Anuvadini App

- An indigenous AI-based multilingual translation tool developed by AICTE.
- Translates engineering, medical, law, undergraduate, postgraduate, and skill-development books into Indian languages. Translated content is hosted on the e-KUMBH portal, expanding access to technical education in native tongues.

c. National Translation Mission (NTM)

- Facilitates translation of knowledge texts into Indian languages.
- Promotes linguistic equity and knowledge dissemination across regions.

d. National Mission on Manuscripts (NMM)

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- Works on preserving and digitizing ancient Indian manuscripts.
- Bridges traditional knowledge with modern digital preservation techniques.

e. SWAYAM Platform

- Acts as a digital backbone for multilingual online education.
- As of mid-2025, over 5 crore learners enrolled.
- Government aims to make all school and higher education materials digitally available in Indian languages within three years.

5. Impact on Education and Linguistic Inclusion

- AI-based translation and learning platforms help schools, universities, and ed-tech firms deliver localized educational content.
- Enhances teacher-aid tools, e-learning modules, and comprehension among students.
- Fosters linguistic equity, ensuring no learner is left behind due to language barriers.
- Reinforces India's linguistic diversity while promoting a digitally inclusive knowledge ecosystem.

6. Technology Behind the Transformation

- India's multilingual digital revolution is powered by advanced AI and computational linguistics tools designed for India's linguistic complexity.

KEY TECHNOLOGIES:

Automatic Speech Recognition (ASR): Converts spoken Indian languages into accurate text for transcription and voice-based applications.

- Text-to-Speech (TTS): Generates natural, intelligible speech outputs in native languages.
- Neural Machine Translation (NMT): Provides context-aware, real-time translation between Indian languages.
- Natural Language Understanding (NLU): Enables AI systems to understand intent, meaning, and sentiment in local languages.
- Transformer-based Architectures (IndicBERT, mBART): Pre-trained AI models for accurate translation and understanding.
- Corpus Development and Data Curation: Involves creating large, representative datasets from manuscripts, folklore, and educational texts to train AI models.

CONCLUSION

India's journey toward linguistic inclusion in the digital era is redefining its social and governance fabric. By blending AI innovation with cultural preservation, the country is ensuring that its linguistic plurality becomes a driver of empowerment, not exclusion. Through initiatives like Bhashini, Adi-Vaani, SPPEL, TRI-ECE, and AICTE's e-KUMBH, India is transforming its languages into engines of knowledge, connectivity, and equitable digital growth.

Prelims question:

Q. Which of the following platforms is India's first AI-driven initiative for the real-time translation and preservation of tribal languages?

(a) Bhashini (b) Adi-Vaani
(c) BharatGen (d) Sanchika

Answer: B

Mains Question:

Q. Discuss how Artificial Intelligence and digital language platforms are promoting linguistic inclusion and participatory governance in India. Evaluate their role in preserving India's linguistic heritage while fostering digital empowerment.

(250 words)

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MODEL YOUTH GRAM SABHA: TRANSFORMING CLASSROOMS INTO MICROCOSMS OF DEMOCRACY

WHY IN THE NEWS?

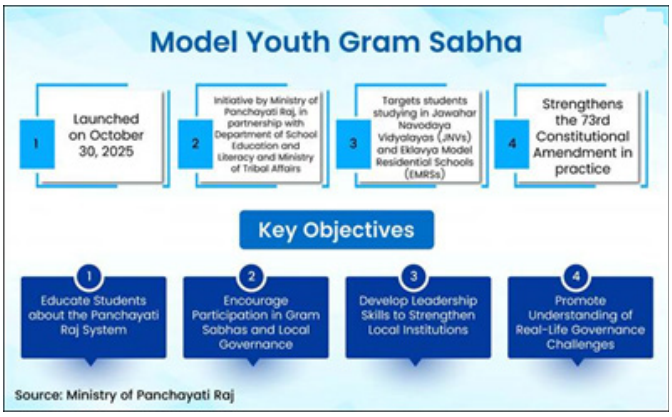
The Government of India has emphasized the need to enhance youth participation in Gram Sabhas to strengthen grassroots democracy and accelerate the vision of Viksit Bharat@2047. With over 6.64 lakh villages forming the backbone of India's democracy, efforts are being made to promote youth awareness, leadership, and engagement in local governance. Initiatives under the Ministry of Panchayati Raj aim to make Gram Sabhas more inclusive, transparent, and participatory by encouraging young citizens to actively contribute to community development and decision-making processes.

WHAT ARE JNVS AND EMRSS?

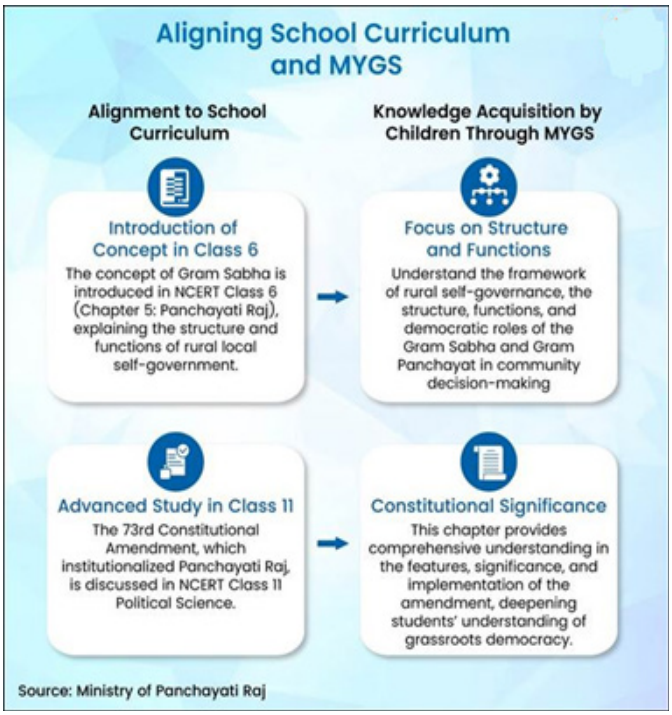
Jawahar Navodaya Vidyalayas (JNVs) are the residential schools established under the National Policy on Education (1986) that aim to bring out the best of rural talent. They are established to provide quality modern education, including cultural, environmental, and physical development, to talented rural children irrespective of their socio-economic background.

Eklavya Model Residential Schools (EMRSs) have been set up to provide quality upper primary, secondary, and senior secondary level education to Scheduled Tribes (ST) students in remote areas to enable them to access the best opportunities in education and to bring them at par with the general population

The 73rd Constitutional Amendment laid the groundwork for a three-tier Panchayati Raj system, empowering governance at the village, block, and district levels. By encouraging young minds to understand and engage with this framework, especially through initiatives like the Model Youth Gram Sabha, the Ministry envisions creating an informed and empowered generation that values democratic participation, constitutional ideals, and collective progress.



The Model Youth Gram Sabha initiative aligns with the National Education Policy (NEP) 2020, which emphasizes nurturing respect for Fundamental Duties, Constitutional values, and a strong sense of national belonging. It aims to prepare youth to be responsible, skilled, and compassionate citizens, fostering pride in being Indian while promoting human rights, sustainability, and global well-being.



OBJECTIVES

The Model Youth Gram Sabha (MYGS) aims to familiarize students with the structure and functioning of Panchayati Raj Institutions (PRIs) through participatory and experiential learning. It focuses on developing essential civic and leadership skills such as public speaking, critical thinking, teamwork, and consensus-building, while

nurturing the values of inclusion, accountability, and transparency. By engaging youth in deliberating real community issues, the initiative seeks to build informed, responsible, and proactive citizens who contribute meaningfully to democratic and developmental processes.

KEY OBJECTIVES:

Educate Students about the Panchayati Raj System: Introduce students to the three-tier Panchayati Raj framework established through the 73rd Constitutional Amendment and its role in local governance.

Encourage Participation: Motivate students to actively engage in Gram Sabhas and grassroots democratic processes.

Develop Leadership Skills: Foster a sense of responsibility, initiative, and leadership among youth to strengthen PRIs.

Promote Understanding of Local Issues: Provide a platform for students to discuss, analyze, and propose solutions to real-life governance and developmental challenges at the grassroots level.

VISION

The vision of the Model Youth Gram Sabha is "to nurture empowered, responsible, and empathetic young citizens who actively participate in democratic processes and contribute to sustainable and inclusive national development."

Core Vision Goals:

Foster active and informed citizenship among youth rooted in constitutional values and democratic principles.

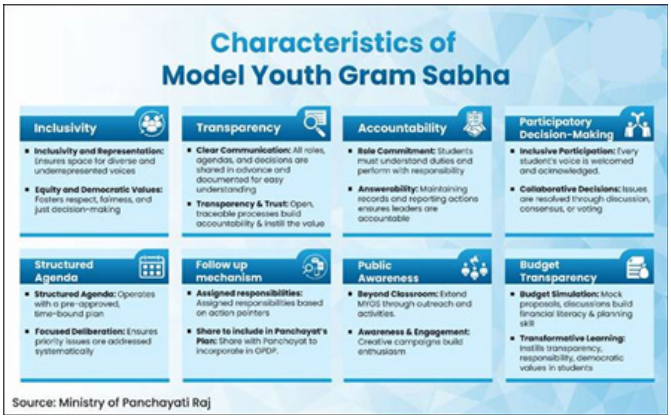
Instil values of inclusivity, consensus-building, justice, and equity, empowering students to become socially responsible individuals.

Develop essential life skills such as leadership, participation, communication, and critical thinking.

Enhance awareness about local governance systems and Localized Sustainable Development Goals (LSDGs).

Empower youth to contribute to national integration, social harmony, and inclusive development through active community engagement.

CHARACTERISTICS OF A MODEL YOUTH GRAM SABHA



CONDUCTING A MODEL GRAM SABHA / GRAM PANCHAYAT MEETING

The Model Gram Sabha activity provides students with a hands-on experience of grassroots democracy by simulating the functioning of a real Gram Sabha or Gram Panchayat meeting.

During the activity, students take on various roles to mirror actual local governance structures. Some are assigned as Sarpanch, Ward Members, or Presidents, while others act as members of Standing Committees, Panchayat functionaries (such as Secretary, Panchayat Development Officer, or Sahayak), and frontline workers (like ASHA, Anganwadi Worker, or Rojgar Sahayak). Additionally, groups of students represent different social and economic segments of the Gram Panchayat, voicing community-specific concerns and suggestions.

MEETING PROCESS:

- **Preparation:** Before the meeting, students prepare by circulating the agenda, issuing notices at least ten days in advance, and ensuring widespread awareness within the school or community.
- **Proceedings:** The meeting begins with introductions by the Sarpanch, followed by presentations on previous resolutions, ongoing works, and new proposals. The agenda includes

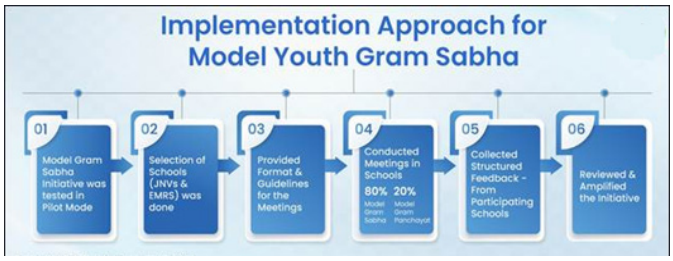
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discussions on developmental priorities, financial planning, and resource mobilization.

- **Financial Deliberations:** Students review the budget, assess available funds, estimate proposed works, and identify funding gaps, brainstorming innovative methods for local revenue generation.
- **Decision-Making:** After debates and discussions, voting takes place on key proposals. The Sarpanch summarizes the resolutions, and the Minute Recorder formally documents the decisions.

IMPLEMENTATION APPROACH

A pilot Model Gram Sabha/Gram Panchayat was conducted in selected JNVs and EMRSs in March-April 2025. A format was provided, covering end to end process of conducting these meetings, along with the structure of Model Gram Sabha/Gram Panchayat. The above structure was also made available in the form of a short video for better understanding.



The Model Youth Gram Sabha and Model Gram Panchayat meetings have been successfully rolled out across schools to promote youth engagement in local governance. Around 80% of the schools organized Model Gram Sabha meetings, while 20% conducted Model Gram Panchayat meetings. Following these sessions, structured feedback was collected from participating schools to assess outcomes and refine the Standard Operating Protocol (SOP) for wider replication and improvement.

The initiative is progressing in a phased and structured manner as per the defined timeline:

July 2025: Identification of participating schools across various regions.

July–August 2025: Orientation programmes were held for 200 master trainers and teachers to prepare them for conducting the Model Gram Sabha activities.

August–September 2025: Mock Gram Sabha sessions were conducted in selected schools, such as Baghpat (Uttar Pradesh) and Alwar (Rajasthan), to provide students with hands-on experience in grassroots governance.

October–November 2025: Regional competitions are being organized across five regions, leading to the selection of ten finalist teams — five from Jawahar Navodaya Vidyalayas (JNVs) and five from Eklavya Model Residential Schools (EMRSs).

December 2025: The initiative will conclude with a National Competition, where the top three teams among the ten finalists will be felicitated for their excellence in demonstrating democratic participation and leadership.

MODEL YOUTH GRAM SABHA (MYGS) MODULE

The Model Youth Gram Sabha Module acts as a comprehensive framework to bring the vision of participatory democracy into practice within schools. It ensures effective, engaging, and high-quality youth-led Gram Sabha implementation by equipping educators and students with structured guidance, facilitation tools, and evaluation mechanisms.

1. **National Level Master Trainer (NLMT) Guide:** Provides a detailed understanding of Gram Sabha processes and clearly defines the roles and responsibilities of facilitators. Integrates the MLJP principles to ensure meaningful and joyful learning.
   - Offers step-by-step facilitation tools to help trainers conduct sessions effectively and interactively.
2. **Facilitation of Training Module for Teachers:** A simplified, pictorial, and user-friendly guide designed to make learning participatory and engaging. Helps teachers introduce students to democracy, leadership, and life skills while preparing them for active MYGS participation. Includes preparation plans and activity checklists to ensure smooth organization and execution of the event.

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3. **Evaluation Framework:** A user-friendly assessment tool to evaluate the effectiveness and impact of MYGS activities. Measures performance through pre-event, during-event, and post-event indicators.Recognizes schools demonstrating innovation and excellence in implementing the MYGS initiative.

EXPECTED OUTCOMES

The following outcomes are envisaged from the initiative, aimed at nurturing democratic values and youth participation in local governance:

- **Promoting Participation:** To encourage students to actively engage in local governance and understand democratic processes at the grassroots level.
- **Fostering Young Leadership:** To inspire youth to take up leadership roles in local bodies and contribute meaningfully to their communities.
- **Empowering Youth Voices:** To provide a platform for students to express their views on local issues, promoting informed discussions and solutions.
- Encouragement for young individuals to actively participate in decision-making processes within their Gram Panchayats.

CONCLUSION

The Model Gram Sabha will play a vital role in shaping the vision and responsibilities of young minds toward participatory governance. By fostering awareness, leadership, and engagement, this initiative aims to bridge the gap between youth and local governance, ensuring that the next generation is well-equipped to contribute to India's democratic and developmental journey.

Prelims question:

Q. With reference to the Model Youth Gram Sabha (MYGS) initiative, consider the following statements:

1. It aims to promote youth participation in Gram Sabhas and Panchayati Raj Institutions through experiential learning.
2. The initiative is being implemented in Jawahar Navodaya Vidyalayas (JNVs) and Eklavya Model Residential Schools (EMRSs).
3. It is implemented under the Ministry of Education.

Which of the statements given above is/are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 only (d) 1, 2 and 3

Answer: A

Mains Question:

Q. Discuss the significance of the Model Youth Gram Sabha initiative in strengthening grassroots democracy and promoting youth engagement in local governance.

(250 words)

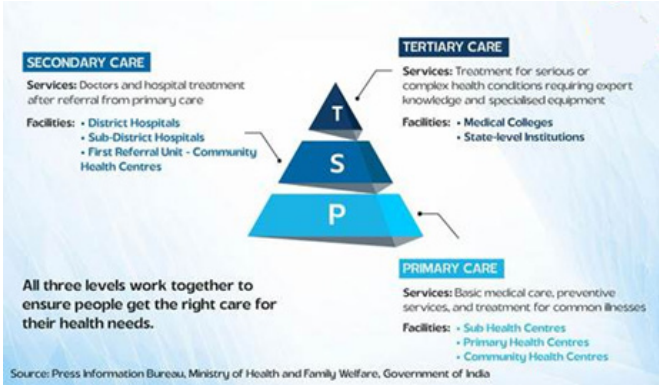
AYUSHMAN BHARAT: ADVANCING UNIVERSAL HEALTH COVERAGE FOR A HEALTHY AND RESILIENT INDIA

WHY IN THE NEWS?

The Government of India has reaffirmed its commitment to achieving Universal Health Coverage (UHC) as part of the Viksit Bharat@2047 vision. Emphasizing that investing in healthcare strengthens community resilience and productivity, the government continues to expand access to affordable, quality healthcare through flagship initiatives like Ayushman Bharat – Pradhan Mantri Jan Aarogya Yojana (AB-PMJAY).

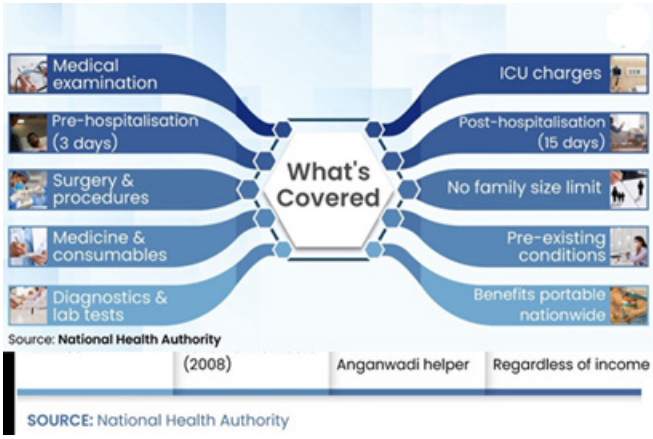
Launched on September 23, 2018, AB-PMJAY has become the world's largest public health insurance scheme, providing cashless treatment to crores of vulnerable families. Guided by the National Health Policy 2017, this renewed focus aims to ensure "Sabka Saath, Sabka Vikas" by bridging healthcare gaps, addressing both communicable and non-

communicable diseases, and moving India closer to its goal of Healthy India, Viksit Bharat.



AYUSHMAN BHARAT - PRADHAN MANTRI JAN AROGYA YOJANA

AB-PMJAY provides healthcare coverage up to Rs. 5 lakhs per year for secondary and tertiary care services and hospitalization to enrolled socio-economically deprived families, saving them from catastrophic medical bills. The scheme provides cashless treatment across empanelled government-funded and private hospitals.



PROGRESS ON AB-PMJAY SCHEME

Since its launch, AB-PMJAY has saved families over Rs. 1.52 lakh crores in out-of-pocket healthcare expenses, according to the latest Economic Survey of India (2024-25). As of Oct. 1, 2025, AB-PMJAY has over 42 crore people enrolled, according to the Ayushman cards created for the scheme's beneficiaries. More than 86.51 lakh senior citizens over 70 years have been provided Ayushman Vay Vandana (VVS) Cards. Over 33,000 hospitals across the country – 17,685 public and 15,380 private – are empaneled under AB-PMJAY.

LAKHS OF PEOPLE AVAILED ALL KINDS OF HEALTHCARE SERVICES UNDER THE SCHEME (AS ON OCT. 28, 2025).

Speciality Name	Total Count (No. of Beneficiaries)	Total Amount (in ₹)
General Medicine	2,17,41,389	1,83,72,55,35,263
Ophthalmology	44,99,544	25,21,85,29,234
Medical Oncology	41,41,188	45,97,11,90,452
Obstetrics & Gynaecology	35,64,071	26,92,15,05,469
General Surgery	33,34,123	51,35,98,83,676
Orthopaedics	24,45,678	81,18,52,82,099
Urology	19,95,470	36,60,39,74,579
Emergency Room Packages (less than 12 hrs stay)	19,76,059	3,09,70,80,136
Cardiology	12,82,206	86,73,06,06,349
Neo-natal Care	11,04,752	23,20,06,53,194

AB-PMJAY BUDGET

The scheme is fully funded by the Government of India and respective state and union-territory governments, both sharing the costs of implementation. The union government's budget estimates have increased over the past few years, with a budget of Rs. 9,406 crore estimated for 2025-26.

Union Budget for AB-PMJAY over the years:

Financial Year	Budget Estimate (₹ in crore)
2019–20	6,556
2020–21	6,429
2021–22	6,401
2022–23	7,857
2023–24	7,200

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2024–25	7,500
2025–26	9,406

AYUSHMAN AROGYA MANDIRS

Ayushman Arogya Mandirs (AAM), the second pillar of Ayushman Bharat, makes primary healthcare more accessible and closer to people's homes. They are envisaged to deliver expanded range services that go beyond maternal and child health care services to include care for non-communicable diseases, palliative and rehabilitative care, oral, eye and ENT care, mental health and first-level care for emergencies and trauma, including free essential drugs and diagnostic services.

AAMs, which include primary and sub-health care centres, are equipped with all the required resources including:

Upgraded infrastructure

Additional human resources

Essential drugs and diagnostics

IT systems, etc.

Teleconsultation services are also available at all operational AAMs across the country, including in rural areas. More than 39.61 crore teleconsultations were conducted at the AAMs (as of Sept. 2025).

AYUSHMAN BHARAT DIGITAL MISSION

ABHA creates unique health identification numbers for people in the healthcare ecosystem. This enables continuity of care across the various levels of healthcare and the availability of services everywhere, including in remote and rural areas.

Progress on the scheme (as of Aug. 5, 2025):

79,91,18,072 ABHAs accounts created

4,18,964 health facilities have been registered on HFR

6,79,692 healthcare professionals have been registered on HPR

67,19,65,690 health records have been linked with ABHA\

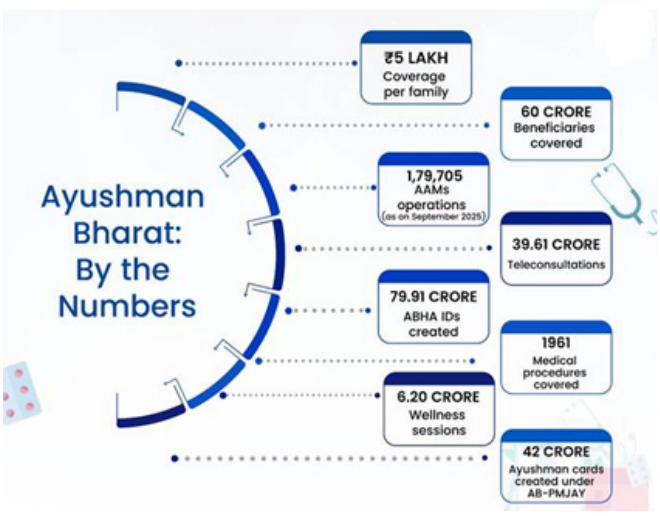
PM–AYUSHMAN BHARAT HEALTH INFRASTRUCTURE MISSION

During COVID-19, the Indian government responded quickly using a whole-of-government approach. The pandemic showed that India's health systems needed better facilities at all levels – from local clinics to major hospitals. To address these gaps, the PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM) was launched on Oct. 25, 2021, as part of the Budget 2021-22.

The main goal of PM-ABHIM is to fix critical gaps in health infrastructure, disease monitoring, and health research across both cities and villages, so India can handle future pandemics independently. It is the largest public health infrastructure scheme in India since 2005, with a total budget of Rs. 64,180 crore for the period 2021-2026. Of this amount, Rs. 54,205 crore is allocated for state-level programs, while Rs. 9,340 crore is for central programs. This is a major 5-year plan to upgrade India's hospitals, clinics, and health research facilities nationwide, making the country better prepared for future health emergencies.

AYUSHMAN BHARAT SCHEME: PERFORMANCE OVERVIEW

Progress on the scheme as of 2025:



Between the fiscal years 2022-23 and 2024-25, states and union territories collectively spent over Rs. 5,000 crore on the development and operation of Ayushman Arogya Mandirs.

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CONCLUSION

AB-PMJAY ensures the vulnerable sections of society get access to quality and affordable healthcare, and the Ayushman Arogya Mandirs bring primary healthcare closer to people's homes. The ABHA (Ayushman Bharat Health Account) scheme provides every citizen with a unique digital health ID to maintain their health records seamlessly across facilities. PM- ABHIM strengthens the underlying healthcare infrastructure—building hospitals, labs, and health centres from village to district level—to ensure the system can deliver quality care and respond to emergencies.

Together, these schemes under Ayushman Bharat and the Ministry of Health and Family Welfare provide affordable, good quality and comprehensive healthcare, ensuring universal health coverage for all.

Prelims question:

Q. Consider the following statements regarding Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (AB-PMJAY):

1. It provides health coverage of up to ₹5 lakh per family per year for secondary and tertiary care hospitalization.
2. The scheme is fully funded by the Central Government only.
3. Beneficiaries can avail of cashless treatment at both public and private empanelled hospitals.

Which of the statements given above is/are correct?

(a) 1 and 3 only (b) 2 and 3 only

(c) 1 only (d) 1, 2 and 3

Answer: A

Mains Question:

Q. Discuss how Ayushman Bharat and its submissions, PMJAY, Ayushman Arogya Mandirs, Ayushman Bharat Digital Mission, and PM-Ayushman Bharat Health Infrastructure Mission collectively contribute to achieving Universal Health Coverage in India.

(250 words)

E-DAR AND IRAD SYSTEMS: A DIGITAL PUSH FOR ROAD SAFETY AND ACCIDENT PREVENTION IN INDIA

WHY IN THE NEWS?

The Ministry of Road Transport and Highways (MoRTH) is set to release black spot data for 2023 and 2024 based on its Electronic Detailed Accident Report (e-DAR) and Integrated Road Accident Database (iRAD) systems. This marks a significant step toward using real-time, digital, and geo-tagged data to curb road accidents and fatalities across India.



BACKGROUND: INDIA'S ROAD SAFETY CHALLENGE

India records one of the highest road accident fatalities globally. According to the Ministry of Road Transport and Highways (MoRTH) Report 2023, over 1.68 lakh deaths and 4.6 lakh accidents were recorded in 2022 alone. Despite continuous awareness campaigns and engineering interventions, the number of "black spots"—critical stretches prone to frequent accidents—remains a major concern.

To strengthen evidence-based interventions, MoRTH initiated the iRAD project and its operational tool, e-DAR, to digitize road accident reporting and

streamline the data collection process from the ground level.

Understanding Black Spots

A black spot on a National Highway (NH) refers to a 500-metre stretch where:

Five or more accidents causing deaths or grievous injuries, or Ten or more fatalities occur within a three-year period.

Under the last assessment (2020–2022), 1,330 critical stretches were identified. Between 2016 and 2022, MoRTH identified 13,795 black spots, out of which long-term rectification has been completed for 5,036.

BLACK SPOTS ON NATIONAL HIGHWAYS

Black-spot series	Identified	Short-term rectification	Long-term rectification
2016-18	5,352	5,305	2,724
2017-19	2,483	2,238	769
2018-20	1,898	1,518	580
2019-21	2,732	1,842	727
2020-22	1,330	612	236
TOTAL	13,795	11,515	5,036

Source: Ministry of Road Transport and Highways

ABOUT THE E-DAR / IRAD SYSTEM

1. **Objective:** To create a real-time, geo-tagged, digital database of road accidents, facilitating precise analysis, accountability, and preventive planning.

2. **Development:** iRAD was developed by the Indian Institute of Technology Madras (IIT Madras) with support from the World Bank. It was rolled out in phases between 2021 and 2022 across Indian states.

3. **How It Works:** When an accident occurs, first responders (police) use a mobile app or tablet to enter details.

- The accident is geo-tagged and uploaded in real time to the national server.
- The data includes parameters like vehicle type, road condition, lighting, weather, injury severity, and victim details.
- The system is integrated with hospital databases, insurance portals, and transport authorities for seamless information sharing.

4. **Integration with e-DAR:** e-DAR acts as an operational layer, capturing detailed information digitally and helping the Transport Research Wing (TRW) of MoRTH validate and analyse data received from state departments.

RECENT DEVELOPMENTS AND DATA INSIGHTS

- The 2023–24 black spot data will be based fully on the e-DAR/iRAD system—first time India will rely on digital data for such mapping.
- Discrepancies between TRW and e-DAR data have dropped to less than 5%, down from much higher levels earlier.
- In 2024, a variance of 18,069 accidents (3.96%) and 7,020 fatalities (4.3%) was recorded between TRW and e-DAR datasets.
- The highest discrepancies were reported from Punjab and Jharkhand, but coordination between the Road Safety Cell, Chief Engineers, and state police is helping bridge data gaps.

SIGNIFICANCE OF THE INITIATIVE

1. **Data Accuracy and Transparency:** Real-time data entry minimizes manual errors and delays. Ensures transparency and traceability in reporting and analysis.

2. **Evidence-Based Policy Making:** Enables MoRTH and state governments to map accident-prone zones precisely, prioritizing funds for road design corrections.

3. **Integration Across Agencies:** Links data across police, transport, hospitals, and insurance for holistic road safety management.

4. **Efficient Black Spot Rectification:** Helps plan engineering interventions like improved signage, lighting, and road geometry corrections based on precise data.

5. **Supports Vision Zero:** Aligns with India's commitment to reduce road fatalities by 50% by

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2030, in line with the UN Decade of Action for Road Safety.

CHALLENGES AND DATA DISCREPANCIES

1. **Variation in State Reporting:** Some states still rely on manual records or inconsistent digital entries, leading to under-reporting (e.g., Punjab's e-DAR data showed only 533 deaths compared to 4,759 reported by TRW).
2. **Capacity and Infrastructure Gaps:** Limited availability of trained personnel and devices in rural areas.
3. **Inter - departmental Coordination:** Synchronization between police, hospitals, and transport departments remains uneven.
4. **Delayed Data Validation:** Physical validation by the TRW slows down final analysis.
5. **Need for Public Data Access:** While the database is comprehensive, public and researcher access remains restricted.

GOVERNMENT EFFORTS TO STRENGTHEN ROAD SAFETY

1. **Engineering Interventions:** Rectification of black spots, installation of crash barriers, and improved road signage.
2. **Education and Awareness:** Road Safety Weeks, mass awareness campaigns, and inclusion of road safety in school curriculum.
3. **Enforcement:** Stricter penalties under the *Motor Vehicles (Amendment) Act, 2019.
4. **Emergency Response:** launch of 112 Emergency Response Support System and integration with hospital networks.
5. **Technology Integration:** GPS-based vehicle tracking, automatic number plate recognition, and digital monitoring of over-speeding and lane violations.

WAY FORWARD

1. **100% Integration of e-DAR Across States:** Ensure all police stations and hospitals use the digital system uniformly.
2. **Data Sharing and Public Dashboards:** Create open, anonymized dashboards for research, policy feedback, and citizen awareness.
3. **Regular Black Spot Audits:** Conduct bi-annual audits to monitor progress in rectification and casualty reduction.
4. **Capacity Building:** Continuous training for police, engineers, and healthcare workers in using the system effectively.
5. **Linking with Smart Mobility:** Integrate e-DAR and iRAD data with Intelligent Transport Systems (ITS) and urban traffic management platforms for proactive prevention.

CONCLUSION

The introduction of e-DAR and iRAD systems marks a crucial technological shift in India's road safety governance. By combining real-time data, geo-tagging, and inter-departmental integration, the initiative has the potential to transform road safety planning from a reactive to a proactive model. To truly realise the goal of "Zero Fatalities, Safe Roads," India must ensure robust implementation, consistent data validation, and transparent dissemination of findings, ensuring that every accident counts not just in statistics, but in saving lives.

Prelims question:

Q. With reference to India's road safety management, consider the following statements:

1. The Integrated Road Accident Database (iRAD) project is implemented by IIT Madras with World Bank support.
2. Under the existing system, a 500-metre highway stretch is designated as a black spot if at least ten accidents occur within a one-year period.
3. The e-DAR platform enables real-time geo-tagged reporting of accidents by police.

Which of the statements given above are correct?

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(a) 1 and 3 only (b) 2 and 3 only

(c) 1 and 2 only (d) 1, 2, and 3

Answer: A

Mains Question:

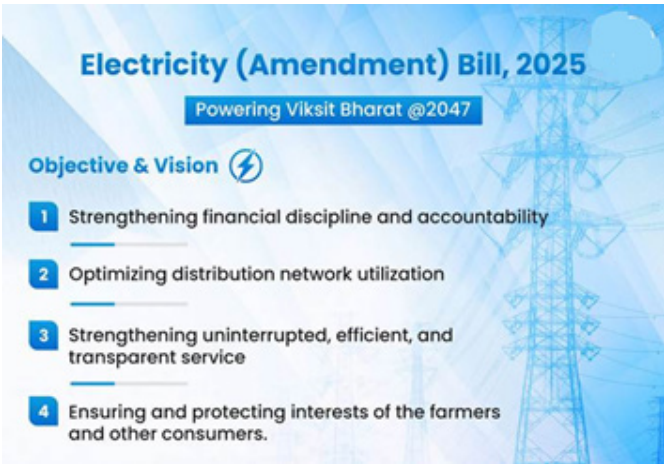
Q. Discuss how the e-DAR and iRAD systems can transform India's road safety ecosystem. Examine the challenges in implementation and suggest measures to ensure real-time, accurate, and integrated accident reporting

(250 words)

REWIRING INDIA'S POWER SECTOR: THE ELECTRICITY (AMENDMENT) BILL, 2025

WHY IN THE NEWS?

The Electricity (Amendment) Bill, 2025 has recently gained national attention as the government introduced it to modernize and reform India's power sector. The Bill marks a significant shift from the traditional monopoly-based electricity supply model to a competitive, performance-driven framework. It aims to ensure reliable, affordable, and high-quality power for all consumers—rural and urban households, farmers, shops, and industries—while promoting transparency, accountability, and efficient use of existing infrastructure. The proposed amendments are expected to strengthen consumer rights, encourage private participation, and create a future-ready electricity ecosystem aligned with India's growing economic needs.



CORRECTING THE CURRENT: THE PUSH BEHIND THE ELECTRICITY (AMENDMENT) BILL, 2025

The Electricity (Amendment) Bill, 2025 was introduced to address long-standing structural challenges in India's power distribution segment. The Bill seeks to reduce inefficiencies, ease the financial distress of distribution companies (discoms), foster competition, ensure cost-optimised network use, and enhance consumer choice. These reforms are intended to create a more competitive, transparent, and financially sustainable power sector.

KEY ISSUES DRIVING THE AMENDMENT

1. **Chronic financial losses of discoms:** Persistent deficits due to poor billing efficiency, high Aggregate Technical & Commercial (AT&C) losses, and outdated infrastructure have weakened discom viability across several states. Many utilities struggle to pay generators on time, affecting the entire power value chain.

2. **Lack of competition in electricity supply:** Consumers, especially industrial ones, are tied to a single discom, limiting service quality and innovation. The absence of competitive supply options has kept tariffs high and efficiency low.

3. **Distortions due to cross-subsidisation:** Industrial and commercial users pay inflated tariffs to subsidise agricultural and domestic consumers.

This has: increased the cost of manufacturing, reduced global competitiveness, and discouraged industrial investment in energy-intensive sectors.

The ISTS Model: Efficient, Fair, and Reliable

India already operates a highly successful Inter-State Transmission System (ISTS), which serves as a model for competitive efficiency and cooperative infrastructure use. The ISTS is built on the principle of shared transmission networks, where both public and private Transmission Service Providers (TSPs)—including Powergrid, a Central Public Sector Undertaking—participate in creating and operating assets.

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Under the regulatory oversight of the Central Electricity Regulatory Commission (CERC), TSPs compete for developing ISTS projects, leading to lower capital costs, reduced construction timelines, and improved project execution standards. Importantly, users of the ISTS pay monthly charges that are pooled and fairly redistributed among TSPs based on their respective assets and performance. This transparent settlement system ensures that:

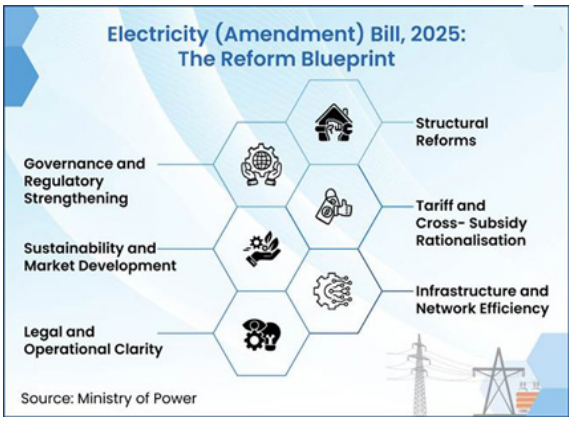
1. No TSP is disadvantaged,
2. Cost recovery is stable and predictable, and
3. System reliability remains consistently high across the national transmission grid.

The ISTS model has emerged as a benchmark for efficient infrastructure development and fair cost-sharing, providing a template for reforms in the distribution sector as envisaged under the Electricity (Amendment) Bill, 2025.

Powering Reform: Core Pillars of the Bill

The Electricity (Amendment) Bill, 2025, sets the stage for a more efficient, environmentally and financially sustainable, transparent, and consumer-focused power sector. It blends structural reforms with regulatory clarity to modernise electricity distribution across India. By aligning policy with evolving needs, the Bill aims to deliver quality service, financial discipline, and sustainable growth.

The Bill promotes fair competition between government and private distribution companies in electricity supply, overseen by State Electricity Regulatory Commissions (SERCs). This approach is expected to enhance service quality, boost operational efficiency, and offer electricity supply to the industrial sector at a reasonable cost. By shifting from a monopoly-based supply to performance-driven delivery, it fosters a more accountable and consumer-oriented power sector, while protecting the interests of the farmers and other consumers.



ELECTRICITY (AMENDMENT) BILL, 2025

Reform Area	Key Provisions
1. Structural Reforms	• Enables regulated competition in electricity distribution by allowing multiple licensees in the same area using shared infrastructure. • Mandates Universal Service Obligation (USO) for all licensees to ensure non-discriminatory access and supply to consumers. • Allows SERCs, in consultation with State Governments, to exempt distribution licensees from USO for large Open Access consumers (>1 MW).
2. Tariff & Cross-Subsidy Rationalisation	• Promotes cost-reflective tariffs. • Protects subsidised consumer categories (farmers, poor households) via transparent, budgeted subsidies under Section 65. • Eliminates cross-subsidy for Manufacturing Industry, Railways, Metro Rail within five years.
3. Infrastructure & Network Efficiency	• Empowers Appropriate Commissions to regulate wheeling charges and prevent duplication of networks. • Introduces provisions for Energy Storage Systems (ESS) and defines their functions in the electricity value chain.

4. Governance & Regulatory Strengthening	• Establishes an Electricity Council for Centre-State coordination, policy harmonisation, and dispute resolution. • Strengthens SERC's powers to enforce standards, impose penalties for violations, and undertake suo motu tariff determination when applications are delayed.
5. Sustainability & Market Development	• Enhances non-fossil energy procurement obligations with penalties for non-compliance. • Supports development of power markets, including new financial/trading instruments and market platforms.
6. Legal & Operational Clarity	• Updates definitions and statutory references (e.g., Companies Act, 2013). • Provides detailed provisions for Electric Line Authority, covering compensation, dispute resolution, and coordination with local bodies. • Grants Electric Line Authority powers similar to the Telegraph Authority under the Indian Telegraph Act, 1885.

CONCLUSION

The Electricity (Amendment) Bill, 2025, introduces key reforms to modernise India's power sector. It promotes competition in distribution, strengthens regulatory oversight, and supports fair pricing mechanisms. The Bill safeguards subsidies for vulnerable consumers while enabling direct power access for industries. Together, these measures aim to build a more efficient, accountable, and future-ready electricity system aligned with national development priorities.

Prelims question:

Q. Consider the following statements about the Inter-State Transmission System (ISTS):

1. Both public and private Transmission Service Providers (TSPs) can participate in ISTS development.
2. ISTS charges are pooled and redistributed among TSPs based on asset performance.
3. ISTS is regulated by the State Electricity Regulatory Commissions (SERCs).

Which of the statements given above are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2 and 3

Answer: A

Mains Question:

Q. The Electricity (Amendment) Bill, 2025 marks a decisive transition from monopoly to regulated competition in India's power distribution sector." Discuss how the Bill aims to reform distribution, rationalise tariffs, and strengthen consumer rights

(250 words)

MODERNISING MEDIA GOVERNANCE: NATIONAL PRESS DAY AND KEY INSTITUTIONAL REFORMS

WHY IN THE NEWS?

On November 16, India celebrates National Press Day, honouring the essential role of a free and responsible press in our society. The media is often referred to as the fourth pillar of democracy, playing a crucial role in shaping public opinion, driving development, and holding power to account. As a powerful tool for progress, it is essential that the press remains free from bias and upholds its duty to inform and educate the masses. For years, the media has been at the forefront, safeguarding the interests of millions and fostering transparency.

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CELEBRATING EXCELLENCE: AWARDS AND SOUVENIR

National Press Day is marked by the National Awards for Excellence in Journalism, which honour exemplary contributions in various fields of reporting. The prestigious Raja Ram Mohan Roy Award is the highest recognition presented on this occasion.

A commemorative Souvenir, featuring goodwill messages, expert articles, and profiles of awardees, is also released, reflecting both achievements and challenges in the media sector.

Strengthening Media Governance: Institutions and Reforms

India's media governance framework is anchored in robust statutory bodies, modernised regulations, technological reforms, and welfare initiatives. Together, these mechanisms aim to uphold press freedom while promoting responsible journalism.

Press Registrar General of India (PRGI)

Originally established as the Registrar of Newspapers for India (RNI) in 1956, the body has been restructured under the Press and Registration of Periodicals Act, 2023 (PRP Act) and renamed PRGI. It oversees periodical registration and ensures a streamlined regulatory environment for print publications.

The PRGI's roots lie in the recommendations of the First Press Commission, which recognised the crucial role of newspapers during the freedom struggle and their continuing importance in nurturing democracy.

Recent Initiatives

- **2023:** Report on fair representation of the LGBTQ+ community.
- **2023:** Guidelines for reporting natural disasters, emphasising sensitivity and accuracy.

Continuous updates to the Norms of Journalistic Conduct, which form the ethical code for print media.

International collaboration through MoUs with press councils in Indonesia, Nepal, Bangladesh, and Sri Lanka.



Internship programmes (SIP/WIP) to train future journalists and promote awareness on press independence.

Under Section 14, the PCI may warn, admonish, or censure media houses found violating ethical norms.

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MODERNISING MEDIA REGULATION: PRP ACT, 2023 & PRESS SEWA PORTAL

The Press and Registration of Periodicals Act, 2023 replaces the colonial Press and Registration of Books Act, 1867, marking a major reform in print media regulation. Implemented from 1 March 2024, the Act brings:

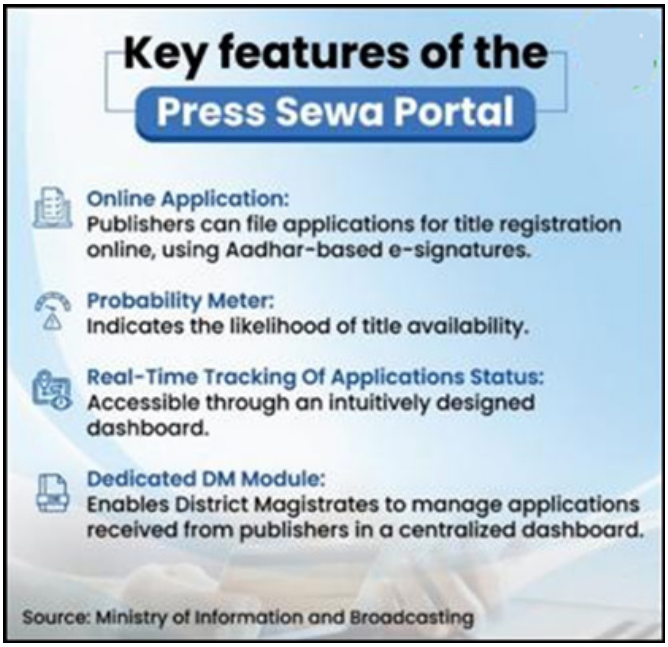
Key Features

1. Fully online system for title allotment and registration
2. Elimination of physical interfaces and reduced compliance burden
3. Decriminalisation of procedural lapses
4. Transparent and integrated workflows
5. Renaming of RNI as PRGI

The Press Sewa Portal operationalises these changes with end-to-end automation:

Digital Transformation Highlights

1. Over 40,000 publishers onboarded
2. 37,000 annual statements filed
3. 3,000 printing presses registered within 6 months
4. QR-coded digital certificates
5. Direct Payment Gateway and e-sign facilities



6. Real-time tracking and chatbot-based grievance redressal

This marks a significant step toward a technology-driven, accountable, and efficient media regulatory ecosystem.

CAPACITY BUILDING: INDIAN INSTITUTEOFMASSCOMMUNICATION (IIMC)

Established in 1965 with UNESCO support, the IIMC has evolved into a premier institute for media education and training. It offers PG Diploma programmes, specialised short-term courses, and international journalism training.

Important milestones include:

1. Launch of the Journalism Programme for Developing Countries (1969)
2. Regional expansion across Jammu, Amravati, Aizawl, Kottayam, and Dhenkanal
3. MoU with SLBSRSV (2017) for Sanskrit Journalism
4. Training of over 15,000 media professionals across 700+ courses
5. Recognition as a Deemed-to-be University in 2024, enabling degree and doctoral programmes

SUPPORTING JOURNALISTS: WELFARE AND LABOUR LAWS

Journalist Welfare Scheme (JWS)

Revised in 2019, it provides:

- Up to ₹5 lakh for death or permanent disability
- Up to ₹3 lakh for treatment of major ailments
- Up to ₹2 lakh for accident-related treatment
- Working Journalists Act, 1955

Regulates:

- Working conditions
- Leave entitlements
- Wage fixation through Wage Boards

EPF & ESI Benefits

- EPF Act applies to newspaper establishments since 1956

- Extended to private electronic media in 2007
- Media personnel earning up to ₹21,000/month are eligible for ESI benefits
- These frameworks ensure labour rights and social security for media professionals.

CONCLUSION

National Press Day underscores the indispensable role of a free, fair, and responsible press in safeguarding India's democratic ethos. As the fourth pillar of democracy, the media not only informs citizens but also ensures transparency, accountability, and social awareness. Recent reforms—such as the PRP Act 2023, the Press Sewa Portal, and the strengthening of institutions like the PCI, PRGI, and IIMC—reflect India's commitment to modernising media governance while upholding ethical standards. Welfare measures further protect journalists' rights and well-being, acknowledging their contribution to nation-building. Going forward, continuous capacity-building, digital adaptation, and ethical, inclusive journalism will remain essential to preserving the credibility and vitality of India's media landscape.

Prelims question:

Q. With reference to media governance in India, consider the following statements:

1. The Press and Registration of Periodicals (PRP) Act, 2023 replaces the Press and Registration of Books Act, 1867.
2. The Press Registrar General of India (PRGI) was earlier known as the Registrar of Newspapers for India (RNI).
3. The National Awards for Excellence in Journalism are presented by the Indian Institute of Mass Communication (IIMC).
4. The Journalist Welfare Scheme (JWS) provides financial assistance to journalists in cases of death, disability, and major illnesses.

How many of the above statements are correct?

(a) Only one (b) Only two
(c) Only three (d) All four

Answer: C

Mains Question:

Q. National Press Day highlights the importance of a free and responsible media in a democratic society. Discuss the evolution of India's media governance framework, recent regulatory reforms, and welfare measures for journalists.

(250 words)

DPDP ACT IMPLEMENTATION: ENSURING READINESS, RESILIENCE, AND RIGHTS PROTECTION

WHY IN THE NEWS?

The notification of the Digital Personal Data Protection (DPDP) Rules, 2025, on 14 November 2025 marks the complete operationalisation of the Digital Personal Data Protection Act, 2023—India's first comprehensive law dedicated exclusively to personal data governance. Together, the Act and the Rules create a citizen-centric, innovation-friendly, and globally aligned data protection regime. Developed through one of India's most extensive consultative processes—receiving 6,915 inputs from startups, MSMEs, civil society, academia, and citizens—the framework reflects an inclusive, transparent, and practical approach to safeguarding digital personal data.

UNDERSTANDING THE DPDP ACT, 2023: A SARAL FRAMEWORK

The DPDP Act, enacted on 11 August 2023, provides a Simple, Accessible, Rational, Actionable and Limited (SARAL) regulatory architecture for personal data protection. Unlike overly complex global models, India adopts a plain-language, illustration-based format to ensure clarity for both large companies and small organisations.

Key Definitions

1. **Data Principal:** The individual whose data is being processed (includes parents/guardians

for children and certain persons with disabilities).

2. **Data Fiduciary:** Entity determining purpose and means of processing.
3. **Data Processor:** Entity processing data on behalf of the fiduciary.
4. **Consent Manager:** An Interoperable, digital platform for managing consent.
5. **Appellate Tribunal:** TDSAT for appeals against Data Protection Board decisions.

Seven Core Principles

1. Consent and Transparency
2. Purpose Limitation
3. Data Minimisation
4. Data Accuracy
5. Storage Limitation
6. Security Safeguards
7. Accountability of Fiduciaries

ROLE OF THE DATA PROTECTION BOARD OF INDIA

The Act creates an independent Data Protection Board (DPB) responsible for:

1. Monitoring compliance
2. Investigating data breaches
3. Imposing penalties
4. Ensuring corrective actions

This Board is central to building trust between citizens and the data ecosystem.

PENALTIES FOR NON-COMPLIANCE

1. The DPDP Act imposes some of the strongest penalties in Indian digital law:
2. Up to ₹250 crore for failing to maintain reasonable security safeguards
3. Up to ₹200 crore for failing to notify breaches or violating children's data obligations
4. Up to ₹50 crore for other violations

These penalties promote accountability and discourage negligence.

PENALTIES AND ENFORCEMENT ARCHITECTURE

A major strength of the Act is its strong penalty framework, aimed at ensuring compliance:

1. Up to ₹250 crore for failure to maintain reasonable security safeguards.
2. Up to ₹200 crore for breach-reporting failures and violations related to children's data.
3. Up to ₹50 crore for other violations.

The Data Protection Board of India, an independent digital-first body, is responsible for:

1. conducting inquiries,
2. issuing directions,
3. imposing penalties,
4. Ensuring grievance redressal.

This robust enforcement mechanism enhances trust across India's digital economy.

DIGITAL PERSONAL DATA PROTECTION RULES, 2025: KEY PROVISIONS

Section	Key Provisions
1. Phased and Practical Implementation	• 18-month transition period for organisations to comply. • Ensures smooth compliance and reduces business disruption. • Encourages early adoption of responsible data practices. • Mandatory standalone consent notice specifying purpose. • Consent Managers must be India-incorporated companies for accountability.

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2. Clear Protocols for Personal Data Breach Notifications	• Affected individuals must be informed without delay. • Notice must be in simple, plain language. • Communication must include: what happened, consequences, steps taken. • Contact details for assistance must be shared. • Ensures transparency and reduces possible harm.
3. Strengthened Transparency and Accountability Measures	**For all Data Fiduciaries:** • Display clear contact information for data queries.For Significant Data Fiduciaries (SDFs): • Conduct independent audits. • Perform DPIAs (Data Protection Impact Assessments). • Implement advanced security safeguards. • Follow government directions including possible local storage for restricted categories. • Ensures high-risk entities meet stricter standards.
4. Reinforcing Rights of Data Principals	• Right to access personal data. • Right to request correction or updating. • Right to seek erasure under specified conditions. • Right to nominate another person to exercise rights. • Mandatory response within 90 days. • Creates a citizen-centric, responsive ecosystem.
5. Digital-First Data Protection Board	• Fully digital Board with 4 members. • Online complaint filing system. • Case tracking via portal and mobile app. • Faster, transparent case resolution. • Appeals heard by TDSAT. • Enhances accessibility and efficiency in enforcement.

BALANCING PRIVACY WITH TRANSPARENCY: DPDP AND RTI ACT

The DPDP Act amends Section 8(1)(j) of the RTI Act to bring it in line with the Puttaswamy judgment that recognised privacy as a fundamental right.

Key Points

1. Personal information can still be disclosed under RTI, but only after balancing privacy against public interest.
2. Section 8(2) remains intact, allowing disclosure in cases where public interest outweighs harm.
3. The amendment reduces ambiguity and aligns RsTI decisions with decades of judicial practice.

HOW THE DPDP FRAMEWORK EMPOWERS CITIZENS

The Act and Rules:

1. Give individuals control over their personal data,
2. Ensure timely redressal,
3. Require clear communication,
4. Reduce misuse and unauthorized sharing of data,
5. Promote ethical digital practices,
6. Build trust in digital public infrastructure.

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CHALLENGES

1. **MSME Preparedness and Compliance Burden:** Micro and small enterprises may face difficulty adopting new data governance systems, hiring compliance experts, and upgrading security infrastructure within the mandated timelines.
2. **Over-Reliance on Consent Framework:** Excessive dependence on consent may not effectively protect individuals in a complex digital ecosystem, especially where users lack awareness of implications or face consent fatigue.
3. **Limited Domestic Cybersecurity Capacity:** India's cybersecurity workforce, tools, and indigenous technologies are still evolving. This gap increases vulnerability to breaches and raises compliance challenges for organisations.
4. **Low Levels of Digital Literacy:** Many citizens have limited understanding of data rights, online safety, and personal data misuse. This reduces the effectiveness of rights-based data protection mechanisms.
5. **Risk of Bureaucratic Overreach:** Ambiguous interpretations of the Act or Rules by authorities could lead to unnecessary compliance burdens, delays, or restrictive enforcement impacting innovation.
6. **Data Localisation and Infrastructure Limitations:** If certain data categories require local storage, India will need adequate secure storage infrastructure, which may be expensive for smaller firms.

WAY FORWARD

1. **Targeted Capacity-Building for MSMEs:** Government and industry bodies should offer toolkits, training modules, subsidised audits, and simplified compliance templates to support small businesses.
2. **Adoption of AI-Driven Compliance Systems:** Automated tools for consent management, breach detection, and data governance can reduce manual workload and improve accuracy, especially for startups and MSMEs.
3. **Nationwide Cyber Awareness and Data Literacy Campaigns:** Digital literacy initiatives should focus on safe data practices, understanding rights, avoiding scams, and effective use of consent tools, especially in rural and semi-urban areas.
4. **Global Alignment and Interoperability:** Ensuring interoperability with global data flow standards (like GDPR, APEC CBPR) will facilitate cross-border digital trade and ease of doing business for Indian firms.
5. **Strengthening Grievance Redressal and Board Capacity:** The Data Protection Board should be equipped with skilled personnel, fast-track digital systems, and transparent procedures to ensure timely and fair resolution.
6. **Encouraging Privacy-by-Design and Secure Tech Innovation:** Policies should promote encryption, privacy-enhancing technologies, secure coding practices, and innovation sandboxes to build a strong domestic cybersecurity ecosystem.

CONCLUSION

The DPDP Act and Rules mark a pivotal transformation in India's digital governance. By combining privacy protection, citizen empowerment, technological neutrality, and business practicality, India has created a model that is uniquely suited to its rapidly expanding digital ecosystem. This framework enhances trust, ensures responsible data use, enables innovation, and aligns India with global best practices. As the rules roll out in phases, they will strengthen India's identity as a secure, transparent, and future-ready digital nation one where individuals' rights form the foundation of economic and technological progress.

Prelims question:

Q. With reference to the Digital Personal Data Protection (DPDP) Act, 2023 and DPDP Rules, 2025, consider the following statements:

1. The DPDP Rules mandate that all Consent Managers must be companies incorporated in India.

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2. Significant Data Fiduciaries are required to conduct Data Protection Impact Assessments (DPIAs).
3. Under the DPDP framework, a Data Fiduciary must respond to requests for correction, update or erasure within 30 days.
4. The DPDP Act designates the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) as the appellate authority.

How many of the above statements are correct?

(a) Only one (b) Only two

(c) Only three (d) All four

Answer: C

Mains Question:

Q. The Digital Personal Data Protection Act, 2023, along with the DPDP Rules, 2025, marks a major shift in India's digital governance architecture. Discuss how the framework strengthens individual rights, enhances organisational accountability, and balances privacy with innovation. Also examine the key challenges in its implementation and suggest a way forward

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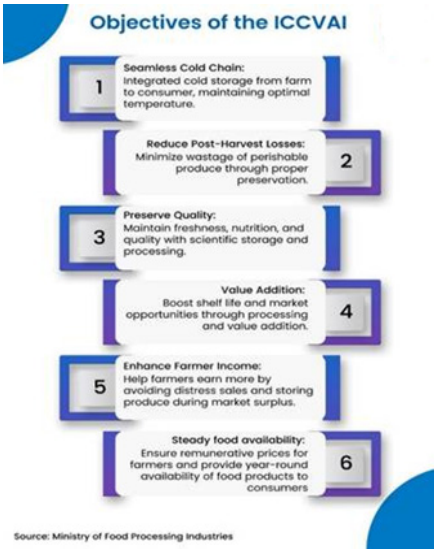


INTEGRATED COLD CHAIN AND VALUE ADDITION INFRASTRUCTURE (ICCVAI)

WHY IN THE NEWS?

The Ministry of Food Processing Industries (MoFPI) has highlighted the significant impact of the Integrated Cold Chain and Value Addition Infrastructure Scheme under the Pradhan Mantri Kisan Sampada Yojana (PMKSY) in reducing post-harvest losses of perishable commodities. The scheme has successfully established modern cold chain infrastructure, linking farmers to markets and processors, thereby minimizing wastage, improving farmers' income, generating rural employment, and ensuring better availability of perishable products. Recent progress reports show enhanced capacity creation in cold storage, reefer transport, and value addition facilities across India, marking a major step toward strengthening India's agri-logistics and food processing ecosystem.

OBJECTIVES OF THE ICCVAI

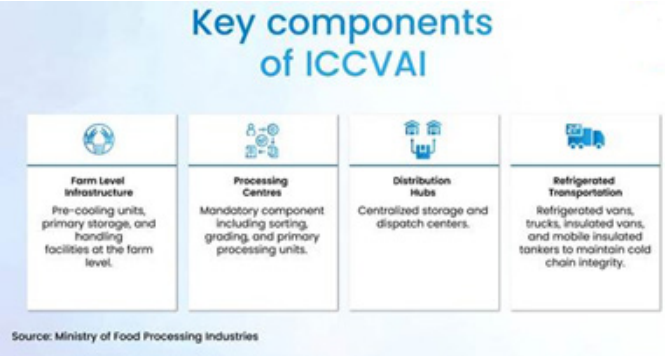


The founding objectives of the scheme were clearly defined to ensure the holistic development of cold chain infrastructure:

KEY COMPONENTS OF ICCVAI

The scheme supports the creation of facilities across the supply chain, often emphasizing infrastructure at the farm level. For an applicant to receive financial assistance under the general cold chain scheme (as per 22.05.2025 guidelines), they must set up Farm Level Infrastructure (FLI) and connect it with either a Distribution Hub (DH) and/or refrigerated/insulated transport.

Its key components include:



ELIGIBILITY OF PIA TO ESTABLISH FOOD PROCESSING UNIT

ICCVAI is a demand driven scheme. Various eligible entities (Project Implementing Agencies – PIAs can establish the food processing units. PIA can be anyone from the following:

Individuals (including farmers).

Entity/Organization such as Farmer Producer Organizations (FPOs), Farmer Producer Companies (FPCs), Non-Governmental Organizations (NGOs), Public Sector Undertakings (PSUs), Firms,

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Companies, Corporations, Cooperatives, and Self-Help Groups (SHGs).

Ministry invites applications/proposals from eligible entities through floating Expressions of Interest (EOIs) based on the availability of funds. Obtaining consent from the States for the storage of food commodities is not mandatory; however, their assistance is required in establishing the food processing units.

KEY GOVERNMENT INITIATIVES COMPLEMENTING THE ICCVAI SCHEME

Scheme / Initiative	Implementing Agency / Ministry	Key Objectives	Assistance	Coverage / Target Areas
Mission for Integrated Development of Horticulture (MIDH)	Ministry of Agriculture & Farmers' Welfare	Promote holistic development of horticulture and strengthen cold chain infrastructure	• Credit-linked back-ended subsidy for cold storages up to 5,000 MT • 35% subsidy in general areas • 50% in NE, hilly, and scheduled areas	All States & UTs through State Horticulture Missions
Operation Greens Scheme	Ministry of Food Processing Industries (MoFPI) under PM Kisan SAMPADA Yojana	Enhance value realisation for farmers and reduce post-harvest losses	• Support for integrated value chain development • Initially covered Tomato, Onion, Potato (TOP) • Later expanded to other fruits, vegetables & shrimp	Nationwide coverage; focus on perishables
National Horticulture Board (NHB) – Capital Investment Subsidy Scheme	National Horticulture Board (NHB)	Promote scientific storage and reduce post-harvest losses in horticulture	• Credit-linked back-ended subsidy for cold storages (5,000–20,000 MT) • 35% subsidy in general areas • 50% in NE, hilly, and scheduled areas	Nationwide; focus on horticultural products
Agriculture Infrastructure Fund (AIF)	Department of Agriculture & Farmers' Welfare	Strengthen post-harvest management and agri-infrastructure	• Corpus of ₹1 lakh crore • Collateral-free term loans up to ₹2 crore • 3% interest subvention per annum	All States & UTs; supports cold storages, warehouses, processing units

FINANCIAL ASSISTANCE

Enhanced Budgetary Allocation under PMKSY (2025)

The Union Cabinet in July 2025 approved an additional outlay of₹1,920 crore for the PMKSY, raising the total allocation to ₹6,520 crore for the 15th Finance Commission cycle (up to March 31, 2026). This approval includes Rs. 1000 crore to support the setting up of 50 Multi-Product Food Irradiation Units

under the component scheme-Integrated Cold Chain and Value Addition Infrastructure (ICCVAI). This significant increase reflects the government's strong commitment to expand the impact of cold chain infrastructure.

The scheme provides grants or subsidies to set up integrated cold chain projects covering 35% of the eligible project cost in general areas and 50% in difficult areas, as well as for proposals from SC/ST groups, FPOs, and SHGs. Difficult Areas include North-Eastern States (including Sikkim), Uttarakhand, Himachal Pradesh, Jammu & Kashmir, Ladakh, Integrated Tribal Development Programme (ITDP) areas, and Islands. Each project can receive up to ₹10 crore in financial assistance.

ACHIEVEMENTS AND PROGRESS

As of June 2025, a total of 395 integrated cold chain projects have been approved under the Cold Chain Scheme since its launch in 2008. Out of these, 291 projects have been completed and are operational, creating a preservation capacity of 25.52 lakh metric tonnes (LMT) per year and a processing capacity of 114.66 LMT per year. The completed and operationalised projects have contributed to the generation of 1,74,600 jobs across the country.



Substantial progress became evident after 2016–17. Since 2016-17, an amount of ₹1535.63 crore has been released against approved grants-in-aid / subsidy of ₹2066.33 crore for implementing 269 approved projects with 169 cold chain projects have been completed and operationalised across the country.

MAJOR REVISION AND POLICY UPDATES

The scheme has undergone several revisions to enhance its effectiveness and align with emerging needs:

June 2022 Revision: A significant policy change was implemented on June 08, 2022 when the scheme discontinued support for cold chain projects in the fruits and vegetables sector. Moreover, the sector was shifted to the Operation Greens Scheme which is another component of PMKSY specifically designed to address price stabilization measures in the horticulture sector. Therefore, this strategic reallocation allowed for specialized focus and optimized resource utilization.

August 2024 Guidelines: Operational scheme guidelines were issued on August 06, 2024 for setting up multi-product food irradiation units (use of ionizing radiation to preserve food, extend shelf life, and reduce post-harvest losses for various products) under the cold chain scheme. Therefore, this addition reflects the incorporation of modern preservation technologies that extend shelf life and ensure food safety without compromising nutritional quality.

May 2025 Revision: The latest operational guidelines, released on May 22, 2025, focus on strengthening preservation and value-addition infrastructure across the entire supply chain, from the farm gate to the consumer. These measures aim to minimize post-harvest losses of non-horticulture produce, while also ensuring farmers receive fair and remunerative prices and consumers benefit from the year-round availability of food products.

CONCLUSION

The evolution of the scheme demonstrates adaptive governance. The 2022 sectoral realignment, transferring fruits and vegetables to Operation Greens, reflects strategic specialization. The 2025

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budget increase to ₹6,520 crore underscores the government's focus on strengthening and expanding the impact of cold chain infrastructure. The introduction of irradiation facilities and regular guideline revisions shows responsiveness to technological advancements and ground-level requirements.

The scheme's financial framework ensures that cold chain development remains economically feasible for a wide range of stakeholders, from individual farmers to large corporate entities. It aims to ensure that projects are implemented in response to actual market needs. Furthermore, the scheme holds significant potential. Integrating modern technologies such as IoT-based monitoring, energy-efficient systems, and AI-driven logistics optimization can greatly enhance operational efficiency. Strengthening linkages with agricultural marketing reforms can further amplify benefits for farmers.

Prelims question:

Q. With reference to the Integrated Cold Chain and Value Addition Infrastructure (ICCVAI) Scheme, consider the following statements:

1. The scheme provides financial assistance only to government agencies for establishing cold chain projects.
2. It supports farm-level infrastructure, distribution hubs, and refrigerated transport facilities.
3. Fruits and vegetables are now supported under the Operation Greens Scheme instead of ICCVAI.

Which of the statements given above are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2 and 3

Answer: B

Mains Question:

Q. Discuss the significance of the Integrated Cold Chain and Value Addition Infrastructure (ICCVAI) Scheme under PMKSY in addressing post-harvest losses in India. Highlight the recent policy updates, achievements, and the way forward for building a sustainable cold chain ecosystem.

(250 words)

FROM LEARNING TO EARNING: EMPOWERING FARMERS THROUGH SKILL DEVELOPMENT

WHY IN THE NEWS?

The Government of India has recently emphasized "Farmer Empowerment through Skill Development" as a key pillar of its Viksit Bharat@2047 vision, aligning with the goals of Doubling Farmers' Income and Atmanirbhar Krishi (Self-Reliant Agriculture). The Ministry of Agriculture and Farmers Welfare, along with the Ministry of Skill Development and Entrepreneurship, has intensified efforts to strengthen farm-based skill training, modernize Krishi Vigyan Kendras (KVKs), and expand programs like Skill Training of Rural Youth (STRY) and Sub-Mission on Agricultural Mechanization (SMAM).

This renewed focus aims to bridge the knowledge gap among farmers, promote technology adoption, and enhance rural livelihoods through capacity building, making farmers not just producers but innovators and entrepreneurs in the agricultural value chain.

INTRODUCTION

Agriculture in India is undergoing a transformative shift — from traditional, labour-intensive practices to a technology-driven, knowledge-based system. At the core of this transformation lies the Government's sustained focus on farmer capacity building and youth skilling. Recognizing that skill development

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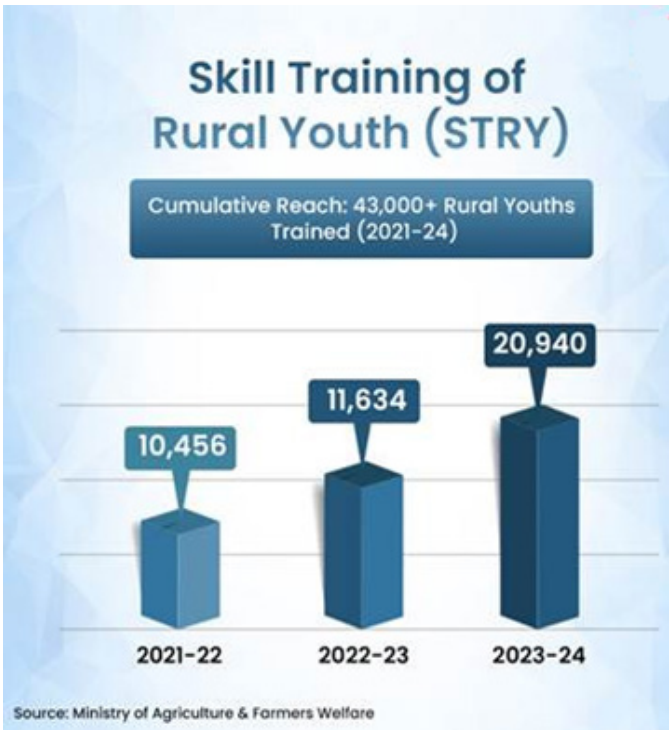
is pivotal to agricultural modernization, multiple initiatives have been launched to empower rural youth, enhance productivity, and promote mechanization across small and marginal holdings. Programmes such as the Skill Training of Rural Youth (STRY), Sub-Mission on Agricultural Mechanization (SMAM), and Pradhan Mantri Kaushal Vikas Yojana (PMKVY), along with sector-specific missions, are building a skilled, resilient, and entrepreneurial rural workforce.

1. Skill Training of Rural Youth (STRY): Building Human Capital in Villages

The Skill Training of Rural Youth (STRY) programme has emerged as a cornerstone of rural skilling efforts. Designed to provide short-term, practical training of around seven days, STRY equips rural youth and farmers with hands-on skills in agriculture and allied sectors such as horticulture, dairy, fisheries, and animal husbandry. It specifically targets youth aged 18 years and above, including women farmers, aiming to promote both wage and self-employment.

Integrated under the Agricultural Technology Management Agency (ATMA) cafeteria, STRY ensures synergy with state-led extension systems and local agro-climatic priorities. Between 2021 and 2024, over 43,000 youth were trained, with an additional 8,761 trained up to December 2024. The increasing outreach reflects growing rural participation and rising interest in agriculture as a viable career. By fostering entrepreneurship and local skill ecosystems, STRY is creating a generation of self-reliant farmers who drive innovation and employment in rural India.





2. Sub-Mission on Agricultural Mechanization (SMAM): Expanding Mechanization Access

To complement skill development, the Government has prioritized agricultural mechanization through the Sub-Mission on Agricultural Mechanization (SMAM), a component of the Rashtriya Krishi Vikas Yojana (RKVY). SMAM focuses on expanding mechanization to small and marginal farmers and regions with low farm power availability. It promotes Custom Hiring Services, enabling farmers to rent machinery without incurring high ownership costs.

Between 2021 and 2025, SMAM trained 57,139 farmers through capacity-building workshops, demonstrations, and Information-Education-Communication (IEC) activities. It also ensures quality assurance via performance testing and certification of equipment. By enhancing awareness, efficiency, and mechanization literacy, SMAM is bridging the technological gap between large and small farms, thus improving productivity and reducing drudgery in rural livelihoods.

3. Strengthening Knowledge on Soil, Resources, and Value Chains

A crucial dimension of skilling lies in resource management and value-chain awareness. The Soil Health Card Scheme, launched to promote scientific

nutrient management, has transformed soil intelligence at the farm level. As of July 2025, over 25.17 crore Soil Health Cards have been distributed, alongside 93,000 farmer trainings and 6.8 lakh demonstrations. These have encouraged balanced fertilizer use, improved soil fertility, and sustainable crop planning.

Simultaneously, the Formation and Promotion of Farmer Producer Organizations (FPOs) has institutionalized collective learning. With 10,000 FPOs registered, farmers are now receiving structured training in agri-business management, market linkages, and the use of digital platforms like e-NAM and GeM. These initiatives are fostering a culture of collective entrepreneurship, market access, and value-chain integration among smallholders.

4. Embedding Skilling within National Frameworks: PMKVY 4.0

The Pradhan Mantri Kaushal Vikas Yojana (PMKVY 4.0) (2022–26) marks a significant step toward mainstreaming agricultural skills within the national skilling architecture. Recognizing agriculture as a priority sector, PMKVY integrates it within India's flagship Skill India Mission. Training is imparted through accredited centres, skill hubs, and PM Kaushal Kendras under multiple components such as short-term courses (300–600 hours), Recognition of Prior Learning (RPL), and special projects.

Since its inception in 2015 till June 2025, more than 1.64 crore individuals have been trained and 1.29 crore certified across sectors, including agriculture and allied activities. This convergence ensures that agricultural skills are recognized, standardized, and aligned with national employability frameworks — a critical shift toward professionalizing rural occupations.

5. Sector-Specific Missions for Skill and Capacity Building

(a) Mission for Integrated Development of Horticulture (MIDH): The MIDH promotes holistic growth of horticulture through a comprehensive approach covering fruits, vegetables, spices, flowers, and bamboo. Under its Human Resource Development (HRD) programme, 9.73 lakh farmers have been trained from 2014–15 to 2023–24. These trainings enhance knowledge on post-harvest management, protected cultivation, and high-value horticulture practices, enabling diversification and better returns.

(b) Rashtriya Gokul Mission (RGM): Implemented under the Rashtriya Pashudhan Vikas Yojana (2021–26), RGM focuses on the development and conservation of indigenous bovine breeds. The initiative has trained and equipped 38,736 Multi-purpose Artificial Insemination Technicians in Rural India (MAITRIs) to deliver doorstep insemination and breeding services. This not only improves livestock productivity but also creates rural employment and technical expertise at the grassroots.

(c) Pradhan Mantri Kisan SAMPADA Yojana (PMKSY): The PMKSY aims to strengthen India's food processing infrastructure and supply chains. Under its "Human Resources and Institutions" component, it emphasizes R&D, promotional activities, and skill development across the food value chain — from floor workers to quality control supervisors. As of June 2025, 1,601 projects have been approved and 1,133 completed, benefitting over 34 lakh farmers. This initiative links farm-level production with industry requirements, boosting both incomes and employment in the agri-food ecosystem.

6. Multi-Dimensional Impact

- The convergence of these programmes has produced multi-layered benefits:
- Enhanced employability and entrepreneurship among rural youth.
- Increased adoption of mechanization and modern practices across smallholdings.
- Improved soil health and sustainable resource use.
- Strengthened value-chain linkages through FPOs and agri-business skilling.
- Mainstreaming of agricultural skills within national and global frameworks.
- Together, these initiatives have elevated agriculture from a subsistence activity to a

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knowledge-driven enterprise, positioning rural India for inclusive growth.

CONCLUSION

India's agricultural transformation is deeply rooted in skill development, technological adoption, and institutional capacity building. From STRY's rural youth training to SMAM's mechanization outreach, from Soil Health Cards to PMKVY's national skilling integration, every initiative contributes to empowering farmers as informed decision-makers and agri-entrepreneurs.

Prelims question:

Q. Consider the following schemes:

1. Skill Training of Rural Youth (STRY)
2. Sub-Mission on Agricultural Mechanization (SMAM)
3. Pradhan Mantri Kaushal Vikas Yojana (PM-KVY)
4. Rashtriya Gokul Mission (RGM)

Which of the above schemes primarily aim at developing the skill base and capacity of farmers in India?

(a) 1, 2 and 3 only (b) 1, 3 and 4 only

(c) 2, 3 and 4 only (d) 1, 2, 3 and 4

Answer: D

Mains Question:

Q. "Skilling farmers and rural youth is key to achieving self-reliant and technology-driven agriculture in India." Discuss the role of government initiatives in promoting farmer empowerment through skill development and capacity building.

(250 words)

NATIONAL CONFERENCE ON HANDLOOMS & HANDICRAFTS 2025: CHARTING A FUTURE FOR INDIA'S CRAFT ECONOMY

WHY IN THE NEWS?

The National Conference on Handlooms & Handicrafts is being held in Bhubaneswar, Odisha from 31st October to 1st November, 2025. The event aims to bring together policymakers, artisans, and industry stakeholders to discuss the future roadmap of India's handloom and handicraft sectors.



SIGNIFICANCE OF THE SECTOR

1. **Economic Value:** In FY 2024–25, handicrafts exports stood at US$ 192 million, while handloom exports reached US$ 3.8 billion, reflecting growing global demand for handmade and sustainable products.
2. **Employment Generation:** The sector is the second largest source of rural employment after agriculture, providing livelihood to over 3.5 million workers, of whom 72% are women (as per the 4th All India Handloom Census, 2019–20).
3. **Global Dominance:** India contributes nearly 95% of the world's handwoven fabric, making it a global leader in handmade textiles.

MAJOR HUBS AND PRODUCTS

1. **Key Centres:** Surat, Varanasi, Agra, Lucknow, Hyderabad, Chennai, and Mumbai are major handloom and handicraft hubs.

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2. **Regional Focus:** The North-Eastern region, especially Assam, has a high concentration of handloom households.
3. **Major Products:** Home textiles, carpets, rugs, handmade woollen products, wooden crafts, and hand-printed fabrics.
4. **Top Export Destinations:** The United States, UAE, Netherlands, France, and the United Kingdom.

GROWTH DRIVERS

1. Rising global demand for eco-friendly and culturally rich products.
2. Government support through financial assistance, marketing platforms, and skill upgradation.
3. Expanding online and international markets through e-commerce and trade fairs.
4. Sustainability focus aligning with global trends in ethical and green fashion.

GOVERNMENT INITIATIVES

1. **National Handloom Development Program (NHDP):** Provides support for raw materials, design innovation, technology upgradation, and marketing.
2. **National Handicrafts Development Program (NHDP):** Focuses on end-to-end development of artisans through cluster-based interventions, skill training, and market access.
3. **Pradhan Mantri Vishwakarma Kaushal Samman (PM-VIKAS):** Aims to enhance product quality, scale, and market reach of traditional craftsmen.
4. **Weaver MUDRA Scheme:** Offers concessional loans to handloom weavers for working capital and technology enhancement.
5. **SAMARTH Scheme:** Focuses on skill development and capacity building of weavers and artisans.
6. **Comprehensive Handicrafts Cluster Development Scheme:** Provides technical support and common infrastructure to strengthen artisan clusters.
7. **Marketing Support Initiatives:** Establishment of Urban Haats, exhibitions, and trade fairs. National Handloom Day celebrated on 7th August every year to promote "Swadeshi spirit" and acknowledge weavers' contribution.

NATIONAL CONFERENCE ON HANDLOOMS & HANDICRAFTS (2025)

Organized by: Development Commissioner (Handlooms & Handicrafts), Ministry of Textiles.

Aim: To provide a common platform for dialogue, collaboration, and policy convergence among all stakeholders.

TWIN OBJECTIVES:

1. To understand opportunities and challenges of India's handmade sector.
2. To deliberate on the upcoming new scheme for holistic development of the sector.

CHALLENGES

1. Competition from machine-made products and imported goods.
2. Limited access to formal credit and marketing channels.
3. Inadequate design innovation and low adoption of modern technology.
4. Declining interest among younger generations in traditional crafts.
5. Need for branding and geographical indication (GI) promotion.

WAY FORWARD

1. **Policy Convergence:** Integrating schemes for textiles, MSME, and rural development.
2. **Technology and Design Innovation:** Leveraging digital tools and AI-based design platforms.
3. **Global Branding:** Promoting Indian crafts through "Made in India" labels and global exhibitions.

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4. **Skill Enhancement:** Expanding training under SAMARTH and PM-VIKAS to promote entrepreneurship.
5. **Sustainable Production:** Encouraging use of organic raw materials and natural dyes.
6. **Cluster-Based Development:** Strengthening local artisan clusters for better market linkage and infrastructure.

CONCLUSION

India's handloom and handicraft sectors represent not only economic value but also cultural identity and sustainability. The upcoming National Conference at Bhubaneswar provides an opportunity to reimagine these traditional industries for a modern, global, and inclusive economy. By merging heritage with innovation, India can reinforce its position as the world's craft capital while ensuring dignified livelihoods for millions of artisans.

Prelims question:

Q. Which of the following statements about India's Handloom and Handicraft sectors is/ are correct?

1. India contributes nearly 95% of the world's handwoven fabric.
2. The National Handloom Day is celebrated on 7th August every year.
3. The Pradhan Mantri Vishwakarma Kaushal Samman (PM-VIKAS) scheme aims to support digital literacy among rural youth.

Select the correct answer using the code below:

(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2, and 3

Answer: A

Mains Question:

Q. India's Handloom and Handicraft sectors not only represent economic potential but also embody cultural heritage and sustainability. Discuss the major challenges faced by these sectors and suggest measures to enhance their global competitiveness.

(250 words)

TRANSFORMING ROADS INTO INTELLIGENT MOBILITY NETWORKS: INDIA'S NEW-AGE HIGHWAY EVOLUTION

WHY IN THE NEWS?

India's highways are undergoing a profound transformation in the digital age. Once built solely as physical pathways for vehicles, the country's road network is now evolving into an integrated, intelligent mobility system powered by data, technology, and real-time decision-making. These smart corridors are redefining how people travel, how goods move, how tolls are collected, and how infrastructure is monitored—paving the way for a more efficient, transparent, and sustainable national highway ecosystem.

As of March 2025, India has built over 63 lakh kilometres of roads—the second-largest network in the world. The transformation of national highways has been particularly remarkable. The network has grown to 1,46,204 km, up from 91,287 km in 2013–14, marking a 60% expansion, with 54,917 km added between 2014 and 2025. This rapid expansion has made digital governance indispensable for managing and upgrading such a massive asset base.

DIGITAL TOLLING & PAYMENT REFORMS: TOWARD SEAMLESS MOBILITY

1. **FASTag & National Electronic Toll Collection (NETC):** The National Payments Corporation of India (NPCI) has operationalized NETC, a unified, interoperable electronic tolling system. Its centerpiece, FASTag, uses RFID technology to deduct tolls automatically through linked user accounts. With 98% penetration and 8 crore+ users, FASTag has revolutionized highway tolling.
2. **sss**Mobility Made Easier: Launched for non-commercial vehicles, the pass offers:

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One-time payment of ₹3,000

Validity: 1 year or 200 toll crossings

Access across 1,150 toll plazas

Activation within 2 hours via Rajmargyatra/NHAI website

Within two months of launch (Aug–Oct 2025), the pass crossed 25 lakh users with 5.67 crore transactions, highlighting strong nationwide adoption.



3. Revised Tolling Rules (Effective 15 Nov 2025)

To accelerate digital payments and reduce cash usage:

Non-FASTag vehicles paying cash → Double toll fee

UPI payments → 1.25× toll amount

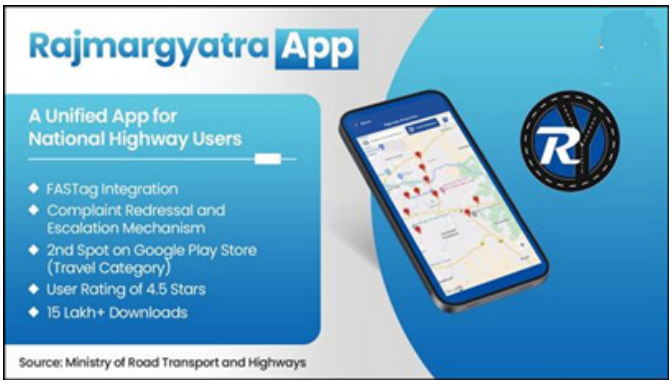
4. India's First Multi-Lane Free Flow (MLFF) Tolling: In August 2025, India launched its first MLFF toll plaza at Choryasi on NH-48, Gujarat. The barrier-free system reads FASTag/vehicle details on the move, eliminating stoppages and reducing fuel consumption, congestion, and emissions.

RAJMARGYATRA: INDIA'S MOST SUCCESSFUL HIGHWAY APP

The Rajmargyatra app has become a nationwide favourite for highway commuters with features such as:

1. Real-time highway and toll information
2. Weather updates
3. Speed limit alerts
4. Nearby health facilities & EV charging stations
5. Voice assistance for drivers
6. FASTag integration
7. Geo-tagged grievance reporting

The app has crossed 15 lakh downloads, boasts a 4.5 star rating, and ranks 2nd in India's Travel category, making it the highest-ranked government mobility app.



NHAI ONE: DIGITAL BACKBONE FOR FIELD OPERATIONS

NHAI One is a unified digital platform that integrates internal operations through five modules:

1. Staff attendance
2. Highway maintenance tracking
3. Road safety audits
4. Public toilet monitoring
5. Daily construction audits (RFIs with geo-tagged evidence)

With real-time data, geo-enabled reporting, and strict accountability, the app ensures that projects progress smoothly from the field to the headquarters.

GIS MAPPING & PM GATI SHAKTI: PLANNING WITH PRECISION

Under the PM Gati Shakti National Master Plan, India's entire National Highway network has been mapped using 550+ GIS layers, creating a powerful tool for strategic planning. These layers include:

1. Logistics hubs

2. Environmental and forest buffers

3. Industrial clusters

4. Rail & port linkages

5. Eco-sensitive zones

Digitizing all 1.46 lakh km of national highways marks a major milestone in modernising infrastructure planning through spatial intelligence.



INTELLIGENT TRANSPORT SYSTEMS (ITS)

Category	Details
Purpose of ITS/ ATMS	To ensure timely response, controlled traffic flow, enhanced safety, and real-time monitoring across highways and expressways.
Key Features of ATMS	• Automatic incident detection • Speed and lane enforcement • Traffic density monitoring • Emergency response activation • Variable message signboards
Expressways Equipped with ATMS	• Delhi–Meerut Expressway • Trans-Haryana Expressway • Eastern Peripheral Expressway • Bengaluru–Mysore Expressway
Impact (Bengaluru–Mysore Expressway)	Significant reduction in accidents and fatalities after ATMS deployment (July 2024).
Modern Safety Enhancements	• QR-enabled Information Boards for instant helpline access • Network Survey Vehicles (NSVs) with 3D laser scanners & 360° imaging
NSV Survey Coverage	Surveyed 20,933 km across 23 states, identifying: • Safety gaps • Pavement defects • Maintenance requirements



GREEN HIGHWAYS MISSION: SUSTAINABILITY IN EVERY MILE

Sustainability is now integral to India's road-building strategy under the Green Highways Mission.

1. Massive Afforestation Efforts

2. 56 lakh trees planted (2023–24)

3. 67.47 lakh (2024–25)

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4. 4.69 crore total plantations

These green buffers help reduce carbon emissions, control dust, and improve ecosystem resilience.

Water Conservation under Mission Amrit Sarovar

467 water bodies revived or developed

Generated 2.4 crore cubic meters of reusable soil

Saved an estimated ₹16,690 crore in construction material costs

Circular Economy in Construction

In 2023–24 alone, NHAI utilised:

631 lakh metric tonnes of fly ash, reclaimed asphalt, and plastic waste

This reflects India's commitment to waste reduction and green construction technologies.

SMART, SUSTAINABLE & CITIZEN-CENTRIC: THE HIGHWAY OF THE FUTURE

India's highways are now becoming live, intelligent systems that:

1. Sense real-time events
2. Analyse traffic and safety data
3. Respond instantly to emergencies
4. Enable seamless mobility through digital tolling
5. Promote sustainability through green initiatives
6. Empower citizens through transparent, user-friendly apps

CONCLUSION

India's digital highway revolution is more than an infrastructure upgrade—it represents a national shift toward intelligent mobility. Through GIS-based planning, real-time ATMS alerts, MLFF tolling, seamless FASTag services, waste-based construction materials, and citizen-friendly apps, the country is redefining what modern highways can achieve. These new-age corridors are transforming the movement of people and goods while contributing to sustainability, transparency, and economic growth. India is not just building highways—it is building digital, sustainable, and intelligent mobility ecosystems for the future.

Prelims question:

Q. With reference to India's digital transformation of National Highways, consider the following statements:

1. The Multi-Lane Free Flow (MLFF) system allows toll collection without stopping vehicles and was first launched in Gujarat in 2025.
2. Under the revised National Highways Fee Rules (2025), toll paid through UPI is equal to the standard toll amount.
3. Rajmargyatra app provides geo-tagged grievance redressal, real-time highway information, and FASTag integration.
4. Network Survey Vehicles (NSVs) deployed by NHAI are used only for toll audit purposes.

Which of the statements given above are correct?

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

C. 2 and 4 only D. 1, 3 and 4 only

Answer: A

Mains Question:

Q. Discuss the key components of this transformation and evaluate how digital tolling, GIS-based planning, Intelligent Transport Systems (ITS), and sustainability initiatives are reshaping India's road transport ecosystem.

(250 words)

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NARI SHAKTI AND THE NEW INDIA: BUILDING AN INCLUSIVE WORKFORCE FOR VIKSIT BHARAT

WHY IN THE NEWS?

India is witnessing a historic rise in women's workforce participation, marking a transformative phase in its journey toward Viksit Bharat@2047. The Female Labour Force Participation Rate (LFPR) has surged from 23.3% in 2017-18 to 41.7% in 2023-24, driven by inclusive policies, empowerment initiatives, and gender-sensitive reforms. Government schemes like PMMY, Stand-Up India, PMKVY, and Mission Shakti, along with strong legal frameworks such as the Maternity Benefit Act and Sexual Harassment Act, are creating an enabling ecosystem for women to contribute as equal partners in India's economic growth.

NARI SHAKTI AT THE HEART OF VIKSIT BHARAT

Imagine a nation where every woman, from rural artisan to urban innovator, steps into the workforce not as a participant, but as a powerhouse driving economic transformation. This is the promise of Viksit Bharat, that envisions a developed India by 2047, centring women's economic inclusion and empowering them through education, skills, safety, and entrepreneurship to unleash Nari Shakti for national growth.

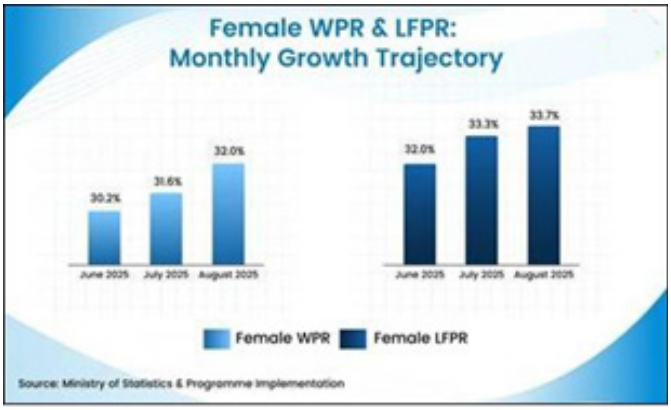
One of the key pillars of achieving Viksit Bharat is ensuring at least 70 percent workforce participation by women, making them equal stakeholders in India's growth story.

ADVANCING WOMEN'S WORKFORCE PARTICIPATION

India has witnessed a remarkable increase in the female workforce participation rate. Women employment rate nearly doubled between 2017-18 to 2023-24. Data from the Ministry of Labour and Employment states that female Labour Force Participation Rate (LFPR) increased from 23.3% in 2017-18 to 41.7% in 2023-24.

Worker Population Ratio (WPR) for women aged 15 years and above rose from 22% in 2017-18 to 40.3% in 2023-24, LFPR increased from 23.3% to 41.7%.

More recently, Female WPR rose to 32.0% in August 2025 from 31.6% in July 2025 and 30.2% in June 2025, and Female LFPR increased to 33.7% in August 2025 from 33.3% in July 2025 and 32.0% in June 2025.



INDIA'S RISE IN WOMEN'S WORKFORCE PARTICIPATION ACROSS BRICS

Over the past decade, India has recorded the sharpest rise in women's labor force participation among BRICS nations, as per World Bank data. Between 2015 and 2024, India's female labour force

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participation rate grew by over 23%, while Brazil, China, and Russia saw stagnation or declines, and South Africa only modest gains.

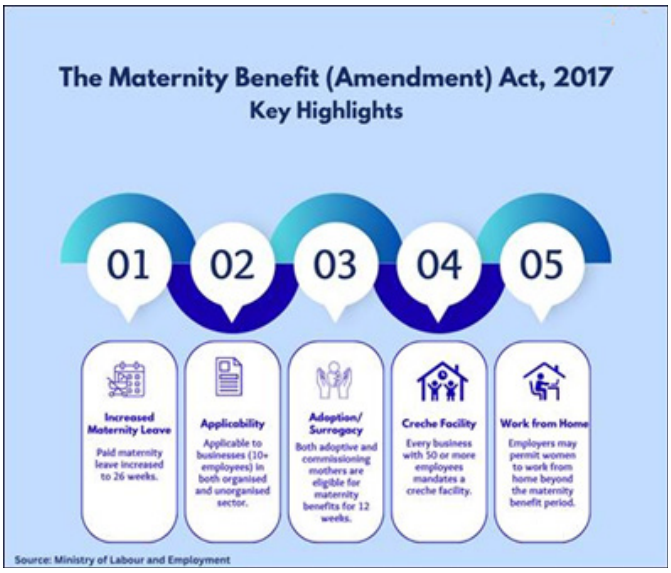
This surge reflects India's growing emphasis on women's economic inclusion, driven by policies that expand access to skills, credit, and formal employment. Initiatives such as Beti Bachao Beti Padhao, Pradhan Mantri Mudra Yojana (PMMY), Deendayal Antyodaya Yojana–NRLM, and Stand-Up India have empowered women through entrepreneurship, financial inclusion, and self-employment. India's decade-long momentum positions it as a model of inclusive growth within BRICS, showing how targeted policy focus can transform women's empowerment into a national growth driver.

LEGAL FRAMEWORK FOR WOMEN'S WORKPLACE EMPOWERMENT

India's labour laws ensure protection, equality, and welfare for women workers through several key provisions:

Maternity Benefit Act, 1961 (Amended 2017):

Extends paid maternity leave from 12 to 26 weeks and mandates crèche facilities for establishments with 50 or more employees. It also covers adoptive and surrogate mothers, encouraging continuity in women's careers and supporting work-life balance.



These reforms, combined with expanding digital and economic opportunities, reflect India's progress toward a gender-inclusive labour market where women increasingly participate not just as workers, but as contributors to sustainable economic growth.

According to the BRICS Women's Development Report 2025, India stands out for its generous paid maternity leave provisions, offering 182 days—the second longest in the group, behind only Iran's 270 days. This exceeds durations in other BRICS nations, such as Brazil, South Africa, and Ethiopia (120 days each), Egypt and Indonesia (90 days each), and the UAE (60 days). The report emphasizes India's position as a leader in fostering family-friendly workplaces to enhance women's retention and participation.

LEGAL FRAMEWORK FOR WOMEN'S WORKPLACE EMPOWERMENT

1. **Maternity Benefit Act, 1961 (Amended 2017):** Extends paid maternity leave from 12 to 26 weeks, mandates crèche facilities for establishments with 50 or more employees, and covers adoptive and surrogate mothers. The Act supports women's continued workforce participation and ensures a better work-life balance.

2. **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013:** Commonly known as the POSH Act, it safeguards women from workplace harassment and promotes a culture of dignity and safety. It mandates the establishment of Internal Complaints Committees (ICCs) within organisations to handle complaints in a fair and confidential manner, and Local Complaints Committees (LCCs) at the district level for smaller establishments or cases involving employers. The law has been instrumental in fostering safer workspaces, thereby indirectly encouraging higher female labour participation.

3. **Equal Remuneration Act, 1976:** Ensures the principle of "equal pay for equal work", prohibiting gender-based wage discrimination and promoting fairness and opportunity in employment. According to the BRICS Women's Development Report 2025, India ranks 120th globally in gender pay equity (2024 data), showing gradual improvement and narrowing

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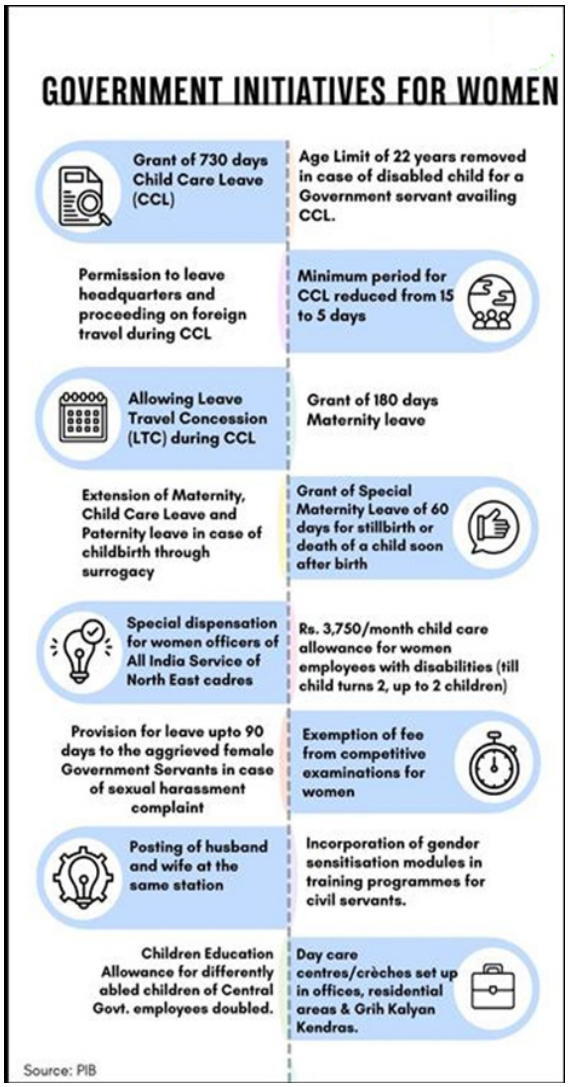
of the pay gap compared to peers like Brazil and South Africa, though still trailing China and the UAE.

4. **Code on Social Security, 2020:** Expands maternity, health, and social security benefits to all categories of workers, including those in the unorganised and gig economy. It also extends Employees' State Insurance coverage to plantation workers, providing crucial protection to women in tea and coffee estates.

5. **Occupational Safety, Health and Working Conditions Code, 2020:** Focuses on a safe and gender-sensitive workplace, mandating annual health checkups, night-shift safety measures, and transport facilities for women working at night. It also requires crèche facilities in establishments with more than 50 employees, ensuring childcare support and workplace inclusivity.

WORKPLACE INCLUSIVITY IN THE GOVERNMENT SECTOR

The Government has undertaken various women-centric initiatives to promote inclusivity in the workplace, workplace wellness and holistic wellbeing of female employees in Government service. These, measures, among other things include:



EMPOWERING WOMEN THROUGH SKILLS AND EMPLOYMENT

Scheme	Ministry/Department	Key Achievements
Pradhan Mantri Kaushal Vikas Yojana (PMKVY)	Ministry of Skill Development & Entrepreneurship (MSDE)	Provides industry-relevant skill training; 45% of beneficiaries are women, enhancing employability and income potential.
Pradhan Mantri Mudra Yojana (PMMY)	Ministry of Finance	Funds micro and small enterprises; over 68% of account holders are women, boosting women-led entrepreneurship across India.
Stand-Up India	Ministry of Finance	Supports SC, ST, and women entrepreneurs; as of March 2025, over 2.01 lakh women-owned accounts have been sanctioned.
Start-Up India	Ministry of Commerce & Industry	Promotes innovation and start-up culture; over 75,000 women-led start-ups have emerged under the initiative.
WISE-KIRAN Programme	Department of Science & Technology	Encourages women's participation and leadership in STEM fields, offering research and innovation support.

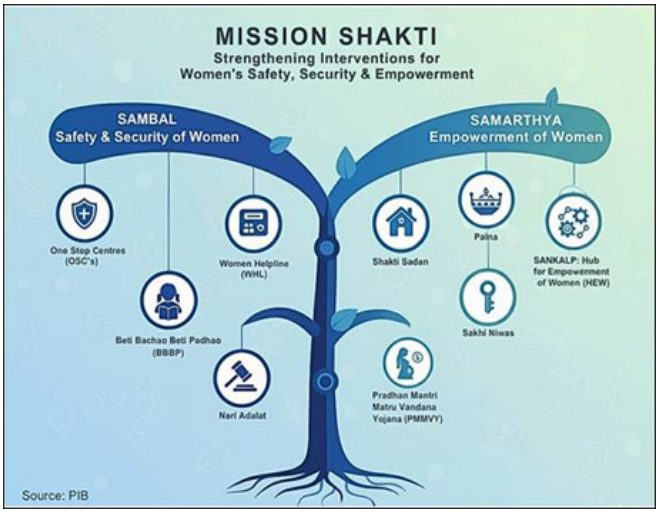
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NAVYA Programme (Nurturing Aspirations through Vocational Training for Young Adolescent Girls)	Ministry of Women & Child Development / MSDE	Trains girls aged 16–18 years in sectors like digital marketing, cybersecurity, and includes modules on communication, safety, and financial literacy.

ENABLING ECOSYSTEMS FOR WORKING WOMEN

SHe-Box (Sexual Harassment electronic Box): Launched by the Ministry of Women and Child Development (MWCD), the SHe-Box portal facilitates the effective implementation of the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013. It serves as an online complaint management and monitoring system, providing a centralized repository of data on Internal Committees (ICs) and Local Committees (LCs) across public and private organisations. Each workplace designates a Nodal Officer to ensure real-time data updates and accountability in complaint redressal, promoting transparency and safety in the workplace.

Mission Shakti: Implemented by MWCD in April 2024, Mission Shakti aims to strengthen interventions for women's safety, security, and empowerment. It provides short- and long-term support services to all women, especially those from vulnerable and marginalised groups, ensuring care, protection, and access to information for holistic development. The Mission operates through two verticals — 'Sambal' for safety and security, and 'Samarthya' for empowerment and capacity building.



CONCLUSION

Over the past decade, India has witnessed a remarkable transformation in women's workforce participation. Through reforms, skill development, maternity benefits, and initiatives like Mission Shakti, the government has built a strong foundation for inclusive and supportive workplaces. The steady rise in women joining the labour force and leading enterprises marks a new era where Nari Shakti drives national growth. From rural entrepreneurs to corporate leaders, women are reshaping India's economic and social landscape. As India advances towards Viksit Bharat@2047, empowering women at work remains not just a goal but a pillar of national progress, unlocking the potential of half the population for a stronger, equitable, and globally competitive India.

Prelims question:

Q. Consider the following government initiatives:

1. Pradhan Mantri Mudra Yojana (PMMY)
2. Stand-Up India Scheme
3. Mission Shakti
4. SHe-Box Portal

Which of the above are aimed at promoting women's empowerment and participation in the workforce?

(a) 1 and 2 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 only (d) 1, 2, 3 and 4

Answer: D

Mains Question:

Q. Discuss the recent trends in India's female labour force participation and the

role of government schemes and legal frameworks in empowering women in the workforce

(250 words)

INDIA'S SANITATION REVOLUTION: FROM ODF TO SUSTAINABLE WATER–WASTE MANAGEMENT

WHY IN THE NEWS?

Access to safe toilets and proper sanitation is essential for public health, dignity, and environmental sustainability. Improved sanitation reduces waterborne diseases, enhances productivity, and safeguards the environment. It also empowers women and children by providing safety, privacy, and better educational opportunities. In today's era of climate change, rapid urban expansion, and persistent inequality, secure sanitation continues to be a foundation for human dignity, community well-being, and sustainable progress.

WORLD TOILET DAY

World Toilet Day is observed every year on 19 November to raise awareness about the global sanitation crisis and the importance of safe toilets for all. It was officially designated as a United Nations observance in 2013. It highlights toilets as vital for health, dignity, equality, and sustainability and directly supports Sustainable Development Goal 6: Clean Water and Sanitation, aiming for universal access by 2030.



SWACHH BHARAT MISSION (SBM): A GLOBAL MODEL FOR SANITATION REFORM

The Swachh Bharat Mission (SBM) is India's biggest sanitation and hygiene reform initiative, launched on 2nd October 2014, with the aim of achieving universal sanitation coverage, eliminating open defecation, and ensuring scientific solid and liquid waste management. It consists of two components: SBM-Gramin for rural areas and SBM-Urban for cities and towns. In October 2019, all states, districts, and villages were declared Open Defecation Free (ODF)—a historic shift in India's sanitation landscape.

Key Achievements of SBM Phase I

1. **Health Gains:** WHO estimated that improved sanitation under SBM resulted in 3 lakh fewer diarrhoeal deaths in 2019 compared to 2014. Reduction in bacterial contamination in drinking water led to improved child health indicators.
2. **Economic Savings:** Households in ODF-certified villages saved nearly ₹50,000 annually due to reduced medical expenses and better productivity. Improved sanitation supports tourism, labour productivity, and environmental compliance.
3. **Environmental Protection:** Significant reduction in groundwater contamination from open defecation. Better waste management practices helped reduce pathogen load in soil and surface water.
4. **Women's Safety and Dignity:** Over 93% of women reported feeling safer and more dignified due to access to toilets at home. School sanitation facilities improved attendance of adolescent girls and reduced dropout rates.

ODF PLUS VILLAGE

An ODF Plus village is defined as a village which sustains its Open Defecation Free (ODF) Status, ensures solid and liquid waste management and is visually clean. There are 3 progressive stages of ODF Plus villages:

1. **ODF Plus Aspiring:** A Village which is sustaining its ODF status and has arrangements for

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Solid Waste Management OR Liquid Waste Management.

2. **ODF Plus Rising:** A village which is sustaining its ODF status and has arrangements for BOTH Solid Waste Management and Liquid Waste Management.
3. **ODF Plus Model:** A village which is sustaining its ODF status and has arrangements for both Solid Waste Management and Liquid Waste Management; observes visual cleanliness, and displays ODF Plus Information, Education & Communication (IEC) messages.

India's progress in sanitation under the Swachh Bharat Mission reflects a clear shift from access to sustainability. In rural areas, villages have steadily advanced from being declared open defecation free to achieving ODF Plus and ODF Plus Model status, showing strong community participation in maintaining facilities. Urban centers, meanwhile, have surpassed targets for household and public toilet construction, ensuring that sanitation infrastructure keeps pace with growing populations.

ODF++, RURAL AND URBAN SANITATION PROGRESS UNDER SBM

What is ODF Plus Plus (ODF++)?

ODF++ refers to areas where: There is no open defecation. All toilets are functional and well-maintained.

Faecal sludge and sewage are safely collected, transported, treated, and disposed without discharge into open drains, water bodies, or the environment.

It reflects a transition from toilet construction to holistic sanitation management.

RURAL SANITATION PROGRESS (SBM–GRAMIN)

Key Achievements

Indicator	Progress
Villages declared ODF Plus	Over 95% of all villages
Growth in ODF Plus villages	Increased by 467% (from 1 lakh in Dec 2022 to 5.67 lakh villages)
ODF Plus Model Villages	4,85,818 villages

URBAN SANITATION PROGRESS (SBM–URBAN)

ODF Status of Cities

Category	Number of Cities
ODF	4,692
ODF+	4,314
ODF++	1,973

TOILET CONSTRUCTION UNDER SBM–URBAN

1. Individual Household Latrines (IHHL)

- Construction Achieved: 108.62%
- Constructed: 63,74,355
- Mission Target: 58,99,637

2. Community & Public Toilets (CT/PT)

- Construction Achieved: 125.46%
- Constructed: 6,38,826
- Mission Target: 5,07,587

WATER–SANITATION SYNERGY: AMRUT & JAL JEEVAN MISSION (JJM)

1. AMRUT: Strengthening Urban Water & Wastewater Systems

Component	Details
About AMRUT	• Launched in 2015 for urban water supply, sewerage, and septage management. • AMRUT 2.0 (2021): Universal coverage of sewerage & septage management across all ULBs; focused implementation in 500 cities.
Key Achievements (as of 21 Aug 2025)	Sewerage & Septage Infrastructure • 890 projects grounded worth ₹34,447 crore • 4,622 MLD sewage treatment capacity created Includes 1,437 MLD for reuse/recycling

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State/UT Level Projects	• 586 projects worth ₹68,461.78 crore undertaken • Approved sewage treatment capacity: 6,964 MLD 1,938.96 MLD earmarked for reuse/recycling
Impact of AMRUT	• Strengthened urban wastewater networks • Reduced untreated sewage discharge • Promoted circular water economy via treated wastewater reuse • Improved urban sanitation & environmental outcomes

2. Jal Jeevan Mission (JJM): Water–Sanitation Convergence in Rural India

Component	Details
About JJM	• Launched in August 2019. • Aims to provide Functional Household Tap Connections (FHTCs) to all rural households.
Key Features	• Safe & adequate drinking water supply • Support to ODF & ODF+ sustainability • Greywater management • Strengthened village water governance
Role in Sanitation	• Reliable piped water improves toilet usage and cleanliness • Reduces dependence on unsafe water sources → lowers disease incidence • Strengthens handwashing, hygiene, and ODF sustainability

3. Water–Sanitation Synergy: AMRUT + JJM

Area	Synergistic Outcomes
Water Availability	• Ensures piped water supply in both urban (AMRUT) and rural (JJM) areas.
Sanitation Improvement	• Better toilet usage, sewerage access, and reduced open defecation recurrence.
Health Impact	• Reduced water-borne diseases, improved community hygiene.
Sustainability	• Reuse of treated wastewater, long-term operation & maintenance systems.
Inclusivity & Governance	• ULB-level reforms under AMRUT + village-level committees under JJM improve participation and accountability.

CONCLUSION

India's sanitation journey reflects a transformation from addressing open defecation to building sustainable systems of hygiene and waste management. Through initiatives like the Swachh Bharat Mission, AMRUT, and the Jal Jeevan Mission, the country has moved beyond infrastructure creation to ensuring dignity, inclusivity, and long-term cleanliness. With observance of important events like International Toilet Day, these efforts not only strengthen public health but also align with global commitments under Sustainable Development Goal 6, positioning India as a leader in advancing safe sanitation for all.

Prelims question:

Q. With reference to sanitation initiatives in India, consider the following statements:

1. An ODF Plus Model village must have both solid and liquid waste management systems and display visible cleanliness.
2. ODF++ status in urban areas requires safe collection, transportation, treatment, and disposal of faecal sludge and sewage.
3. AMRUT 2.0 focuses exclusively on rural water supply and sanitation.

Which of the above statements is/are correct?

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(a) 1 only (b) 1 and 2 only

(c) 2 and 3 only (d) 1, 2 and 3

Answer: B

Mains Question:

Q. "India's sanitation journey has matured from toilet construction to sustainable and integrated hygiene management."

Discuss how initiatives such as the Swachh Bharat Mission, AMRUT, and the Jal Jeevan Mission collectively strengthen sanitation, public health, and environmental sustainability in India.

(250 words)

A NEW CHAPTER IN INDIA'S ELECTRONICS MANUFACTURING: ECMS APPROVALS WORTH ₹5,532 CRORE

WHY IN THE NEWS?

A new phase in India's electronics manufacturing journey has begun as the government approved projects worth ₹5,532 crore under the Electronics Component Manufacturing Scheme (ECMS). These are the first seven projects sanctioned under the scheme, expected to generate production worth ₹44,406 crore and create over 5,000 jobs.

The announcement by Union Minister Ashwini Vaishnaw underscores India's commitment to strengthening its domestic electronics value chain and reducing import dependence. This move aligns with India's broader vision of becoming a global hub for advanced electronics manufacturing, building on the sector's rapid growth — now the third-largest and fastest-growing export category in 2024–25.

SCHEME OVERVIEW

The Electronics Component Manufacturing Scheme (ECMS), notified on 8 April 2025 with an outlay of ₹22,919 crore (USD 2.7 billion), aims to build a strong, self-reliant ecosystem for electronics component manufacturing in India. With a six-year tenure and an optional one-year gestation period, the scheme focuses on attracting domestic and global investments, enhancing value addition, and integrating India's electronics industry with global value chains through the production of key components, sub-assemblies, and raw materials.

Electronics Component Manufacturing Scheme (ECMS)

Status as on 30.09.2025

Parameter	Target under ECMS	Expected Outcomes (as per applications received)
Investment	Rs. 59,350 crore	Rs. 1,15,351 crore (~2X)
Production	Rs. 4,56,500 crore	Rs. 10,34,751 crore (~2.2X)
Employment	91,600 persons	1,41,801 persons (~1.5X)
Incentive Outgo	Rs. 22,805 crore	Rs. 41,468 crore (~1.8X)

Source: Ministry of Electronics and IT

As of 30 September 2025, investment commitments have reached ₹1,15,351 crore, nearly double the target, with expected production worth ₹10,34,751 crore — 2.2 times the initial projection. The incentive outgo is projected at ₹41,468 crore, while the scheme is estimated to create 1.4 lakh direct jobs, exceeding its original goal.

PRODUCTS COVERED UNDER THE FIRST SET OF ECMS APPROVALS

The first seven projects approved under the Electronics Component Manufacturing Scheme (ECMS) encompass a wide range of high-value electronic components and materials essential to modern technology. These include components used in smartphones, automobiles, medical devices, telecommunications, and industrial systems.

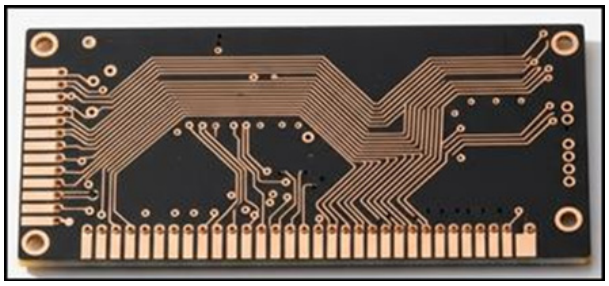
Camera Module Sub-Assembly



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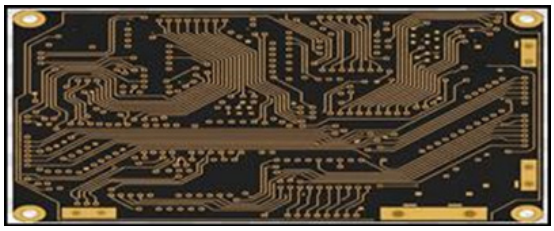
Camera module sub-assemblies are used in smartphones, drones, medical devices, and robots. They capture high-quality images and videos in electronic devices and serve as the imaging component in smartphones, tablets, laptops, security cameras, automotive systems, and IoT devices.

MULTI-LAYER PCB



Multi-layer Printed Circuit Boards (PCBs) are used in automotive, consumer electronics, ICT, medical devices, telecommunication, aerospace and defence, and industrial manufacturing. They have multiple copper and dielectric layers that are interconnected with through-hole vias and are widely used in consumer electronics, industrial controls, and automotive systems.

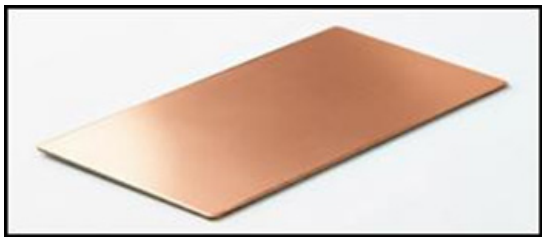
HDI PCB



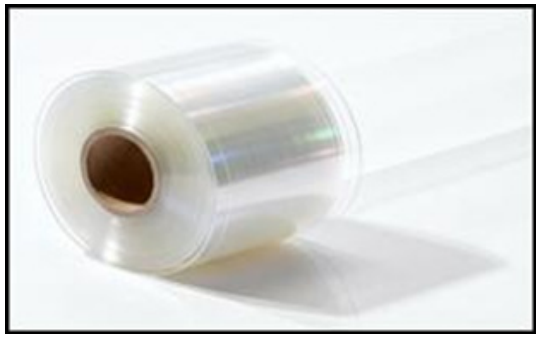
High-density interconnect PCBs are used in consumer electronics and wearable technology, automotive electronics, medical devices, telecommunication, aerospace and defence. These are advanced versions of PCBs with microvias, blind and buried vias, via-in-pad structures, finer tracks, and tighter spacing. They enable compact, high-performance designs for smartphones, tablets, wearables, aerospace, and medical devices.

LAMINATE (COPPER CLAD LAMINATE)

Copper clad laminates are used in automotive, consumer electronics, medical devices, ICT, telecommunication, aerospace and defence, and industrial manufacturing. They serve as the base component for the manufacture of multi-layer PCBs.



POLYPROPYLENE FILM



Polypropylene film is used in capacitors for consumer electronics, automotive, ICT, industrial and manufacturing, telecommunications, and computing. It is the key material used in the production of capacitors.

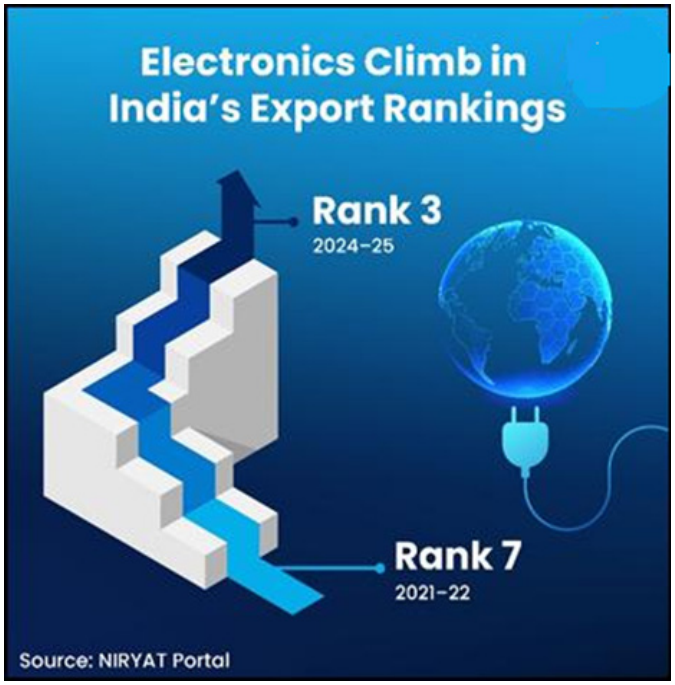
OVERVIEW OF APPROVED APPLICATIONS UNDER ECMS

Applicant Name	Product	Project Location	Investment (₹ crore)	Expected Production (₹ crore)	Employment (Persons)
Kaynes Circuits India Pvt. Ltd.	Multi-Layer Printed Circuit Board (PCB)	Tamil Nadu	104	4,300	220
Kaynes Circuits India Pvt. Ltd.	Camera Module Sub-Assembly	Tamil Nadu	325	12,630	480
Kaynes Circuits India Pvt. Ltd.	HDI PCB	Tamil Nadu	1,684	4,510	1,480

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Kaynes Circuits India Pvt. Ltd.	Laminate	Tamil Nadu	1,167	6,875	300
SRF Limited	Polypropylene Film	Madhya Pradesh	496	1,311	225
Syrma Strategic Electronics Pvt. Ltd.	Multi-Layer Printed Circuit Board (PCB)	Andhra Pradesh	765	6,933	955
Ascent Circuits Pvt. Ltd.	Multi-Layer Printed Circuit Board (PCB)	Tamil Nadu	991	7,847	1,535
Total	—	—	5,532	44,406	5,195

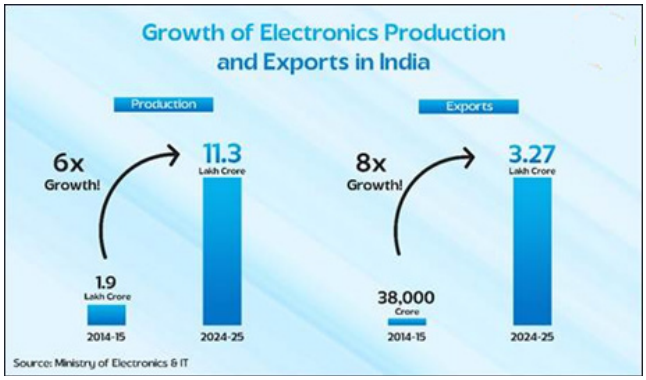
ELECTRONICS AS INDIA'S LEADING EXPORT CATEGORY



Electronics have emerged as India's third largest and fastest growing export category in 2024–25, rising from the seventh position in 2021–22. In the first half of FY 2025–26, electronics exports stood at USD 22.2 billion[1], maintaining strong growth momentum and placing the sector on course to become the country's second largest exported item.

The country's electronics production has grown from ₹1.9 lakh crore in 2014–15 to ₹11.3 lakh crore in 2024–25, marking a six-fold increase. Exports rose from ₹38,000 crore to ₹3.27 lakh crore in the same period, reflecting an eight-fold jump. Over the past decade, electronics manufacturing has created around 25 lakh jobs across the country.

Mobile manufacturing has played a major role in this transformation. Production in this segment has increased from ₹18,000 crore in 2014–15 to ₹5.45 lakh crore in 2024–25, a 28-fold rise. India is now the world's second largest mobile phone manufacturer, with more than 300 units operating compared to just two in 2014.



Exports of mobile phones have shown remarkable progress, rising 127 times from ₹1,500 crore in 2014–15 to ₹2 lakh crore in 2024–25. In 2024, Apple alone exported iPhones worth ₹1,10,989 crore, crossing the ₹1 lakh crore mark with 42 per cent year-on-year growth. In the first five months of 2025–26, smartphone exports touched ₹1 lakh crore, a 55 per cent rise over the same period last year.

India has now achieved near self-reliance in mobile production, moving from importing most of its requirements a decade ago to manufacturing almost all devices domestically. This transformation highlights the strength of India's policy ecosystem and its emergence as a trusted hub for global electronics manufacturing and exports.

CONCLUSION

India's electronics manufacturing sector stands at a defining moment. The approval of projects

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under the Electronics Component Manufacturing Scheme marks not just an industrial milestone but a strategic step towards deepening self-reliance and strengthening the nation's global position in technology production. With strong investment commitments, record production targets, and steady job creation, the scheme is set to reinforce the foundation of India's electronics value chain.

From components to complete devices, India is moving up the manufacturing ladder with confidence. The growth in exports, the rise of domestic production, and the rapid expansion of mobile manufacturing together show a clear direction. India is not only producing for its own needs but also powering global supply chains. As these efforts continue, the country's vision of becoming a global electronics hub is fast turning into a tangible reality.

Prelims question:

Q. Consider the following statements about the Electronics Component Manufacturing Scheme (ECMS):

1 The scheme was notified in April 2025 with a total outlay of ₹22,919 crore.

2. It aims to promote domestic manufacturing of key electronic components, sub-assemblies, and raw materials.

3. Tamil Nadu, Andhra Pradesh, and Madhya Pradesh are among the states where the first ECMS projects have been approved.

Which of the statements given above is/are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2 and 3

Answer: D

Mains Question:

Q. Discuss the significance of the Electronics Component Manufacturing Scheme (ECMS) in strengthening India's electronics value chain and achieving self-reliance in the sector

(250 words)

TOWARDS INCLUSIVE GOVERNANCE: INDIA'S COMPREHENSIVE MEASURES FOR TRANSGENDER PERSONS

WHY IN THE NEWS?

India's growing focus on the rights and welfare of transgender and non-binary persons has come into the spotlight following the government's renewed emphasis on implementing the Transgender Persons (Protection of Rights) Act, 2019, strengthening the National Council for Transgender Persons, and expanding services through the National Portal for Transgender Persons. Recent data based on Census 2011 estimates, which recorded 4.87 lakh individuals under the "other" gender category, has further highlighted the need for targeted policies and improved access to welfare schemes.



The developments also gain importance as India reflects on a decade since the Supreme Court's landmark NALSA (2014) judgment, which recognised transgender persons as a "third gender" and guaranteed their right to self-identification. Together, these steps underscore India's continuing efforts toward inclusion, dignity, legal protection, and mainstream integration of transgender communities.

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TRANSGENDER PERSONS (PROTECTION OF RIGHTS) ACT, 2019 — KEY PROVISIONS

Section / Theme	Key Features
1. Definition (Sec 2)	Defines "transgender person" to include trans-men, trans-women, intersex persons, gender-queer, hijra communities, irrespective of surgery.
2. Non-Discrimination (Sec 3)	Prohibits discrimination in education, employment, healthcare, public services, residence, movement, and access to government schemes.
3. Legal Recognition (Sec 4–7)	Right to self-perceived gender identity. Application to District Magistrate for Certificate of Identity. Revised certificate possible after SRS (optional).
4. Government Duties (Sec 8)	Mandates welfare schemes, social inclusion, rescue & rehabilitation, and sensitisation/ awareness programs.
5. Employment & Family Rights (Sec 9–12)	No employment discrimination; complaints mechanism via Complaint Officer. Right to reside in the family household.
6. Education & Healthcare (Sec 13–15)	Inclusive education, vocational training, access to gender-affirming healthcare, counselling, SRS procedures, and insurance coverage.
7. National Council (Sec 16–18)	Establishes National Council for Transgender Persons to advise government, monitor implementation, and address grievances.
8. Offences & Penalties (Sec 19–20)	Penalties include imprisonment up to 2 years + fine for abuse, denial of rights, forced labour, or violence.

TRANSGENDER PERSONS (PROTECTION OF RIGHTS) RULES, 2020 – KEY PROVISIONS

1. **Procedure for Certificate of Identity:** Application can be submitted online or offline to the District Magistrate (DM). Based on self-declaration of gender identity. No medical, psychological, or physical examination required. DM must process the application within a fixed time frame (usually 30 days).
2. **Revised Certificate (After SRS):** Applicable only if the person opts for gender-affirming surgery (SRS). A revised certificate is issued after submission of the medical certificate from the hospital. Process is optional—surgery is NOT mandatory for identity recognition.
3. **Duties of Establishments:** Mandatory appointment of a Complaint Officer in every government and private establishment. Establishments must maintain annual compliance reports on steps taken to implement the Act. Ensure non-discrimination policies, suitable infrastructure, and workplace inclusion.
4. **Grievance Redress Mechanism:** All institutions must set up accessible and confidential grievance mechanisms. Complaints must be resolved in a time-bound manner. Regular monitoring of grievance handling.
5. **Welfare & Support Measures:** Shelters (Garima Grehs): Safe housing, food, skill training, and support.

- **Healthcare:** Gender-affirming care, mental health counselling, access to insurance.
- **Education:** Inclusive classrooms, scholarships, vocational and digital skilling programs.
- **Livelihood Support:** Social security schemes, pensions, employment assistance.

6. **Sensitisation & Awareness**

- **Mandatory training for:** Police, Healthcare workers, Teachers & school staff, Government officials, Awareness campaigns to reduce stigma and promote inclusion.

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GOVERNMENT INITIATIVES FOR TRANSGENDER WELFARE

Initiative	Year / Ministry	Key Features / Benefits
National Council for Transgender Persons	MoSJE	• Advises Government on policies • Monitors welfare schemes • Coordinates inter-ministerial efforts
National Portal for Transgender Persons	Launched: 25 Nov 2020	• Online self-service portal for Certificate & ID Card • Paperless, transparent, time-bound processing • Access to schemes & grievance redress
SMILE Scheme (Support for Marginalised Individuals for Livelihood & Enterprise)	2022, SMoSJE	• Livelihood support & skill training • Shelter support through Garima Greh • Counselling & rehabilitation • Includes Ayushman Bharat TG Plus health package
Garima Greh (Shelter Homes)	Under SMILE	• Safe housing, food, medical care • Counselling & skill development • Social and economic rehabilitation
Equal Opportunities Policy for Transgender Persons	DoSJE	• Ensures equal access in employment • Prohibits workplace discrimination • Mandates grievance redress mechanisms

NATIONAL COUNCIL FOR TRANSGENDER PERSONS

1. **Constitution & Status:** Constituted on 21 August 2020; reconstituted on 16 November 2023. A statutory body under the Ministry of Social Justice & Empowerment (MoSJE).
2. **Composition:** Five representatives from the transgender community. Representatives from NHRC, NCW, State Governments & UTs. Experts from NGOs working in the field.
3. **Advisory Role:** Advises the Central Government on policies, laws, programmes, and schemes related to transgender persons.
4. **Monitoring Function:** Monitors and evaluates implementation and impact of welfare schemes & protections under the 2019 Act.
5. **Review & Coordination:** Reviews and coordinates the work of ministries, departments, and NGOs. Ensures consistency, avoids duplication, and strengthens service delivery.
6. **Grievance Redressal:** Addresses grievances and ensures prompt resolution of rights violations faced by transgender persons.

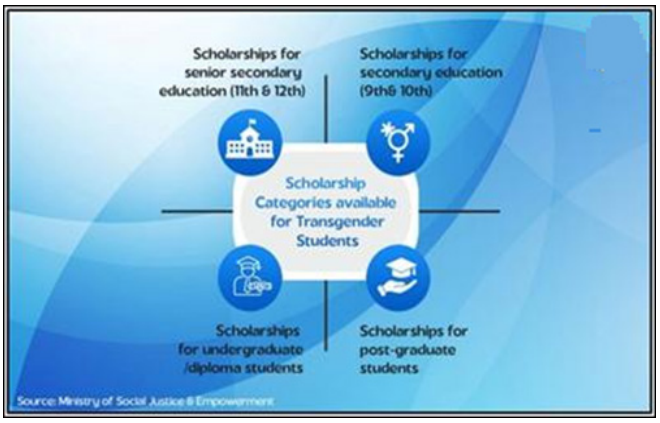


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SMILE SCHEME (2022)

1. **Nature & Launch**

- **Full form:** Support for Marginalised Individuals for Livelihood and Enterprise.
- Launched on 12 February 2022 by MoSJE as a Central Sector Scheme.
- Aligns with the Transgender Persons (Protection of Rights) Act, 2019.



2. **Objectives:** Ensures rehabilitation, empowerment, livelihood, and dignity for transgender persons. Upholds equality, non-discrimination, and dignity under Articles 14, 15, and 21.

3. **Skill Development & Employment:** Provides skill training, vocational opportunities, and livelihood support. Promotes inclusive education and employability.

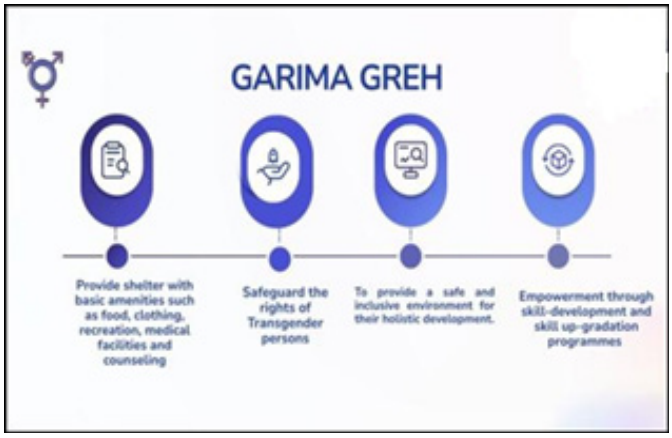
4. **Scholarships for Education:** Supports transgender students to reduce dropouts. Online, automated application using a single login credential.

5. **Composite Medical Health Support:** Access to gender-affirming healthcare, HIV surveillance, counselling. Integration with Ayushman Bharat PM-JAY.

- **Launch of Ayushman Bharat TG Plus:** ₹5 lakh free medical coverage per person per year. Covers SRS, hormone therapy, post-operative care, and other treatments.

6. **Garima Greh (Safe Shelters):** Provides shelter, food, medical care, and counselling for transgender persons in distress. Mandated as per Section 12(3) of the 2019 Act. 21 Garima Grehs are functional across 17 States; 3 more recently sanctioned.

7. **Protection Cells & Portal Integration:** District-level Transgender Protection Cells under DMs. Ensure FIR registration, monitor offences, and conduct sensitisation. Integrated with the National Portal for Transgender Persons for transparency and service delivery.





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NATIONAL PORTAL FOR TRANSGENDER PERSONS

The National Portal for Transgender Persons was launched on 25th November, 2020 to issue certificates and ID cards to eligible Transgender persons. The Portal is accessible in multiple languages (English, Hindi, Gujarati, Malayalam and Bengali). This is an end-to-end online process where the applicant can apply for the TG certificate and also download the certificate after issue without any requirement to go to any office of issue.



CONCLUSION

Recent years have witnessed significant legal and policy reforms for the transgender community in India, spearheaded by the Government of India and its concerned ministries. The Transgender Persons (Protection of Rights) Act, 2019, together with subsequent amendments and targeted schemes such as SMILE and Garima Greh, have laid robust foundations for affirmative action, legal recognition, and social protection of transgender persons. In 2025, the Ministry of Social Justice and Empowerment-continued to organise capacity building programmes, national campaigns, and conferences to promote awareness, address stigma, and ensure the effective inclusion of transgender individuals in policy frameworks and public life.

Prelims question:

Q. With reference to transgender welfare in India, consider the following statements:

1. The Transgender Persons (Protection of Rights) Act, 2019 allows self-perceived gender identity without requiring medical or physical examination.
2. Ayushman Bharat TG Plus Scheme provides ₹5 lakh annual health coverage exclusively for transgender persons, including gender-affirming procedures.
3. Garima Greh shelters are implemented under the National Portal for Transgender Persons.

How many of the above statements are correct?

(a) Only one (b) Only two
(c) All three (d) None

Answer: B

Mains Question:

Q. Discuss the key provisions of the Transgender Persons (Protection of Rights) Act, 2019 and evaluate the role of recent government initiatives—such as the National Council for Transgender Persons, SMILE Scheme, Garima Greh, and the National Portal for Transgender Persons—in strengthening inclusion, welfare, and legal protections for the transgender community in India.

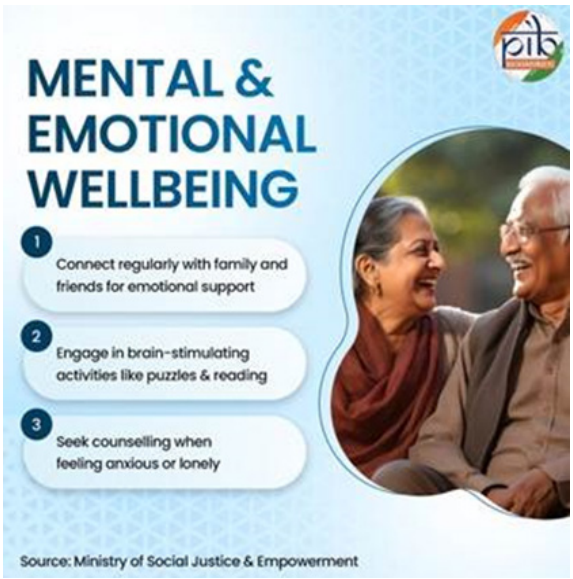
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ELDERLY IN INDIA: POPULATION, CHALLENGES, AND GOVERNMENT INITIATIVES

WHY IN THE NEWS?

India's elderly population (aged 60 years and above) is projected to rise to 230 million by 2036, constituting nearly 15% of the total population. The Ministry of Social Justice and Empowerment (MoSJE) has released data and updates on policies and programmes for senior citizens, intensifying policy focus on the "silver economy" and geriatric care.



BACKGROUND

India is undergoing a demographic transition — declining fertility and rising life expectancy — causing a rapid increase in the population aged 60+. From about 100 million in 2011 the elderly are projected to reach 230 million by 2036 and ~319 million by 2050 (LASI projections). Regional patterns vary — southern states and some hill states show earlier ageing; many northern/eastern states will age faster later.

DEMOGRAPHIC TRANSITION AND AGEING IN INDIA

India is moving from a young population profile to an ageing one, a stage consistent with the fourth phase of the Demographic Transition Model (DTM) — characterized by low birth and death rates and increased life expectancy.

Fertility rate: 2.0 (NFHS-5, 2019–21) — approaching replacement level.

Life expectancy: 70.9 years (SRS 2023).

Elderly population: Expected to rise from 8.6% (2011) → 14.9% (2036).

This transition, while a sign of social and health progress, brings challenges of dependency, healthcare, and social security.

POPULATION AND DEMOGRAPHY LINKAGES

Concept	Relevance to Elderly Population
Age Structure	The share of the working-age population (15–59 years) will decline post-2035, increasing dependency.
Dependency Ratio	62 dependents per 100 working-age people — rising elderly dependency implies higher fiscal and caregiving burden.

Population Pyramid	India's population pyramid is narrowing at the base and widening at the top — a "rectangularisation" typical of ageing societies.
Demographic Dividend Turning Point	India's demographic dividend may peak by 2035, after which ageing pressure will intensify.

DEMOGRAPHIC TRENDS OF ELDERLY IN INDIA

Indicator	Key Findings
Elderly Population (60+ years)	Expected to reach 230 million by 2036
Regional Pattern	Higher concentration in southern states like Kerala, Tamil Nadu, Himachal Pradesh, and Punjab
Kerala	Elderly share projected to rise from 13% (2011) to 23% (2036)
Uttar Pradesh	Elderly share projected to rise from 7% (2011) to 12% (2036)
Sex Ratio among Elderly	1,065 females per 1,000 males
Dependency Ratio	62 dependents per 100 working-age people
Projected Elderly by 2050	319 million (LASI Report 2021)

CHALLENGES FACED BY THE ELDERLY

Domain	Key Issues
Health	Lack of geriatric care, rising NCDs, mental health (dementia), rural–urban access gap
Economic	Low pension coverage, medical expenditure burden, risky informal work
Social	Isolation, elder abuse, loss of traditional family support
Digital	Low digital literacy blocks access to e-services
Infrastructure	Non-age-friendly public spaces, inaccessible transport, inadequate long-term care facilities

IMPORTANCE OF ADDRESSING ELDERLY NEEDS

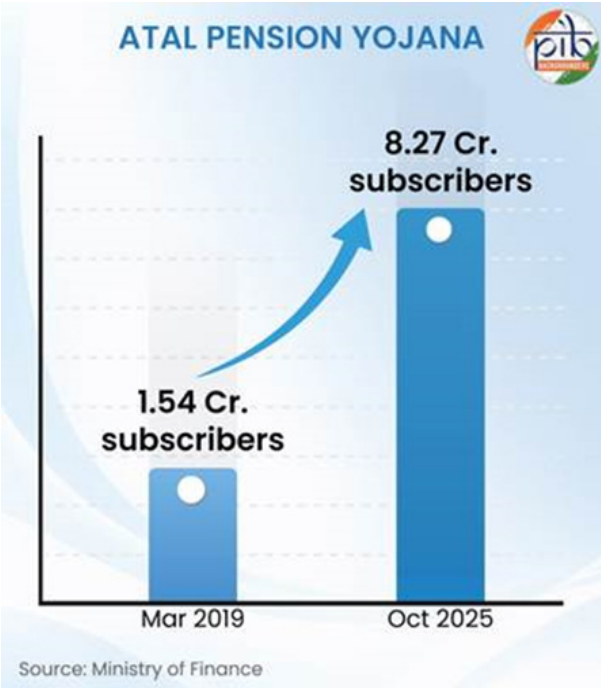
1. **Human Dignity and Rights —** Aging persons must be protected from neglect, abuse and poverty; ensuring their rights is a moral and constitutional duty (Dignity, welfare).
2. **Demographic & Economic Implications —** An increasing elderly share affects dependency ratios, savings, labour supply, pension liabilities and public finance; failure to plan can raise fiscal stress and reduce productive capacity.
3. **Health-System Burden —** A rise in chronic, geriatric and multi-morbidity cases increases pressure on primary, secondary and tertiary health care and calls for geriatric-specialised services and long-term care.
4. **Social Stability & Family Structures —** Shrinking joint-family support and increasing migration/ nuclear families mean more elderly may face isolation or inadequate care — social policy must respond.
5. **Gender Concerns —** A larger proportion of elderly are women (widowhood, pension gaps, longer life expectancy) — gender-sensitive interventions are necessary.
6. **Economic Opportunity (Silver Economy) —** Elder-focused goods and services — healthcare, assistive devices, leisure, employment — can generate growth and employment if supported through policy and market nudges.
7. **Intergenerational Equity —** Policy choices must balance present generation needs with equitable sharing of resources across generations (pensions, health spending, taxation).

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8. **Disaster & Vulnerability Management —** Elderly are especially vulnerable during disasters and public health emergencies; disaster planning must include their needs.

MAJOR GOVERNMENT INITIATIVES

Scheme / Initiative	Objective / Key Features
Atal Pension Yojana (APY)	Provides ₹1,000–₹5,000 monthly pension for citizens aged 18–40; 8.27 crore subscribers (2025)
Atal Vayo Abhyuday Yojana (AVYAY)	Umbrella scheme for senior citizen empowerment and inclusion
Integrated Programme for Senior Citizens (IPSrC)	Funds NGOs and State agencies to run old-age homes; 696 homes functional (2025)
Rashtriya Vayoshri Yojana (RVY)	Provides free assistive devices (wheelchairs, hearing aids) to BPL elderly
Elderline (14567)	National Helpline for Senior Citizens addressing grievances and support services
SAGE Portal	Encourages start-ups to build products for the "silver economy" with govt equity up to ₹1 crore
SACRED Portal	Digital platform for re-employment opportunities for elderly citizens
Geriatric Caregivers Training	Empanels institutes for training caregivers; 36,785 trained in 2023–24
Ayushman Bharat – PMJAY (Elderly Extension)	Provides ₹5 lakh annual health cover to all senior citizens aged 70+
Indira Gandhi National Old Age Pension Scheme (IGNOAPS)	₹200–₹500 monthly pension for BPL elderly; 2.21 crore beneficiaries
National Programme for Health Care of the Elderly (NPHCE)	Comprehensive geriatric care at district and sub-district levels
Senior Citizens Welfare Fund (SCWF)	Utilises unclaimed funds for welfare programmes for elderly
Retirement Homes Model Guidelines (2019)	Promotes age-friendly housing and community living



CONCLUSION

India's ageing population marks a major demographic shift, demanding a move from welfare-

based to rights-based elderly care. Strengthening social security, healthcare, and community support while promoting the silver economy can turn this challenge into an opportunity. Ensuring dignity, inclusion, and active participation of senior citizens is key to building an equitable and compassionate society.

Prelims Question

Q. Consider the following pairs:

Scheme	Implementing Ministry
1. Atal Pension Yojana	Ministry of Finance
2. Rashtriya Vayoshri Yojana	Ministry of Social Justice & Empowerment
3. Indira Gandhi National Old Age Pension Scheme	Ministry of Rural Development

Which of the above pairs are correctly matched?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1, 2 and 3 (d) 1 and 3 only

Answer: C

Mains Question

Q. Discuss the demographic and socio-economic implications of India's ageing population and evaluate the effectiveness of government initiatives in ensuring dignity and welfare for senior citizens.

(250 words)

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ENCEPHALOMYOCARDITIS VIRUS (EMCV) CASE IN DELHI ZOO: IMPLICATIONS FOR WILDLIFE HEALTH AND CONSERVATION POLICY

WHY IN THE NEWS?

Shankar, a 29-year-old African elephant residing in Delhi's National Zoological Park, died in September 2025 due to the Encephalomyocarditis Virus (EMCV) — a rare rodent-borne disease. This marks the first documented case of EMCV in an Indian zoo.



BACKGROUND

- Shankar was gifted by Zimbabwe in 1998 to then-President Shankar Dayal Sharma as part of diplomatic goodwill.
- He lived 27 years in captivity, with the last 13 years in solitary confinement after the death of his companion elephant.
- His isolation had been criticized by animal welfare organizations, who repeatedly requested that he be paired with a mate or relocated to a sanctuary.

ABOUT ENCEPHALOMYOCARDITIS VIRUS (EMCV)

1. **Type:** RNA virus belonging to the Picornaviridae family.
2. **Primary Host:** Rodents (especially rats); they are asymptomatic carriers.
3. **Transmission:** Through ingestion of food or water contaminated with rodent urine or feces.
4. **Affected Species:** Pigs (main hosts), non-human primates, big cats, elephants, and occasionally humans.
5. **Vulnerability:** African elephants are highly susceptible — several zoo deaths globally have been linked to EMCV outbreaks.

SYMPTOMS AND SHANKAR'S FINAL MOMENTS

1. On September 17, Shankar showed reduced appetite and loose stools, initially mild signs.
2. Despite immediate veterinary attention, he collapsed and died within hours, highlighting EMCV's acute and fatal progression.
3. EMCV often causes sudden death due to myocarditis (heart inflammation) with minimal external symptoms.

CHALLENGES IN DISEASE MANAGEMENT

1. **Rodent and Pest Control Difficulties:** Open and naturalistic zoo enclosures make it extremely difficult to restrict the movement of rodents and other small mammals, such as squirrels, which act as asymptomatic carriers of EMCV.

2. **Absence of Specific Vaccine or Cure:** There is currently no vaccine or targeted antiviral treatment for Encephalomyocarditis Virus, leaving only preventive and supportive care as options once infection occurs.

3. **Asymptomatic and Rapid Progression:** EMCV often shows minimal or no visible symptoms before sudden cardiac failure, making early diagnosis and timely medical intervention almost impossible.

4. **Environmental Persistence:** The virus can survive in contaminated soil, feed, and water for extended periods, creating long-term environmental sources of infection even after disinfection attempts.

5. **Inadequate Biosecurity Infrastructure:** Many Indian zoos lack modern biosecurity measures, such as rodent-proof feed storage, routine viral screening, and controlled waste management systems.

6. **Limited Awareness and Diagnostic Capacity:** Veterinary personnel often face constraints in detecting rare zoonotic viruses due to lack of specialized diagnostic tools, laboratory support, and training in emerging wildlife diseases.

INSTITUTIONAL AND ADMINISTRATIVE CONTEXT

1. **Concurrent Disease Outbreaks:** The Delhi Zoo's closure since August 30 due to avian influenza added strain to administrative resources and restricted regular monitoring activities.

2. **Need for Integrated Surveillance:** The EMCV case highlights the absence of an integrated, multi-species wildlife health surveillance system across Indian zoos.

3. **Central Zoo Authority (CZA) Oversight:** The CZA is expected to re-evaluate national biosecurity standards and enforce stricter rodent-control and hygiene protocols.

4. **Coordination Challenges:** Multiple authorities — zoo management, veterinary departments, and state forest agencies — often operate without unified response mechanisms.

5. **Resource and Infrastructure Gaps:** Limited veterinary staff, outdated facilities, and inadequate disease diagnostic capacity hamper rapid response to zoonotic threats.

6. **Policy Review Imperative:** This incident underscores the urgent need for revising India's National Zoo Policy (1998) to include modern disease-prevention and welfare norms.

BROADER IMPLICATIONS

1. **Urban Zoonotic Risk Linkages:** The case exposes how inadequate rodent control and waste management in urban areas can escalate zoonotic disease transmission risks.

2. **One Health Perspective:** Reinforces the global "One Health" principle — integrating animal, human, and ecosystem health for preventing pandemics.

3. **Public Health Relevance:** Zoo-based infections can spill over into human populations, emphasizing biosecurity as a part of public health strategy.

4. **Ethical and Welfare Considerations:** Raises moral questions on keeping intelligent, social animals like elephants in isolation without environmental enrichment.

5. **Scientific Zoo Management:** Calls for evidence-based management practices, including regular health audits and digital record-keeping of zoo animals.

6. **Global Reputation of Indian Zoos:** Incidents like these affect India's international image in wildlife care and conservation, demanding improved compliance with World Association of Zoos and Aquariums (WAZA) guidelines.

WAY FORWARD

1. **Enhanced Biosecurity:** Implement rodent-proof feed storage, regular pest monitoring, and improved sanitation across enclosures.

2. **Veterinary Capacity Building:** Train veterinarians and staff in zoonotic disease identification, quarantine measures, and emergency response protocols.

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3. **Companion Animal Policy:** Mandate pairing or social grouping for elephants and other social species to prevent psychological distress and improve welfare.

4. **Public Awareness and Transparency:** Conduct public education campaigns on animal welfare and regularly publish zoo health status reports to build trust.

5. **Research and Collaboration:** Encourage partnerships between zoos, veterinary universities, and public health institutions for studying rodent-borne and emerging wildlife viruses.

6. **Policy and Monitoring Reforms:** Update national zoo guidelines to align with global best practices, and institute periodic third-party inspections for compliance and accountability.

CONCLUSION

The death of Shankar, the African elephant, is a stark reminder of the fragile balance between wildlife conservation, disease management, and animal welfare ethics in captivity. It exposes critical gaps in zoo biosecurity, rodent control, and emotional well-being of animals — especially for highly intelligent and social species like elephants. The incident also highlights the emerging threat of zoonotic viruses such as EMCV, reinforcing the need for a "One Health" approach that integrates human, animal, and environmental health.

Prelims question:

Q. Consider the following statements regarding Encephalomyocarditis Virus (EMCV):

1. It is an RNA virus belonging to the Picornaviridae family.
2. Rodents act as asymptomatic carriers of this virus.
3. It primarily affects elephants and tigers but not pigs.

Which of the statements given above is/are correct?

(a) 1 and 2 only (b) 2 and 3 only
(c) 1 only (d) 1, 2, and 3

Answer: A

Mains Question:

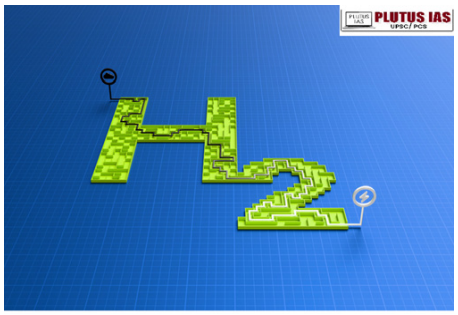
Q. The death of Shankar, the African elephant, at Delhi Zoo highlights critical challenges in animal welfare, disease surveillance, and ethical zoo management in India. Discuss in the light of the "One Health" approach.

(250 words)

INTERNATIONAL CONFERENCE ON GREEN HYDROGEN 2025: ACCELERATING INDIA'S CLEAN ENERGY TRANSITION

WHY IN THE NEWS?

The Ministry of New and Renewable Energy (MNRE) will host the International Conference on Green Hydrogen (ICGH 2025) on November 11–12, 2025, at Bharat Mandapam, New Delhi. The event aims to bring together global policymakers, industry leaders, researchers, and investors to discuss strategies for scaling up green hydrogen production, infrastructure, and demand creation under the National Green Hydrogen Mission (NGHM).



KEY PARTICIPANTS

1. The two-day conference will feature participation from senior Union Ministers, including:

2. Pralhad Joshi, Minister of New and Renewable Energy and Consumer Affairs
3. Hardeep Singh Puri, Minister of Petroleum and Natural Gas
4. Dr. Jitendra Singh, Minister of State (Independent Charge) for Science & Technology and Earth Sciences

The event will also see the presence of international organisations such as:

International Renewable Energy Agency (IRENA)

- Hydrogen Europe
- H2 Global Foundation
- Korea Hydrogen Alliance
- Port of Rotterdam Authority

CONFERENCE OBJECTIVES

1. **Policy Alignment:** Harmonise government, industry, and research priorities to accelerate implementation of the National Green Hydrogen Mission (NGHM).
2. **Technology Development:** Share insights on electrolyser technologies, renewable integration, and cost reduction pathways.
3. **Infrastructure Building:** Discuss port readiness, transport and storage infrastructure, and industrial integration.
4. **Demand Creation:** Explore market-based mechanisms and incentives to drive adoption in sectors like steel, mobility, and fertilizers.
5. **Global Collaboration:** Strengthen international cooperation for technology transfer, certification, and financing models.

THEMATIC SESSIONS

1. Financing and Investments in green hydrogen ecosystems
2. Certification Frameworks to ensure credibility and traceability of hydrogen sources
3. Port Readiness and Logistics for hydrogen export/import
4. Technology Localisation and Skill Development
5. Demand Creation across transport, power, and heavy industries
6. Role of R&D in improving energy efficiency and reducing production costs

SIGNIFICANCE OF THE CONFERENCE

1. **Supports the National Green Hydrogen Mission (2023):** Aims to make India a global hub for green hydrogen production and export.
2. **Advances Energy Security:** Promotes clean, affordable, and domestically produced energy, reducing reliance on fossil fuel imports.
3. **Climate Leadership:** Aligns with India's net-zero 2070 goal and Nationally Determined Contributions (NDCs) under the Paris Agreement.
4. **Industrial Transformation:** Enables decarbonisation of hard-to-abate sectors such as steel, cement, refining, and fertilizers.
5. **Economic Opportunities:** Encourages job creation, green skill development, and technology start-ups in the emerging hydrogen economy.

WAY FORWARD

1. **Policy Clarity and Regulatory Framework:** Develop clear and stable policies on pricing, certification, and carbon accounting for green hydrogen to ensure investor confidence and long-term planning.
2. **Infrastructure Expansion:** Establish integrated hydrogen hubs, dedicated transport and storage networks, and port facilities to support both domestic use and international exports.
3. **Technology Collaboration and R&D:** Strengthen joint research with global partners to advance electrolyser efficiency, fuel cell innovation, and low-cost hydrogen production technologies.
4. **Financial Innovation:** Promote green bonds, viability gap funding, and public-private partnerships (PPPs) to mobilize large-scale

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investment in hydrogen production and infrastructure.

5. **Skill Development and Capacity Building:** Introduce specialized training modules under Skill India and collaborate with technical institutes to build a skilled workforce for the emerging hydrogen ecosystem.

6. **Sustainability and Global Cooperation:** Align national efforts with international standards and certification systems to ensure environmental sustainability and enable India's integration into the global green hydrogen market.

CONCLUSION

The ICGH 2025 reflects India's growing leadership in the global clean energy transition. By integrating technology, policy, and finance, the conference will strengthen India's ambition to become a green hydrogen powerhouse, ensuring energy security, climate resilience, and sustainable growth in alignment with Viksit Bharat @2047.

Prelims question:

Q. Consider the following statements regarding the International Conference on Green Hydrogen (ICGH 2025):

1. It is being organised by the Ministry of Petroleum and Natural Gas.
2. The conference aims to accelerate the implementation of the National Green Hydrogen Mission.
3. The International Renewable Energy Agency (IRENA) is among the participating organisations.

Which of the above statements is/are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2, and 3

Answer: A

Mains Question:

Q. Discuss the significance of the International Conference on Green Hydrogen (ICGH 2025) in advancing India's National Green Hydrogen Mission and its role in achieving energy security and climate goals.

(250 words)

INDIA'S BIOSPHERE RESERVES: GUARDIANS OF ECOLOGY AND SUSTAINABLE DEVELOPMENT

WHY IN THE NEWS?

On November 3, 2025, the world observed the International Day for Biosphere Reserves, celebrating regions that exemplify harmony between people and nature. Designated by UNESCO, this day recognizes biosphere reserves as "living laboratories" for sustainable development—spaces where biodiversity conservation, research, education, and local livelihoods coexist. India joined the global celebration, showcasing its robust network of biosphere reserves that span mountains, forests, islands, and coasts. The observance highlighted India's leadership in integrating environmental conservation with inclusive community development.

WHAT ARE BIOSPHERE RESERVES?

Biosphere Reserves (BRs) are specially designated areas where conservation of biodiversity coexists with sustainable use of natural resources. They serve as testing grounds for sustainable living and eco-friendly practices, ensuring ecological balance while meeting human needs.

Each biosphere reserve consists of three interrelated zones:

Core Zone: A Strictly protected area for biodiversity conservation.

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Buffer Zone: Surrounds the core, allowing limited human activity like research and eco-tourism.

Transition Zone: Area of sustainable resource use involving local communities.

These reserves embody the principle of "Think globally, act locally", providing real-world models for balancing ecology and economy.

UNESCO'S MAN AND BIOSPHERE (MAB) PROGRAMME

Established in 1971, UNESCO's Man and the Biosphere (MAB) Programme aims to improve relationships between people and their environments. It integrates natural and social sciences to promote sustainable use of ecosystems and address challenges such as biodiversity loss, climate change, and sustainable development.

The World Network of Biosphere Reserves (WNBR) under the MAB Programme connects over 700 sites across 134 countries, protecting over 7 million sq km and supporting 260 million people.

The WNBR promotes:

1. Conservation of biodiversity and ecosystems.
2. Research on human–nature interactions.
3. Exchange of knowledge and capacity building.
4. Models for climate adaptation and community-based resource management.

BIOSPHERE RESERVES IN INDIA

India has 18 notified Biosphere Reserves, covering approximately 91,425 sq km, of which 13 are part of UNESCO's WNBR. These reserves showcase India's ecological diversity—from the Nilgiri Mountains and Sundarbans to the Gulf of Mannar and Cold Desert of Himachal Pradesh (added in 2025).

The Biosphere Reserve Division under the Ministry of Environment, Forest and Climate Change (MoEFCC) manages the programme as part of the Centrally Sponsored Scheme (CSS) on Biodiversity Conservation.

Funding ratio: 60:40 (Centre); 90:10 for NE and Himalayan States.

Budget (2025–26): ₹10 crore, doubled from the previous year.

This initiative empowers local communities by promoting eco-development, alternative livelihoods, and reduced dependence on forest resources, particularly in buffer and transition zones.

IMPACT OF CONSERVATION EFFORTS

1. **Biodiversity Conservation:** Safeguarded diverse species and habitats across fragile ecosystems.
2. **Community Empowerment:** Enabled forest-dependent and tribal communities to benefit from eco-tourism, sustainable agriculture, and value-added forest products.
3. **Climate Resilience:** Supported ecosystem-based adaptation, water security, and forest regeneration.
4. **Scientific Research:** Promoted interdisciplinary studies on ecology, socio-economics, and climate change.
5. **Global Recognition:** India's proactive role under the MAB Programme has positioned it among global leaders in biosphere management.

As per the FAO's Global Forest Resources Assessment 2025, India ranks 9th in total forest area and 3rd in annual forest gain, reflecting effective conservation policies and community participation.

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SIGNIFICANCE

1. **Ecological Balance:** Biosphere Reserves safeguard fragile ecosystems, maintain species diversity, and ensure ecological stability.
2. **Sustainable Livelihoods:** They promote eco-friendly income sources like eco-tourism, organic farming, and traditional handicrafts, reducing dependence on forests.
3. **Climate Action:** Functioning as natural carbon sinks, they enhance ecosystem-based climate adaptation and resilience.
4. **Research and Education:** Serve as natural laboratories for biodiversity studies, environmental education, and policy innovation.
5. **Cultural Preservation:** Support conservation of traditional knowledge, indigenous practices, and harmonious human–nature relationships.
6. **Global Cooperation:** Strengthen India's leadership in biodiversity conservation and international climate partnerships under UNESCO's MAB framework.

WAY FORWARD

1. **Expand the Network:** Identify and designate new biosphere reserves across underrepresented ecosystems like coasts, deserts, and grasslands.
2. **Integrate Climate Resilience:** Link biosphere management with national and local climate adaptation strategies.
3. **Empower Local Communities:** Enhance participatory governance, ensuring equitable benefits for tribal and forest-dependent populations.
4. **Leverage Technology:** Deploy GIS, drones, and AI for ecological mapping, monitoring, and sustainable resource management.
5. **Promote Sustainable Tourism:** Develop responsible tourism circuits that generate income while minimizing ecological footprints.
6. **Strengthen Global Partnerships:** Deepen South–South and international collaboration through the World Network of Biosphere Reserves for knowledge and capacity sharing.

CONCLUSION

The International Day for Biosphere Reserves 2025 highlights India's enduring commitment to coexistence between humans and nature. Through a blend of traditional knowledge, modern science, and community participation, India's biosphere reserves exemplify sustainable living in action. As climate change and biodiversity loss accelerate, these reserves stand as beacons of hope—proving that environmental protection and human progress can thrive together.

Prelims question:

Q. Which of the following statements about Biosphere Reserves in India is/are correct?

1. All Biosphere Reserves in India are part of the World Network of Biosphere Reserves.
2. The Biosphere Reserve programme is implemented by the MoEFCC under a Centrally Sponsored Scheme.
3. The Cold Desert Biosphere Reserve was the latest Indian addition to UNESCO's World Network in 2025.

Select the correct answer:

(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

Answer: B

Mains Question:

Q. Biosphere Reserves serve as living laboratories for achieving harmony between conservation and development. Discuss the

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role of India's Biosphere Reserve network in advancing sustainable development and community well-being.

(250 words)

BUILDING A SUSTAINABLE ENERGY FUTURE: INDIA'S GREEN HYDROGEN INITIATIVES

WHY IN THE NEWS?

India's energy transition is entering a decisive phase, as the country reduces its dependence on fossil fuels and increases domestic clean energy production. This is in line with its vision of becoming a developed nation by 2047 and achieving Net Zero by 2070. In this transition, Green hydrogen, has emerged as a clean, scalable fuel alternative that can decarbonize hard-to-abate sectors, reduce import dependence on fossil fuels, and support India's goals for energy security and industrial growth.

The Indian government launched the National Green Hydrogen Mission (NGHM) in 2023, as an umbrella programme that aims to establish a Green Hydrogen ecosystem and catalyse a systemic response to the opportunities and challenges in this sector.

UNDERSTANDING GREEN HYDROGEN

1. Hydrogen is emerging as the fuel of the future because it produces only water when burnt, emitting no carbon dioxide. However, hydrogen's environmental credentials depend on how it is produced:

2. **Grey Hydrogen:** Derived from natural gas or coal, emitting CO_2.

3. **Blue Hydrogen:** Produced from fossil fuels but with carbon capture and storage (CCS).

4. **Green Hydrogen:** Generated through electrolysis of water using renewable energy sources like solar and wind, making it entirely carbon-free.

As per Government standards, hydrogen qualifies as "green" if lifecycle emissions are below 2 kg CO_2 equivalent per kg of hydrogen. It can also be produced through biomass conversion, provided the same threshold is met.



VISION AND OBJECTIVES OF THE MISSION

The National Green Hydrogen Mission envisions making India the global leader in clean hydrogen production and technology development. Its major objectives include:

1. Reducing dependence on fossil fuel imports and improving energy security.
2. Enhancing industrial competitiveness through low-carbon manufacturing.
3. Decarbonising key sectors such as steel, fertilizers, and transport.
4. Creating a green technology ecosystem with R&D, skill development, and innovation.
5. Building export capability for hydrogen and its derivatives like green ammonia and methanol.

MISSION TARGETS AND SCALE

By 2030, India aims to:

1. Produce 5 million tonnes of green hydrogen annually.
2. Install 125 GW of additional renewable energy capacity dedicated to hydrogen production.

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3. Attract ₹8 lakh crore in investments and create over 6 lakh jobs.
4. Reduce fossil fuel imports by ₹1 lakh crore per year.
5. Avoid 50 million metric tonnes of CO_2 emissions annually.

As of May 2025, 19 companies have been allocated an annual green hydrogen production capacity of 8.62 lakh tonnes, and 15 firms have been awarded 3,000 MW of electrolyzer manufacturing capacity.

MISSION ARCHITECTURE AND FUNDING

Component	Allocation (₹ crore)	Focus Area
Strategic Interventions for Green Hydrogen Transition (SIGHT)	17,490	Electrolyzer manufacturing & hydrogen production incentives
Pilot Projects	1,466	Demonstration in industrial, transport & shipping sectors
Research & Development	400	Technology innovation and cost reduction
Other Components	388	Skill building, awareness, and coordination

FOUR KEY PILLARS OF IMPLEMENTATION

1. **Policy and Regulatory Framework:** Enabling laws, energy access mechanisms, and grid integration measures to make hydrogen production cost-competitive.
2. **Demand Creation:** Mandating gradual replacement of fossil-based hydrogen in industries with green hydrogen.
3. **R&D and Innovation:** Supporting technology development across the hydrogen value chain.
4. Infrastructure and Ecosystem Development: Creating hydrogen hubs, transport infrastructure, and export facilities.

MAJOR SCHEMES AND INITIATIVES UNDER THE NATIONAL GREEN HYDROGEN MISSION (NGHM)

Initiative / Scheme	Key Features	Implementing / Nodal Agency	Budget / Support
(i) SIGHT Programme (Strategic Interventions for Green Hydrogen Transition)	• Flagship incentive mechanism promoting domestic manufacturing of electrolyzers. • Supports production and supply of green hydrogen for sectors liske fertilizer, refinery, and mobility.	Ministry of New and Renewable Energy (MNRE)	₹17,490 crore
(ii) Green Hydrogen Hubs	• Development of integrated hydrogen ecosystems at major ports. • Deendayal (Gujarat), V.O. Chidambaranar (Tamil Nadu), and Paradip (Odisha) designated as hubs for production, storage, consumption, and export.	Ministry of Ports, Shipping and Waterways	—
(iii) Green Hydrogen Certification Scheme of India (GHCI)	• Ensures lifecycle emission-based certification for transparency and credibility. • Establishes framework for "Green Hydrogen" labelling and tracking.	Bureau of Energy Efficiency (BEE) – Nodal authority for accrediting certifying agencies	Launched April 2025

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(iv) Strategic Hydrogen Innovation Partnership (SHIP)	• Public–private R&D consortium promoting collaboration between government, academia, and industry. • Supports 23 ongoing R&D projects and start-ups (up to ₹5 crore each). • Second phase (2025) under EU–India Trade and Technology Council with 30+ joint projects.	MNRE with public-private R&D entities	₹400 crore (R&D fund) + ₹100 crore (for start-ups)



SECTORAL IMPLEMENTATION PATHWAYS

1. Industrial Applications

- **Fertilizers:** Green ammonia auctions for 7.24 lakh tonnes per annum at ₹55.75/kg.
- **Petroleum Refineries:** Replacing grey hydrogen in refining processes.
- **Steel:** Five pilot projects underway to assess hydrogen-based direct reduction processes.

2. Mobility and Transport

- **Road Transport:** ₹208 crore pilot with 37 hydrogen buses/trucks and 9 refueling stations across 10 routes.

3. Shipping:

- India's first port-based hydrogen project at V.O. Chidambaranar Port (Sept 2025) with a 10 Nm^3/hr facility.
- Green Methanol Bunkering (₹42 crore) project to enable a Kandla–Tuticorin Green Shipping Corridor.
- **High-Altitude Mobility (Leh):** World's highest-altitude hydrogen mobility project (3,650 m) — 5 hydrogen buses and fueling station, cutting 350 MT CO_2/year and generating 230 MT oxygen, equivalent to 13,000 trees planted.

BUILDING GLOBAL PARTNERSHIPS

1. **World Hydrogen Summit 2024 (Rotterdam):** India inaugurated its first India Pavilion, showcasing investment opportunities.
2. **EU–India Collaboration:** Over 30 joint proposals under the Trade and Technology Council.
3. **India–UK Standards Partnership (Feb 2025):** Harmonising global hydrogen safety and standardisation norms.
4. **Germany (H2Global):** MoU between SECI and H2Global Stiftung (Nov 2024) for market-based export mechanisms.
5. **Singapore (Sembcorp Industries):** MoUs (Oct 2025) with Indian ports to build integrated production and export hubs.

CHALLENGES AHEAD

1. **High Production Cost:** Green hydrogen currently costs ₹250–300 per kg, higher than grey hydrogen.
2. **Infrastructure Gaps:** Limited hydrogen pipelines, storage facilities, and refueling stations.
3. **Technological Dependence:** Electrolyzer manufacturing is still nascent in India.
4. **Water Requirement:** Electrolysis demands substantial freshwater, necessitating integration with desalination in coastal areas.
5. **Safety and Awareness:** Hydrogen's flammability calls for robust safety protocols and trained personnel.

WAY FORWARD

1. **Scaling Domestic Manufacturing:** Promote indigenous electrolyzer technologies through Production Linked Incentives.
2. **Focus on Cost Reduction:** Invest in R&D for low-cost catalysts, advanced storage materials, and efficient renewable integration.
3. **Regional Hydrogen Clusters:** Establish coastal and inland industrial hubs linked with logistics and ports.
4. **Public–Private Collaboration:** Strengthen SHIP to connect academia, startups, and industries.
5. **International Market Integration:** Build long-term export contracts with Europe and Asia.
6. **Inclusive Skill and Safety Framework:** Develop specialised training and certification programs for technicians and engineers.

CONCLUSION

The National Green Hydrogen Mission stands at the intersection of climate action, industrial policy, and national self-reliance. Leveraging one of the world's most competitive renewable energy ecosystems, India is charting a path toward a low-carbon, technology-driven, and globally connected energy future.

By fostering innovation, creating jobs, reducing emissions, and positioning India as a green hydrogen powerhouse, the Mission exemplifies the nation's commitment to a sustainable, secure, and self-sufficient future a true embodiment of "Viksit Bharat @2047" powered by clean energy.

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Prelims question:

Q. With reference to the National Green Hydrogen Mission (NGHM), consider the following statements:

1. The Bureau of Energy Efficiency (BEE) is the nodal authority for certifying "Green Hydrogen" production facilities.
2. The SIGHT Programme provides incentives for both manufacturing of electrolyzers and production of green hydrogen.
3. All Green Hydrogen Hubs in India are located in inland industrial clusters.

Which of the statements given above is/are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2, and 3

Answer: A

Mains Question:

Q. Discuss the objectives, key initiatives, and challenges of India's National Green Hydrogen Mission (NGHM). How can the Mission contribute to India's goal of achieving Net Zero by 2070?

(250 words)

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22ND INDIA–US MCG MEETING: ADVANCING DEFENCE INTEGRATION AND REGIONAL SECURITY IN THE INDO-PACIFIC

WHY IN THE NEWS?

The 22nd meeting of the India–US Military Cooperation Group (MCG), held in Hawaii on November 3–4, 2025, marked another milestone in the deepening strategic and defence partnership between the two nations. The high-level meeting underscored the commitment of both countries to enhance interoperability, joint preparedness, and defence industrial cooperation, while reaffirming their shared vision for a free, open, and secure Indo-Pacific region.



OVERVIEW OF THE 22ND MCG MEETING

The meeting was co-chaired by Air Marshal Ashutosh Dixit, Chief of Integrated Defence Staff (CISC), representing India, and Lieutenant General Joshua M. Rudd, Deputy Commander, US Indo-Pacific Command, representing the United States. The discussions focused on enhancing operational cooperation, defence industrial collaboration, and strategic coordination to address emerging regional and global challenges.

According to the Headquarters of Integrated Defence Staff (HQ IDS), the meeting emphasized strengthening joint military planning, logistics interoperability, and technology sharing to build a more resilient security architecture. Both nations reaffirmed their shared commitment to maintaining a free, open, and rules-based Indo-Pacific, underpinned by respect for international law and sovereignty.

BACKGROUND AND CONTEXT

The India–US Military Cooperation Group (MCG) serves as an institutional mechanism under the India–US Defence Framework Agreement, which guides cooperation across all three services—Army, Navy, and Air Force. The 21st MCG meeting, held in New Delhi in November 2024, had laid the foundation for deeper collaboration in capacity building, training exchanges, and defence industry cooperation.

Over the past decade, India–US defence ties have evolved from a buyer-seller relationship to a comprehensive strategic partnership, involving technology co-development, joint exercises, and supply chain integration. Foundational agreements like LEMOA (Logistics Exchange Memorandum of Agreement), COMCASA (Communications Compatibility and Security Agreement), and BECA (Basic Exchange and Cooperation Agreement) have further institutionalized military cooperation and secure information sharing.

KEY AREAS OF DISCUSSION

1. **Operational and Strategic Cooperation:** Both sides discussed increasing the scale and frequency of joint military exercises, such as Yudh Abhyas, Malabar, and Cope India, to enhance interoperability and tactical coordination.
2. **Defence Industrial Collaboration:** The meeting focused on advancing joint research, co-development, and co-production of critical defence technologies under the Initiative on Critical and Emerging Technologies (iCET) and the Defence Technology and Trade Initiative (DTTI).
3. **Capacity Building and Training:** Expansion of officer exchange programs, joint war-gaming, and simulation-based training was discussed to improve human resource capabilities and operational synergy.
4. **Maritime Domain Awareness:** Enhanced information sharing and joint monitoring mechanisms were reviewed to ensure freedom of navigation and maritime security in the Indo-Pacific.
5. **Logistics and Infrastructure Integration:** Both sides emphasized leveraging logistics agreements to support cross-service access, repair, and replenishment at each other's facilities, thereby improving rapid deployment and operational reach.

RECENT DEFENCE ENGAGEMENTS

The growing synergy between the two militaries was demonstrated in the India–US joint military exercise held in September 2025, one of the largest bilateral army drills. The exercise involved a 450-member Indian Army contingent led by a Madras Regiment battalion, training alongside US forces in combined manoeuvres, counterterrorism operations, and peacekeeping missions. This showcased enhanced tactical interoperability and mutual trust between the two armed forces.

STRATEGIC SIGNIFICANCE OF THE MCG

1. **Institutionalized Defence Dialogue:** Strengthens continuous engagement and policy coordination between the Indian and US militaries.
2. **Enhanced Interoperability:** Promotes operational compatibility through joint exercises and logistics support mechanisms.
3. **Technology and Industrial Cooperation:** Encourages co-development of advanced defence technologies, supporting India's Atmanirbhar Bharat (self-reliant defence ecosystem).
4. **Maritime Security and Indo-Pacific Stability:** Reinforces efforts to maintain a rules-based order and counterbalance aggressive posturing in the Indo-Pacific.
5. **Comprehensive Strategic Partnership:** Advances shared democratic values, counterterrorism cooperation, and regional security priorities.
6. **Humanitarian and Disaster Response:** Builds coordinated frameworks for HADR (Humanitarian Assistance and Disaster Relief) operations and crisis response.

WAY FORWARD

1. **Deepen Defence Industrial Integration:** Expand technology co-production and innovation in advanced domains such as cyber, AI, and unmanned aerial systems.
2. **Expand Maritime Cooperation:** Strengthen joint naval operations, submarine rescue capabilities, and real-time information exchange to secure sea lanes of communication.
3. **Enhance Tri-Service Coordination:** Conduct more integrated Army–Navy–Air Force exercises to achieve greater jointness and operational efficiency.
4. **Leverage Start-up Ecosystems:** Encourage start-up and private-sector collaboration for defence innovation under frameworks like iCET.
5. **Regional and Multilateral Partnerships:** Integrate India–US defence cooperation with broader QUAD, ASEAN, and Indo-Pacific partnerships to address regional contingencies.
6. **Strengthen Defence Supply Chains:** Develop resilient and trusted supply chains to reduce dependency and ensure strategic autonomy.

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7. **Sustain High-Level Engagements:** Institutionalize frequent dialogues between defence leaders to adapt to emerging geopolitical and technological challenges.

CONCLUSION

The 22nd India–US Military Cooperation Group (MCG) meeting symbolizes the steady transformation of India–US defence relations from transactional cooperation to a strategic and technological partnership. Through enhanced military interoperability, joint training, and defence industrial collaboration, both nations are shaping a secure, resilient, and rules-based Indo-Pacific. As India and the US continue to align their defence and strategic priorities, the MCG remains a vital pillar of their shared commitment to global peace, stability, and prosperity.

Prelims question:

Q. With reference to the India–US Military Cooperation Group (MCG), consider the following statements:

1. It serves as an institutional mechanism under the India–US Defence Framework Agreement.
2. It focuses exclusively on maritime security cooperation.
3. The 22nd MCG meeting was held in Hawaii in November 2025.

Which of the statements given above are correct?

(a) 1 and 2 only (b) 1 and 3 only

(c) 2 and 3 only (d) 1, 2 and 3

Answer: B

Mains Question:

Q. Discuss the significance of the India–US Military Cooperation Group (MCG) in strengthening bilateral defence partnership and maintaining stability in the Indo-Pacific region

(250 words)

INDIA–NEW ZEALAND FREE TRADE AGREEMENT: RENEWED MOMENTUM IN BILATERAL ECONOMIC RELATIONS

WHY IN THE NEWS?

India and New Zealand have begun the fourth round of negotiations for their proposed Free Trade Agreement (FTA) in Auckland from November 3 to 7, 2025. This round aims to accelerate progress toward a balanced, comprehensive, and mutually beneficial partnership between the two nations.



BACKGROUND

India and New Zealand have shared cordial relations based on Commonwealth ties, democratic values, and people-to-people connections. However, bilateral trade has remained modest despite complementarities between the two economies.

The formal launch of the FTA process took place on March 16, 2025, following the visit of New Zealand Prime Minister Christopher Luxon to India. During the meeting between Commerce and Industry Minister Piyush Goyal and New Zealand's Trade and Investment Minister Todd McClay, both sides reaffirmed their commitment to deepen economic and trade engagement.

FOCUS AREAS OF THE FOURTH ROUND

The current negotiation round is centered on:

1. **Trade in Goods:** Market access, tariff reduction, and export facilitation.
2. **Trade in Services:** Mobility of professionals, recognition of qualifications, and service sector cooperation.
3. **Rules of Origin:** Frameworks to determine the national source of a product to ensure fair trade.

Officials from both sides are working to resolve pending issues from previous rounds and lay the groundwork for early conclusion of the agreement.

SIGNIFICANCE OF THE PROPOSED FTA

1. **Enhanced Market Access:** The agreement will open new opportunities for Indian exports in agriculture, technology, pharmaceuticals, and IT services.
2. **Investment Flows:** It is expected to attract more foreign direct investment (FDI), particularly in clean energy, agri-tech, and education.
3. **Diversification of Trade Partners:** Strengthening economic ties with New Zealand supports India's efforts to diversify export markets beyond traditional partners.
4. **Sustainable and Inclusive Growth:** Both nations aim to include environmental and social dimensions in the trade framework, aligning with global sustainability goals.
5. **Boost to Indo-Pacific Cooperation:** A stronger India–New Zealand partnership contributes to economic stability and cooperation in the broader Indo-Pacific region.

CHALLENGES AHEAD

1. **Agricultural Market Sensitivities:** New Zealand's competitive dairy and agricultural sectors raise concerns for India's domestic farmers and cooperatives. India seeks to protect its dairy market from potential import surges.
2. **Tariff and Non-Tariff Barriers:** Both sides differ on tariff reduction schedules and standards related to quality, packaging, and safety—posing hurdles in finalizing tariff lines.
3. **Services Liberalization:** India is keen on greater mobility for IT professionals and skilled workers, while New Zealand's visa policies remain restrictive. This divergence complicates negotiations on trade in services.
4. **Regulatory Harmonization:** Differences in technical standards, sanitary and phytosanitary measures, and certification systems create compliance challenges for exporters.
5. **Protection of Domestic Industries:** India emphasizes the need to ensure the FTA does not harm small manufacturers, MSMEs, and rural producers through sudden import competition.
6. **Geographical Distance and Logistics Costs:** The long transit routes between India and New Zealand add to trade costs, reducing competitiveness in perishable and time-sensitive goods.

WAY FORWARD

1. **Balanced and Inclusive Approach:** The agreement must balance offensive and defensive interests, ensuring fair access while safeguarding sensitive sectors such as agriculture and dairy.
2. **Deepening Sectoral Cooperation:** Collaboration in agri-tech, renewable energy, digital innovation, and education can serve as new engines of growth for both economies.
3. **Facilitating Services Mobility:** Streamlining visa norms and mutual recognition of professional qualifications can enhance movement of students, experts, and skilled workers.
4. **Enhancing Trade Infrastructure:** Both countries should improve logistics, connectivity, and customs cooperation to reduce trade costs and ensure timely delivery of goods.
5. **Strengthening Institutional Mechanisms:** Creating joint working groups and technical

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committees can help resolve regulatory issues and monitor implementation effectively.

6. **Sustained Diplomatic and Business Engagement:** Regular high-level meetings and business-to-business interactions will maintain political momentum and encourage private sector participation in realizing FTA benefits.

CONCLUSION

Prelims question:

Q. With reference to the proposed India–New Zealand Free Trade Agreement (FTA), consider the following statements:

1. The FTA negotiations focus on Trade in Goods, Trade in Services, and Rules of Origin.
2. The agreement aims to enhance India's trade engagement in the Indo-Pacific region.
3. The FTA was formally launched during the visit of the Indian Prime Minister to New Zealand in 2025.

Which of the statements given above are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2, and 3

Answer: A

Mains Question:

Q. Discuss the significance of the proposed India–New Zealand Free Trade Agreement (FTA) in strengthening bilateral and Indo-Pacific economic cooperation. What are the major challenges that need to be addressed for its successful conclusion?

(250 words)

A LANDMARK DIPLOMATIC ENGAGEMENT: STRATEGIC OUTCOMES OF PM MODI'S 2025 BHUTAN VISIT

WHY IN THE NEWS?

At the invitation of His Majesty Jigme Khesar Namgyel Wangchuck, King of Bhutan, Prime Minister Narendra Modi undertook a two-day State Visit to Bhutan on 11–12 November 2025. The visit coincided with Bhutan's celebrations of the 70th Birth Anniversary of His Majesty the Fourth Druk Gyalpo, where PM Modi was honoured as the Guest of Honour at the national event in Changlimithang. He also participated in the Global Peace Prayer Festival and paid respects to the Holy Piprahwa Relics of Lord Buddha brought from India for public veneration.



KEY HIGHLIGHTS OF THE VISIT

1. High-Level Interactions

- PM Modi was granted audiences with:
- His Majesty The King of Bhutan
- His Majesty the Fourth Druk Gyalpo

Interacted with Bhutanese Prime Minister Dasho Tshering Tobgay

Their discussions covered:

Bilateral development cooperation hydropower and energy security connectivity and trade new sectors such as STEM, fintech, digital payments, and space regional and global issues Bhutan also expressed

deep condolences over the Delhi explosion (10 November 2025), demonstrating mutual solidarity during crises.

INDIA–BHUTAN RELATIONS: KEY OUTCOMES

Theme / Area	Key Highlights	Significance
1. Development Partnership & Bhutan's 13th Five Year Plan	• India reaffirmed full support for Bhutan's 13th FYP. • Support to Economic Stimulus Programme, flagship projects, community-centred initiatives. • Bhutan appreciated India's role in socio-economic transformation.	Strengthens traditional partnership; ensures Bhutan's stable development trajectory.
2. Support for Gelephu Mindfulness City	• India expressed full support for the visionary Gelephu Mindfulness City. • Announcement: new Immigration Check Post at Hatisar, Assam for smoother movement.	Integrates Bhutan into regional value chains; enhances cross-border mobility and investments.
3. Hydropower Cooperation	• Punatsangchhu-II (1020 MW) inaugurated jointly; Bhutan begins exporting power to India. • Punatsangchhu-I (1200 MW) construction resumes. • India announces ₹40 billion Line of Credit for energy projects.	Hydropower is the backbone of India–Bhutan ties; boosts regional energy security and Bhutan's revenue.
4. Connectivity & Infrastructure	• Land: Darranga ICP operational (Nov 2024); progress on new ICPs. • Waterways: Jogigopha IWT & MMLP operational (Mar 2025). • Rail: MoU & Steering Committee for Gelephu–Kokrajhar and Samtse–Banarhat rail links. • Supplies: Institutionalised supply of essentials & fertilisers.	Enhances physical connectivity; opens Bhutan's first rail lines; strengthens trade, tourism, and logistics.
5. Cooperation in Emerging Sectors	• STEM: Indian teachers strengthening Bhutan's education ecosystem. • Fintech: Phase II of UPI integration for seamless digital payments. • Space: Progress under Joint Plan of Action (remote sensing, disaster management).	Positions Bhutan for future-ready growth; deepens digital, space and educational collaboration.
6. Cultural & People-to-People Linkages	• veneration of Piprahwa Relics. • Consecration of Royal Bhutan Temple in Rajgir. • Land allocated in Varanasi for Bhutanese temple & guesthouse.	Reinforces civilisational ties; boosts tourism, spiritual links, and cultural diplomacy.
7. New MoUs Signed	• Renewable Energy – collaboration between MENR (Bhutan) & MNRE (India). • Health Sector Cooperation between Ministries of Health. • Mental Health Linkages – PEMA Secretariat & NIMHANS.	Broadens cooperation into human development, social welfare, and healthcare.

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STRATEGIC SIGNIFICANCE OF THE VISIT

1. **Diplomatic and Strategic Dimension:** Reinforces India's "Neighbourhood First" and "Act East" policies.Strengthens Bhutan's role as a buffer and trusted partner in the Himalayan region. Counters external influence by deepening economic and cultural integration.
2. **Economic Integration:** Boosts energy security through hydropower trade. Enables Bhutan's smooth transition to a sustainable, self-reliant digital and green economy. Enhances connectivity for trade, mobility, and regional value chains.
3. **Cultural & Civilizational Bonds:** Celebrations related to the Buddha relics and the Bhutanese temples strengthen India's Buddhist diplomacy. Reaffirms generations of cultural continuity between the two nations.
4. **People-Centric Cooperation:** Digital payments, STEM education, health cooperation, and essential supplies directly impact citizens. UPI linkage and teacher/nurse contributions enhance daily connectivity and mutual goodwill.

WAY FORWARD

1. **Accelerate Connectivity Projects:** Fast-track rail links, ICPs, and multimodal corridors to deepen trade, tourism, and regional integration.
2. **Strengthen Sustainable Energy Cooperation:** Ensure timely completion of hydropower projects, diversify into solar and green hydrogen, and enhance cross-border energy trade.
3. **Advance Digital & Fintech Integration:** Expand UPI interoperability, digital public infrastructure cooperation, cybersecurity collaboration, and tech skilling.
4. **Promote Collaboration in Emerging Technologies:** Jointly develop capabilities in AI, space technology, disaster management, and STEM research.
5. **Enhance People-to-People and Cultural Diplomacy:** Build Buddhist heritage circuits, promote cultural exchanges, and improve cross-border mobility.
6. **Expand Development Partnership in Social Sectors:** Support Bhutan's education, healthcare, mental health, and community development priorities under the 13th FYP.
7. **Support Bhutan's Economic Diversification:** Assist in developing tourism, start-up ecosystems, agri-value chains, and sustainable industries to reduce reliance on hydropower.

CONCLUSION

Prime Minister Modi's State Visit to Bhutan in November 2025 reaffirmed the time-tested, special friendship between the two nations, rooted in trust, mutual respect, and shared cultural heritage. With significant outcomes in hydropower, connectivity, digital integration, renewable energy, health, and cultural cooperation, the visit has set the foundation for a new era of India-Bhutan partnership. Both sides reaffirmed the tradition of regular high-level exchanges, ensuring that bilateral relations remain strong, forward-looking, and resilient in a rapidly changing regional and global landscape.

Prelims question:

Q. Consider the following:

1. The Punatsangchhu-II Hydroelectric Project is the first joint hydropower project between India and Bhutan.
2. The Gelephu Mindfulness City is a Bhutanese initiative supported by India, including the establishment of an Immigration Check Post at Hatisar in Assam.
3. Under India–Bhutan cooperation, Phase II of UPI integration will allow Bhutanese visitors to make digital payments in India using local mobile applications.

How many of the above statements are correct?

(a) Only one (b) Only two

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(c) All three (d) None

Answer: B

Mains Question:

Q. India and Bhutan share a unique partnership rooted in trust, mutual respect, and deep cultural ties. In this context, critically examine the strategic significance of Prime Minister Narendra Modi's November 2025 State Visit to Bhutan.

(250 words)

SURYAKIRAN 2025: DEEPENING INDIA–NEPAL MILITARY TIES AND REGIONAL STABILITY

WHY IN THE NEWS?

India and Nepal are set to begin the 19th edition of the bilateral military exercise 'Suryakiran' from November 25 to December 8, 2025, in Pithoragarh, Uttarakhand. This annual exercise—one of the largest bilateral initiatives between the two armies—aims to deepen defence cooperation, enhance operational interoperability, and strengthen historical military ties rooted in geography, culture, and strategic interdependence.



INTRODUCTION

Exercise Suryakiran is a key component of India–Nepal defence engagement, conducted alternately in both countries since its inception. It focuses on counter-terrorism, jungle warfare, high-altitude operations, disaster response, and technological integration, reflecting shared regional security challenges.

The 19th edition highlights the growing emphasis on mountain warfare, counter-terrorism readiness, and modern military applications, especially as both countries operate in rugged Himalayan terrains and face similar security threats.

OBJECTIVES OF EXERCISE SURYAKIRAN

The 2025 edition aims to:

1. Enhance operational synergy between the Indian and Nepalese armies.
2. Train forces in jungle warfare and counter-terrorism operations in hilly and mountainous terrain.
3. Integrate niche military technologies to improve surveillance, mobility, and tactical efficiency.
4. Share best practices, doctrines, and Standard Operating Procedures (SOPs).
5. Strengthen interoperability for UN peacekeeping operations, where both countries are major contributors.
6. Reinforce trust, camaraderie, and long-standing defence ties.

KEY FEATURES OF THE 19TH EDITION OF EXERCISE SURYAKIRAN (2025)

Category	Details
1. Location & Duration	Location: Pithoragarh, Uttarakhand Duration: November 25 – December 8, 2025
2. Training Components	• Advanced jungle warfare drills • Mountain-based counter-terror operations • Room intervention & hostage-rescue drills • High-altitude survival techniques • Drone-based surveillance & anti-drone training • Joint tactical exercises using modern communication & battlefield systems

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3. Technological Integration	• UAV-based reconnaissance • AI-enabled battlefield awareness • Terrain-specific tactical communication • Use of simulators for combat training Note: Marks a shift from traditional infantry drills to tech-enabled joint operations.

REFLECTION ON THE 18TH EDITION (2024–25): A FOUNDATION FOR 2025

The previous edition, held in Saljhandi, Nepal, included:

1. 334 Indian Army personnel
2. Focus on operational preparedness, aviation support, medical support, and environmental protection
3. Exchange of best practices on mountain warfare
4. Combined tasks to respond jointly in disaster-prone situations
5. These outcomes built trust and set the stage for more sophisticated interoperability exercises in 2025.

SIGNIFICANCE OF EXERCISE SURYAKIRAN FOR INDIA–NEPAL MILITARY & STRATEGIC RELATIONS

Category	Key Points
1. Strengthening Defence Cooperation	• Suryakiran is a cornerstone of India–Nepal defence ties. • India sssupports Nepal Army through: – Modernisation assistance – Supply of defence equipment – Extensive training programs – Military scholarships
2. Enhancing Interoperability	• Joint training helps soldiers understand each other's operational strategies. • Harmonisation of SOPs. • Better coordination for joint missions, including UN Peacekeeping (UNPKF).
3. Addressing Common Security Challenges	**Both nations face:** • Cross-border crime • Smuggling & human trafficking • Natural disasters (floods, earthquakes) • Border-security challenges in difficult terrain → Exercise improves preparedness for these shared concerns.
4. Cooperation in HADR (Humanitarian Assistance & Disaster Relief)	• India has played a key role in Nepal's disaster response: • 2015 Earthquake: Rescue teams, medical aid, reconstruction • COVID-19: Vaccines, supplies • Ongoing support: Communication & logistics systems • Joint training enhances HADR coordination and readiness
5. Building People-to-People & Military-to-Military Bonds	• Thousands of Gorkha soldiers serve in the Indian Army. • Officers attend courses in each other's academies. • A shared soldiering tradition deepens trust and camaraderie.

GEOPOLITICAL AND STRATEGIC DIMENSIONS

1. **Strengthening Stability in the Himalayan Region:** The exercise enhances joint preparedness for operations in mountainous terrain, ensuring coordinated responses to security challenges along the sensitive Himalayan belt. This cooperation contributes to long-term regional stability and reinforces secure borders.

2. **Maintaining Strategic Balance Amid External Influence:** With Nepal deepening its engagement with other global powers, India's steady defence partnership through Suryakiran helps maintain strategic equilibrium and ensures that the Himalayan region does not become a zone of great-power competition.

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3. **Advancing India's Neighbourhood First Policy:** Regular military engagement supports India's broader diplomatic strategy of prioritising security, connectivity, and cooperation with its immediate neighbours. This exercise showcases India's commitment to Nepal's defence capacity-building and regional peace.

4. **Boosting Interoperability and Crisis Response:** The exercise strengthens interoperability between both armies, essential for coordinated responses during cross-border threats, counterterrorism operations, and natural disasters—particularly critical in the disaster-prone Himalayan region.

5. **Reinforcing People-to-People and Institutional Linkages:** Beyond strategic benefits, Suryakiran institutionalises military-to-military ties and reinforces cultural and historical bonds, as both armies share long-standing traditions such as the Gorkha regiments. This deepens mutual trust and limits any geopolitical drift.

CONCLUSION

The 19th edition of Exercise Suryakiran represents a continued commitment of India and Nepal to enhancing defence cooperation, interoperability, and preparedness in challenging mountainous terrains. As both nations face evolving regional security challenges, natural disasters, and emerging technological demands, the exercise strengthens military capabilities while deepening strategic trust. It is a strong example of India's Neighbourhood First Policy, reaffirming that India–Nepal relations are rooted in shared history, geography, culture, and security interests.

Prelims question:

Q. With reference to the India–Nepal joint military exercise 'Suryakiran', consider the following statements:

1. It is conducted annually and alternates between India and Nepal.
2. The exercise focuses primarily on naval operations and maritime surveillance.
3. It aims to enhance interoperability in mountain warfare and counter-terrorism operations.

Which of the statements given above is/are correct?

(a) 1 and 3 only (b) 2 only

(c) 1 only (d) 1, 2 and 3

Answer: A

Mains Question:

Q. Exercise 'Suryakiran' is one of the most significant institutionalised defence engagements between India and Nepal. Discuss its objectives, key features, and strategic significance for bilateral relations, with special reference to regional stability and India's Neighbourhood First Policy.

(250 words)

INDIA PRESSES FOR SSTA WITH US AFTER SUCCESS OF UK DOUBLE CONTRIBUTIONS CONVENTION

WHY IN THE NEWS?

India has renewed its demand for a Social Security Totalisation Agreement (SSTA) with the United States during the ongoing Bilateral Trade Agreement negotiations. This push aims to resolve the long-standing problem of double social security contributions paid by Indian professionals working temporarily in the US. The development gains significance as it comes soon after India successfully concluded a similar Double Contributions Convention (DCC) with the United Kingdom, giving fresh momentum to India's efforts to secure comparable agreements with major partner countries.

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BACKGROUND: INDIA'S TOTALISATION PUSH

India has been actively entering into agreements with major partner countries to protect the interests of its overseas workforce. Such agreements ensure that workers do not contribute simultaneously to social security systems of both the home and host countries, and that their contributions remain portable.

The recent DCC with the UK under the Comprehensive and Economic Trade Agreement (CETA) has strengthened India's negotiating position with the US and demonstrated its readiness to harmonise social protection commitments.

THE DCC AGREEMENT WITH THE UNITED KINGDOM: KEY FEATURES

Signed on 24 July under CETA, the India–UK Double Contributions Convention includes:

1. Exemption from UK social security contributions for Indian employees on temporary assignments (up to three years).
2. Benefit expected for around 75,000 Indian workers and 900+ companies operating in the UK.
3. Estimated savings of over ₹4,000 crore for employers and employees combined.
4. Ensures mobility of skilled professionals and provides financial relief for Indian firms operating in global value chains.

This agreement serves as a template for India's proposal to the US.

WHAT IS A SOCIAL SECURITY TOTALISATION AGREEMENT?

A Totalisation Agreement coordinates social security systems of two countries. Its objectives include:

1. **Avoidance of Double Contributions:** Workers contribute only to one social security system—usually their home country's—during short-term postings abroad.
2. **Portability of Social Security Benefits:** Workers can recover or transfer their accumulated contributions if they do not meet eligibility requirements abroad.
3. **Protection of Temporary Workers:** Prevents financial loss for professionals on short-duration visas who cannot complete the minimum contribution period for benefits.
4. **Promotes Trade and Labour Mobility:** Facilitates cross-border movement of talent, boosting bilateral economic engagement.

THE US CONTEXT: WHY INDIA SEEKS AN AGREEMENT

Indian workers in the US—mostly on H-1B and L-1 visas—face significant social security contribution losses:

1. They contribute around $3 billion every year to the US Social Security system.
2. Over the last decade, total contributions have exceeded $27.6 billion.
3. However, US law requires 40 quarters (10 years) of contributions to qualify for benefits.
4. Most Indian professionals stay for 3–6 years, making them ineligible for social security withdrawals.

INDIA'S PREPAREDNESS AND REFORM MEASURES

1. **National Social Security Data-Pooling Exercise:** India consolidated national social protection data to address US concerns with transparent, evidence-based assessment.

2. **Expanded EPF and Social Protection Coverage:** Formal social security coverage rose from 19% (2015) to 64.3% (2025) (ILO), reflecting wider inclusion and labour formalisation.

3. **Labour Codes Reforms:** The Code on Social Security, 2020 unified nine social security laws, creating a streamlined, modern, and verifiable framework.

4. **e-SHRAM Registration Drive:** Over 29 crore unorganised workers registered on the e-SHRAM portal, improving traceability and widening coverage.

5. **Strengthening ESIC Infrastructure:** Expansion of ESIC hospitals and dispensaries improved health protection, showcasing comprehensive social security readiness.

6. **Universal Account Number (UAN):** UAN ensured portability and transparency in EPF accounts, aligning India with global portability standards.

7. **Improved Compliance Systems:** Digital inspections, unified filings, and Aadhaar-based verification strengthened monitoring and reduced compliance gaps.

CHALLENGES IN REACHING AN AGREEMENT

1. **Concerns Over India's Social Security Coverage:** The US remains cautious due to gaps in India's informal sector coverage, differing benefit structures, and questions over portability and enforcement standards.

2. **Political Sensitivity in the US:** Exempting foreign workers from social security contributions is politically contentious, especially in an election-driven environment.

3. **Large Volume of Indian Workers:** The high number of Indian professionals in the US makes harmonisation complex and raises concerns about administrative burden and financial implications.

4. **Low Reciprocity for the US:** Very few American workers are employed in India, leading to the perception that the benefits of the agreement would heavily favour India.

5. **Differences in Social Security Frameworks:** Variations in contribution rates, benefit periods, eligibility norms (e.g., 40-quarter rule), and pension portability complicate alignment.

6. **Bureaucratic and Negotiation Hurdles:** Long-standing negotiations, slow inter-agency coordination, and differing priorities in trade talks delay finalisation of the agreement.

WAY FORWARD

1. **Strengthening Domestic Social Protection Systems:** Continued reforms in EPF, ESIC, and universal social security schemes will boost India's credibility and address US concerns.

2. **Deepening Diplomatic Engagement:** India must leverage platforms like TPF, iCET, and strategic dialogues to push the agreement as part of the broader trade and mobility framework.

3. **Active Stakeholder Consultations:** Regular engagement with IT, services sectors, and industry bodies like NASSCOM will help build a unified negotiation position.

4. **Offering Flexible, Phased Implementation:** India can propose differentiated rules for short-term vs. long-term workers, a step-wise rollout, and strong compliance protocols to reassure the US.

5. **Data-Driven Confidence Building:** India should present clear evidence of expanded social security coverage, digital monitoring, and improved enforcement supported by independent verification (e.g., ILO).

6. **Aligning With Global Best Practices:** Showcasing successful social security agreements with countries like Australia, Canada, Japan, and Germany can help demonstrate India's readiness to uphold commitments.

CONCLUSION

India's proposal for a Social Security Totalisation Agreement with the United States reflects its broader vision of protecting the global Indian workforce and creating a fairer, more predictable framework for

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labour mobility. With growing alignment in India–US trade, technology, and strategic cooperation, resolving this long-standing issue would mark a major step forward. Although challenges remain—especially regarding social security harmonisation and political sensitivities—the ongoing negotiations indicate strong intent on both sides to find an equitable solution.

Prelims question:

Q. Consider the following statements regarding a Social Security Totalisation Agreement (SSTA):

1. It prevents double social security contributions by allowing temporary workers to contribute to only one country's system.
2. It enables portability of social security benefits across countries.
3. Under US law, Indian temporary workers automatically receive a refund of their social security contributions after they return to India.

How many of the statements given above are correct?

(a) Only one (b) Only two

(c) All three (d) None

Answer: B

Mains Question:

Q. India has renewed its push for a Social Security Totalisation Agreement (SSTA) with the United States to address the issue of double social security contributions faced by Indian professionals. Discuss the significance of such an agreement, the challenges involved in its conclusion, and the way forward for India and the US.

(250 words)

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ISRO LAUNCHES INDIA'S HEAVIEST COMMUNICATION SATELLITE: A SHINING MILESTONE OF AATMANIRBHAR BHARAT

WHY IN THE NEWS?

On November 9, 2025, the Indian Space Research Organisation (ISRO) successfully launched the Indian Navy's advanced communication satellite GSAT-7R (CMS-03), marking a major milestone in India's defence preparedness and space capabilities. The satellite was launched onboard the LVM3-M5 (Baahubali) rocket from the Satish Dhawan Space Centre, Sriharikota, at 5:26 PM, and was placed precisely into its intended orbit.

This mission reinforces India's growing technological prowess and strengthens the Navy's network-centric warfare, real-time communication, and maritime domain awareness across the Indian Ocean Region.



WHAT IS GSAT-7R (CMS-03)?

GSAT-7R, also known as CMS-03, is India's heaviest indigenously developed multi-band military communication satellite, weighing 4,410 kg. Designed to provide secure communication for the Indian Navy, it offers:

1. Multi-band communication capabilities
2. Coverage across India and adjoining oceanic region
3. Minimum 15-year operational life
4. Advanced payloads and state-of-the-art technologies for maritime operations

CMS-03 is part of the GSAT-7 series, which includes GSAT-7 (Rukmini) and GSAT-7A, enhancing India's tri-services communication framework.

LAUNCH VEHICLE: LVM3-M5 (BAAHUBALI)

The mission used ISRO's heaviest rocket, LVM3-M5, capable of lifting large payloads to Geosynchronous Transfer Orbit (GTO). In this mission:

1. The rocket carried its heaviest-ever payload: 4,410 kg
2. It surpassed its standard 4,000 kg GTO capacity
3. The success marked 100% reliability, with all eight LVM3 missions successful
4. This vehicle is also earmarked for ISRO's upcoming Gaganyatri-2 mission.

MISSION SIGNIFICANCE OF GSAT-7R (CMS-03)

Aspect	Details
1. Strengthening Naval Communication	• Provides uninterrupted, encrypted links for warships, submarines, maritime aircraft, and command centres. • Enhances network-centric warfare and real-time decision-making.

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2. Enhancing Maritime Domain Awareness (MDA)	• Expands monitoring across the Indian Ocean Region (IOR). • Supports strategic surveillance, anti-piracy missions, disaster response, and protection of maritime trade routes.
3. Boost to Indigenous Defence Technology	• Strengthens India's capability in heavy communication satellite development. • Advances indigenous cryogenic engine technology. • Improves precision in upper-stage operations, supporting Aatmanirbhar Bharat.
4. Expanding India's Space Capabilities	• Demonstrates reliable heavy-lift launch performance. • Incorporates advanced communication payloads. • Enables multi-orbit mission flexibility, elevating India's global space standing.
5. Support for Joint Military Operations	• Integrates with tri-services defence networks. • Enhances inter-service communication, secure data exchange, and real-time battlefield awareness.

SIGNIFICANCE

1. **Strengthened Strategic Security:** GSAT-7R enhances India's naval communication architecture across vast oceanic territories, improving strategic reach in the Indian Ocean Region (IOR).
2. **Superior Maritime Domain Awareness:** The satellite boosts surveillance, reconnaissance, and early-warning capabilities, essential for protecting trade routes and deterring hostile activities.
3. **Indigenous Technological Advancement:** Demonstrates India's growing expertise in multi-band communication satellites and advanced cryogenic engine technology.
4. **Enhanced Network-Centric Warfare:** Provides secure, real-time, high-bandwidth communication to warships, submarines, and aircraft, enabling swift and coordinated operations.
5. **Reinforced Launch Vehicle Reliability:** Validates the LVM3's record as a dependable heavy-lift launcher, paving the way for future missions including Gaganyatri-2.
6. **Support for Defence Modernisation:** Strengthens India's self-reliant military communication ecosystem, aligning with Aatmanirbhar Bharat and long-term strategic goals.
7. **Boost to India's Space Power Projection:** Positions India as a rising global space power capable of deploying complex, defence-oriented satellite missions.

WAY FORWARD

1. **Expand Tri-Services Communication:** Deploy dedicated satellites for Army and Air Force integration to build a unified defence communication grid.
2. **Advance Indigenous Cryogenic Engines:** Improve multi-burn, re-ignition, and multi-orbit capabilities for greater operational flexibility.
3. **Develop Space-Based ISR Capabilities:** Create advanced satellites for intelligence, surveillance, and reconnaissance to enhance maritime vigilance.
4. **Strengthen Maritime Cybersecurity:** Upgrade encryption systems and secure communication protocols to prevent cyber threats and electronic warfare attacks.
5. **Promote Public–Private Collaboration:** Encourage Indian startups and private companies to co-develop defence satellites and payload technologies.
6. **Build Redundancy & Resilience:** Develop backup satellite systems and orbital assets to ensure uninterrupted military communication during conflicts.

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7. **Enhance International Maritime Partnerships:** Use improved space-based communication to strengthen interoperability with friendly navies in joint exercises and operations.

CONCLUSION

The successful launch of GSAT-7R (CMS-03) marks a defining moment in India's pursuit of space and defence self-reliance. By strengthening the Navy's communication and surveillance capabilities, ISRO has further solidified India's maritime security posture. The mission not only reflects technological excellence but also symbolizes India's steady rise as a global space leader under the vision of Aatmanirbhar Bharat.

Prelims question:

Q. Consider the following statements regarding GSAT-7R (CMS-03):

1. It is India's heaviest communication satellite launched to date.
2. The satellite was launched by ISRO's LVM3-M5 vehicle.
3. CMS-03 is designed to provide communication services only over the Indian landmass.

Which of the statements given above is/are correct?

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 1, 2 and 3

Answer: A

Mains Question:

Q. Discuss the significance of GSAT-7R (CMS-03) in strengthening India's naval communication and maritime security. How does the mission reflect India's progress toward Aatmanirbhar Bharat in the space and defence sectors?

(250 words)

LAUNCH VEHICLE MARK-3: THE BACKBONE OF INDIA'S STRATEGIC, COMMERCIAL, AND HUMAN SPACE MISSIONS

WHY IN THE NEWS?

Launch Vehicle Mark-3 (LVM3), formerly known as the Geosynchronous Satellite Launch Vehicle Mark-III (GSLV Mk-III), is India's most powerful operational rocket developed by ISRO. It represents a major technological leap in India's space launch capability, enabling heavy-lift missions, deep-space exploration, commercial launches, and strategic payload deployment. Often called the "Bahubali" of Indian rockets due to its exceptional lifting power and reliability, LVM3 has emerged as the backbone of India's high-value and human-spaceflight missions.



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1. EVOLUTION AND BACKGROUND

- The LVM3 was conceptualized to meet India's long-term requirement of launching 4–6 tonne class communication satellites to Geostationary Orbit (GEO).
- Initial missions like GSAT satellites, and later high-profile missions like Chandrayaan-2, OneWeb launches, and future Gaganyaan human-spaceflight tests, established LVM3 as a dependable heavy-lift launcher.
- It is built with a focus on indigenous technology, reducing foreign dependency for heavy satellite launches.

TECHNICAL CONFIGURATION OF LVM3

Stage	Name / Code	Propulsion Type	Key Components	Fuel Used	Thrust	Burn Time	Additional Notes
Stage 1	**S200 Solid Rocket Boosters**	Solid	Two strap-on boosters	Solid propellant	~5,150 kN each	~130 sec	Among the world's largest solid boosters; provide lift-off thrust
Stage 2	**L110 Liquid Core Stage**	Liquid	Two Vikas enginess	UDMH + N_2O_4 (Hypergolic)	~1,600 kN	—	Controls trajectory after booster separation; offers sustained thrust
Stage 3	**C25 Cryogenic Upper Stage**	Cryogenic	CE-20 engine	LH_2 + LOX	~200 kN	~720 sec	Enables heavy payload insertion into GTO using high-efficiency cryogenic tech

PAYLOADS

Orbit Type	Payload Capacity
Low Earth Orbit (LEO)	Up to 8,000 kg
Geosynchronous Transfer Orbit (GTO)	4,000 – 4,500 kg
Deep-space Missions	Payloads > 3 tonnes

KEY MISSIONS & STRENGTHS OF LVM3

Mission	Year	Purpose / Payload	Significance
Chandrayaan-2	2019	India's 2nd lunar mission	Proved LVM3's capability for deep-space missions
OneWeb Launches	2022–23	72 broadband satellites	Established India as a global commercial launch provider
GSAT Series	Various	GSAT-19, GSAT-29, GSAT-7R, Defence Comms	Strengthened India's strategic and communication capacities
Gaganyaan Programme	Ongoing	Crewed spaceflight missions	HLVM3 being developed with enhanced safety systems

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STRENGTHS & INNOVATIONS OF LVM3

Category	Key Features
Indigenous Cryogenic Technology	CE-20 engine mastery; major milestone in space self-reliance
Modular & Reliable Design	Simplified structure, easy assembly, high reliability
Commercial Market Potential	Suitable for broadband constellations, heavy satellites, foreign payloads
Strategic Importance	Enables launch of military, strategic communication, navigation satellites
100% Success in Operational Missions	India's most dependable heavy-lift rocket

SIGNIFICANCE FOR INDIA'S SPACE PROGRAMME

1. **Boost to Communication & Defence:** Supports heavy satellites like GSAT-7R, ensuring secure naval and strategic communication.
2. **Enhances India's Autonomy:** Reduces dependence on foreign launchers like Arianespace.
3. **Backbone of Deep-Space Missions:** Future missions like Chandrayaan-3, Mars Orbiter Missions, Venus Orbiter, etc., rely on LVM3 capability.
4. **Paves the Way for Human Spaceflight:** LVM3 is the core of India's Gaganyaan programme.
5. **Strengthens Atmanirbhar Bharat:** Demonstrates India's capability in complex propulsion systems, especially cryogenics.

FUTURE DEVELOPMENTS

HLVM3 (Human-Rated LVM3)

- Designed for crew safety:
- Redundant systems
- Strengthened structures
- Advanced failure detection systems

Reusable Launch Vehicle Prospects

- Studies ongoing to integrate reusable technologies into future variants.

Potential Upgrades

- Higher thrust boosters
- Improved cryogenic engines
- Increased payload capacity

CONCLUSION

LVM3 stands as a symbol of India's technological prowess and engineering excellence. With a perfect operational success record, indigenous cryogenic capabilities, advanced propulsion stages, and compatibility with defence, commercial, and human spaceflight missions, the rocket has become the backbone of India's space ambitions. As India expands into deep-space exploration and manned missions, LVM3 will remain at the heart of the country's strategic and scientific journey, reflecting true Atmanirbhar Bharat in the space sector.

Prelims question:

Q. Consider the following statements regarding the Launch Vehicle Mark-3 (LVM3):

1. LVM3 uses a combination of solid, liquid, and cryogenic propulsion stages.
2. The CE-20 cryogenic engine used in LVM3's upper stage runs on Liquid Hydrogen (LH_2) and Liquid Oxygen (LOX).
3. LVM3 can place up to 8,000 kg payload into Geosynchronous Transfer Orbit (GTO).
4. LVM3 is the designated launch vehicle for India's Gaganyaan mission.

How many of the above statements are correct?

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(a) Only one (b) Only two

(c) Only three (d) All four

Answer: C

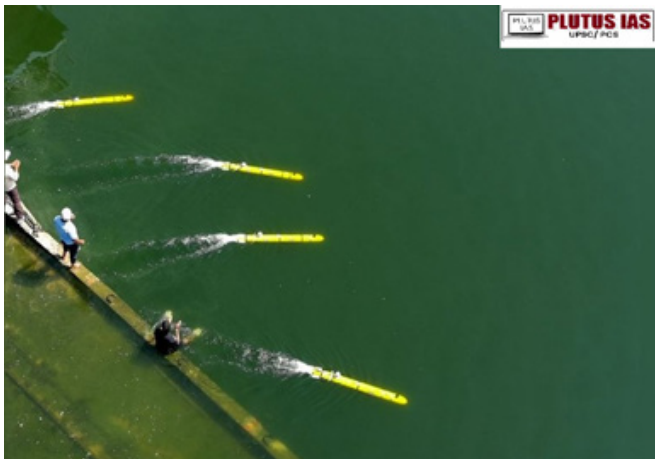
Mains Question:

Q. Discuss the significance of the Launch Vehicle Mark-3 (LVM3) in strengthening India's space capabilities. How does it support India's strategic, commercial, and human spaceflight ambitions?

(250 words)

INDIA'S UNDERWATER GUARDIANS: DRDO UNVEILS AUTONOMOUS MP-AUVS

WHY IN THE NEWS?



In a major stride toward strengthening India's underwater defence capabilities, the Defence Research and Development Organisation (DRDO) has unveiled a new class of Man-Portable Autonomous Underwater Vehicles (MP-AUVs). Developed by the Naval Science & Technological Laboratory (NSTL) in Visakhapatnam, these systems are engineered specifically for Mine Countermeasure (MCM) missions—one of the most complex and high-risk operations in naval warfare. Announced in November 2025, the MP-AUV programme reflects India's growing technological maturity in autonomous systems, robotics, and underwater warfare. It also aligns closely with the government's Atmanirbhar Bharat vision by offering a fully indigenous alternative to imported mine-hunting systems.

WHY MP-AUVS MATTER: THE THREAT OF NAVAL MINES

Naval mines remain one of the world's most dangerous asymmetric maritime threats. They are inexpensive, easy to deploy, difficult to detect, and capable of halting shipping lanes, damaging warships, and crippling naval operations. Recent geopolitical tensions—from the Red Sea to the South China Sea—have reinforced their strategic impact. Traditional mine-clearing methods rely on large vessels, slow-moving ROVs, or human divers—options that are time-intensive, expensive, and risky. DRDO's MP-AUVs mark a paradigm shift toward autonomous, distributed, low-risk mine countermeasure operations.

The Threat of Naval Mines

Naval mines are cost-effective yet highly disruptive weapons, capable of blocking shipping lanes, damaging warships, and undermining naval operations. Traditional countermeasures rely on divers or large, slow-moving vessels, posing high risks. MP-AUVs offer an autonomous, low-risk, and scalable solution to this asymmetric threat.

KEY FEATURES & ADVANCED TECHNICAL ARCHITECTURE OF DRDO'S MP-AUVS

Feature Category	Key Details	Operational Advantages
1. Man-Portability & Rapid Deployment	• Compact & lightweight • Easily deployable from small boats, piers, or shore-based teams • No need for specialised MCM ships	• Quick response in littoral & harbour zones • Reduced logistics burden • Cost-effective deployment

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2. Sophisticated Sensor Suite	• Side Scan Sonar (SSS): High-resolution seabed imaging • EO Unaderwater Cameras: Visual confirmation of mine-like objects	• High accuracy in detection, classification confirmation cycle • Reliable identification of threats • Improves mission success rate
3. AI-Powered Autonomy	• Deep-learning-based recognition algorithms • Real-time mine classification onboard • Minimal operator intervention	• Faster mission execution • Reduced human error • Ideal for high-risk underwater environments
4. Swarm Intelligence & Networking	• Multi-AUV coordination using underwater acoustic communication • Real-time data exchange • Distributed sensor grid	• Wider area coverage • System resilience via redundancy • Effective in contested maritime zones
5. Indigenous Development & Collaboration	Developed in partnership with: • NPOL – Sonar & acoustics • RCI – Onboard electronics • HEMRL – Energy systems • DYSL-AT – AI & autonomy • Support from private defence industry & start-ups	• Strengthens Atmanirbhar Bharat • Reduces reliance on foreign technologies • Scalable for future naval applications

FIELD TRIALS & VALIDATION

Rigorous harbour trials conducted at NSTL, Visakhapatnam, demonstrated:

- High-accuracy detection and classification of mine-like objects Stable inter-AUV communication
- Successful execution of autonomous search patterns
- Effective performance in a realistic underwater environment

STRATEGIC SIGNIFICANCE OF MP-AUVS FOR INDIA

1. **Enhancing Maritime Security:** Strengthens protection of naval bases and key ports. Secures crucial shipping lanes and trade routes. Supports amphibious and rapid-response operations. Enables swift counteraction to mine-laying threats.
2. **Reducing Risks to Personnel:** Replaces divers and manned vessels in dangerous minefields. Allows operations in contested or denied maritime zones safely. Minimises human exposure to high-risk environments.
3. **Cost-Effective Defence Technology:** Expendable, affordable, and scalable compared to traditional MCM systems. Ideal for large-area searches in high-risk or inaccessible zones. Reduces operational and logistical overheads.
4. **Aligning with Global Naval Trends:** Puts India alongside elite navies such as the US, UK, France, and Japan. Deploys swarm-capable autonomous MCM systems. Strengthens India's strategic posture in the Indo-Pacific region.

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5. **Boost to Atmanirbhar Bharat:** Reduces dependence on imported MCM platforms and ROVs. Strengthens India's indigenous underwater robotics ecosystem. Enhances self-reliance in advanced naval technologies.

CONCLUSION

DRDO's Man-Portable Autonomous Underwater Vehicles represent a technological and strategic leap for India's maritime security architecture. With cutting-edge autonomy, advanced sensors, swarm networking, and indigenous design, the MP-AUVs redefine how the Indian Navy will tackle underwater mine threats. As naval warfare evolves toward unmanned and autonomous solutions, India's MP-AUVs showcase its emergence as a global leader in underwater defence innovation, securing the nation's maritime interests in an increasingly contested Indo-Pacific region.

Prelims question:

Q. Which of the following statements about DRDO's MP-AUVs is/are correct?

1. They are designed for mine countermeasure operations.
2. They rely entirely on manned deployment from large vessels.
3. They integrate AI and swarm intelligence for autonomous operations.

Select the correct answer:

(a) 1 and 3 only (b) 2 only

(c) 1 and 2 only (d) 1, 2, and 3

Answer: A

Mains Question:

Q. Discuss the strategic and technological significance of DRDO's Man-Portable Autonomous Underwater Vehicles (MP-AUVs) for India's maritime security.

(250 words)

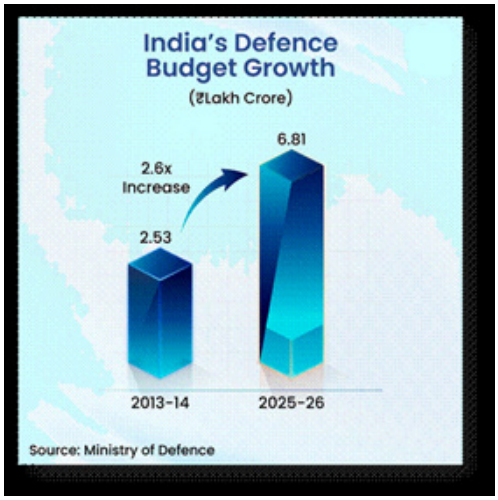
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INDIA'S DEFENCE REFORMS AND EXPORT EXPANSION: A FACT-BASED EVALUATION

WHY IN THE NEWS?

India's indigenous defence production has reached an all-time high of ₹1,27,434 crore in FY 2023-24, marking a remarkable 174% increase from FY 2014-15. This surge reflects the success of the government's Atmanirbhar Bharat initiative and the sustained push for defence indigenisation over the past decade. The rise in defence production comes alongside significant budgetary expansion, with India's defence budget increasing from ₹2.53 lakh crore (2013-14) to ₹6.81 lakh crore (2025-26). Policy reforms, ease of doing business, and growing private-sector participation have further strengthened the domestic defence ecosystem. India now exports defence equipment to over 100 countries, and defence exports grew by 12.04% in FY 2024-25. The government has set ambitious targets of ₹3 lakh crore in defence manufacturing and ₹50,000 crore in exports by 2029, reinforcing India's emergence as a global defence manufacturing hub.



OBJECTIVES OF REFORMS

Anchored in the Government's vision of Aatmanirbhar Bharat, a series of reforms were launched to transform India's defence sector into a self-reliant, innovation-driven, and globally competitive industry. The major objectives include:

1. **Faster and Transparent Procurement:** Streamlining the Defence Acquisition Procedure (DAP) to reduce delays, enhance transparency, and promote time-bound procurement. The Defence Acquisition Council (DAC) plays a crucial role in approving capital acquisitions and ensuring quicker decision-making.
2. Boosting Indigenous Manufacturing: Promoting domestic production through Positive Indigenisation Lists, encouraging Indian companies to manufacture items earlier imported. Liberalised FDI norms allow 74% automatic route and up to 100% via government approval, attracting global investment and technology transfer.



3. Strengthening R&D and Innovation: Launching the ₹1 lakh crore Research, Development and Innovation (RDI) Scheme to support cutting-edge defence

technologies, fostering synergy among DPSUs, private industry, MSMEs, academia, and startups.

DAP 2020: THE STRATEGIC ROADMAP FOR SELF-RELIANT ACQUISITION

The Defence Acquisition Procedure (DAP) 2020 is a forward-looking policy framework that functions not merely as a procedural rulebook but as a strategic blueprint for transforming India's defence acquisition ecosystem. Introduced to resolve traditional challenges such as long procurement cycles, heavy import dependence, and procedural complexity, DAP 2020 introduces clarity, innovation, and a strong domestic-first orientation at every stage of the procurement process.



KEY FEATURES THAT REDEFINE DEFENCE ACQUISITION (DAP 2020)

Feature	Description
1. Indian First Approach	• Prioritizes Buy (Indian–IDDM) category at the top of procurement hierarchy. • Ensures preference for systems/ platforms designed, developed, and manufactured in India. • Reduces import dependence and strengthens indigenous defence ecosystem.
2. Speed with Transparency	• Simplifies approval chains. • Integrates digital systems for seamless processing. • Enhances accountability and reduces bureaucratic delays. • Aims to shorten procurement timelines.
3. Technology of Tomorrow	• Includes dedicated provisions for acquiring emerging/frontier technologies: • Artificial Intelligence • Robotics & unmanned systems • Cyber & space technologies • Autonomous platforms • Multi-domain warfare systems • Ensures future-ready defence capabilities.
4. Industry as a Partner	• Recognizes Indian industry as a key stakeholder in defence production. • Promotes innovation through iDEX (start-up driven). • Relaxes industrial licensing norms. • Encourages involvement of private sector, MSMEs, and academia. • Expands defence industrial base and technological depth.
5. Ease of Approvals	• Removes long-standing procedural bottlenecks. • • Streamlines frameworks with clear timelines. • • Enables decentralised and faster decision-making. • • Strengthens acquisition wings for efficient procurement outcomes.

DPM 2025: STREAMLINING REVENUE PROCUREMENT

Building on the reforms introduced under DAP 2020, the Defence Procurement Manual (DPM) 2025 was launched by Raksha Mantri Shri Rajnath Singh in October 2025. The policy marks a major leap towards simplifying, standardising, and modernising revenue procurement across the Ministry of Defence (MoD). Effective from 1 November 2025, DPM 2025 aims to support the Armed Forces in procuring goods and

services—valued at nearly ₹1 lakh crore annually—that are essential for operational preparedness.

The DPM 2025 introduces a wide range of industry-friendly reforms designed to ensure fairness, transparency, accountability, and greater participation from domestic enterprises, particularly MSMEs and start-ups.

Key Highlights of DPM 2025

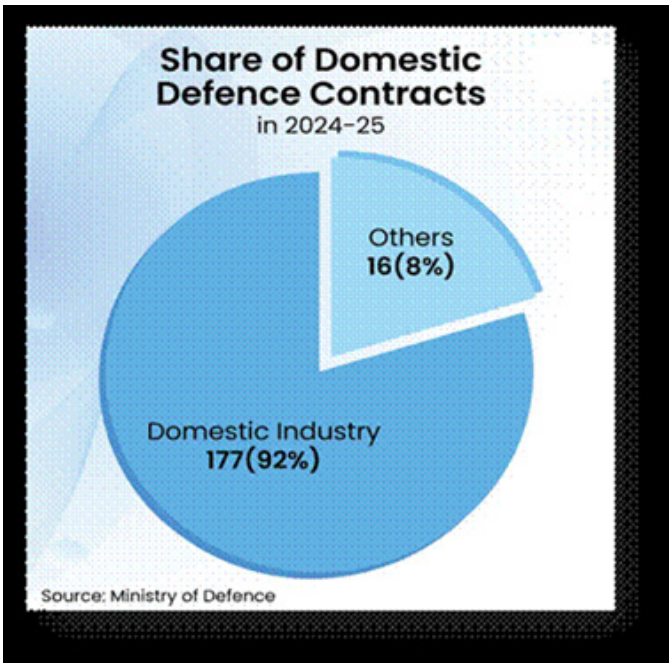
1. Ease of Doing Business: Establishes standardised procedures across all Armed Forces and MoD organisations, reducing procedural ambiguity and delays. Simplifies documentation and rationalises approval workflows to ensure faster procurement cycles. Enhances predictability and uniformity, thereby strengthening industry confidence.

2. Support for Innovation and Indigenisation: Encourages deeper collaboration between the Armed Forces, private industry, MSMEs, and academia. Promotes indigenous solutions for revenue procurements, supporting long-term self-reliance. Complements initiatives like iDEX and Positive Indigenisation Lists.

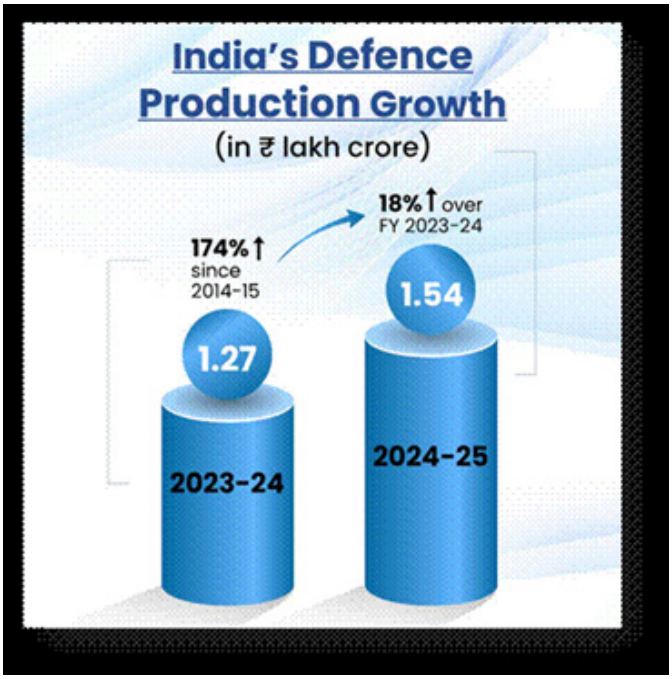
3. Industry-Friendly Provisions: Lower liquidated damages (0.1% per week) for indigenisation projects, promoting a more facilitative environment. Offers guaranteed orders for up to five years for indigenously developed products, encouraging long-term investment in R&D. Removes outdated requirements like the No Objection Certificate (NoC) from the erstwhile Ordnance Factory Board, reducing unnecessary bureaucratic hurdles.

4. Digital Integration and Transparency: Strengthens e-procurement systems, ensuring seamless, paperless transactions. Integrates real-time data-driven monitoring to enhance accountability and improve decision-making.

Promotes transparent vendor selection and contract management. An Integrated Procurement Framework for the Future



1. From Dependence to Dominance: India achieved its highest-ever defence production of ₹1.54 lakh crore in FY 2024–25, reflecting strong progress under Aatmanirbhar Bharat. The country is moving toward ₹1.75 lakh crore production this year and targets ₹3 lakh crore by 2029, signalling its emergence as a global defence manufacturing hub.



2. **Defence Industrial Corridors – New Growth Arteries:** The UPDIC and TNDIC have become

major centres of defence investment, together attracting ₹9,145 crore, with 289 MoUs unlocking ₹66,423 crore in potential opportunities (as of October 2025). These corridors are driving cluster-based manufacturing, innovation, and supply-chain development.

3. **Expanding the Defence Ecosystem:** DRDO is now at the heart of India's defence innovation. A new ₹500 crore corpus under TDF is supporting deep-tech, cutting-edge R&D, technology transfers, and 15 DIA-CoEs linking academia, startups, and industry. The restructuring of Ordnance Factories into seven new defence companies has improved efficiency and autonomy. A vibrant private sector and 16,000 MSMEs are strengthening the defence supply chain—from UAVs to electronics—marking India's shift toward a broad-based, innovation-driven ecosystem.

4. **Opening New Horizons – Defence Investments:** India is becoming a top destination for defence investments with 788 industrial licences issued to 462 companies.

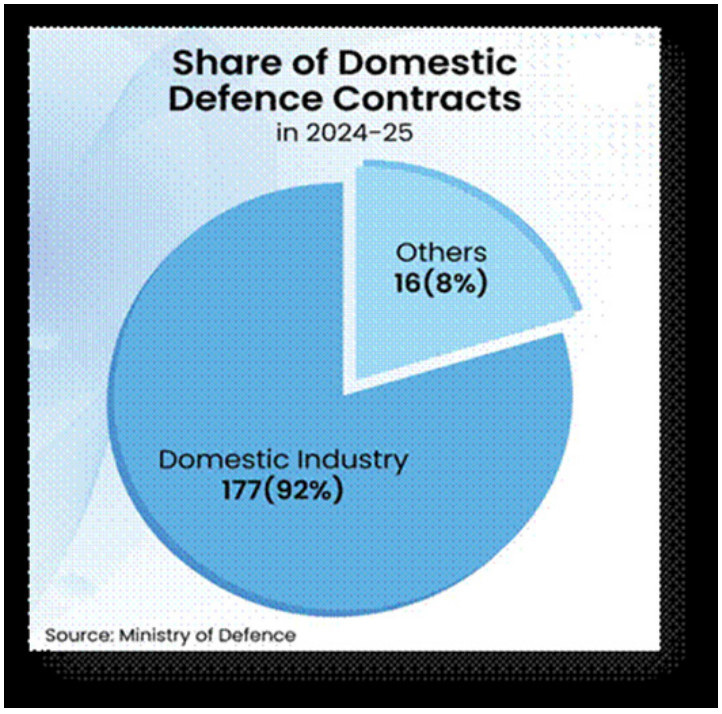
The fully digital export authorization system enabled 1,762 approvals in 2024–25, a 16.9% growth, alongside a 17.4% rise in exporters. In 2024–25, the MoD signed a record 193 contracts worth ₹2,09,050 crore, including 177 domestic contracts (₹1,68,922 crore)—the highest ever—boosting indigenous procurement, employment, and technological advancement.

DEFENCE ACQUISITION REFORMS (2024–25): MAJOR DAC APPROVALS

Month & Year	Total Value Approved	Key Indigenous Systems / Proposals Approved	Impact on Self-Reliance & Capability
March 2025	**₹54,000 crore**	• 1,350 HP engines for T-90 tanks • Varunastra heavyweight torpedoes • AEW&C (Airborne Early Warning & Control) systems	Boosts armoured mobility, underwater strike capability & long-range surveillance
July 2025	**₹1.05 lakh crore**	(All under Buy (Indian-IDDM)) • Armoured Recovery Vehicles • Electronic Warfare System • Integrated Tri-Services Inventory Management System • Surface-to-Air Missiles • Moored Mines • Mine Counter Measure Vessels • Super Rapid Gun Mounts • Submersible Autonomous Vessels	Largest push for fully indigenous design & manufacturing; enhances tri-service integration, naval safety, precision strike capabilities
August 2025	**₹67,000 crore**	- Thermal Imager Night Sights for BMPs - Compact Autonomous Surface Craft (Navy) - BrahMos Fire Control System upgrades - BARAK-1 upgrades - Mountain Radars - SAKSHAM/SPYDER upgrades (IAF) - Indigenous MALE RPAs (all Services) - Maintenance support for C-17, C-130J & S-400	Strengthens ISR network, missile defence, autonomous systems; boosts Army night-fighting capability & Air Force radar superiority

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October 2025	**₹79,000 crore**	• DRDO Advanced Light Weight Torpedoes (ALWT) – Navy • Nag Missile System (NAMIS) Mk-II – Army • Ground-Based Mobile ELINT System (GBMES) • High Mobility Vehicles (HMVs) • Landing Platform Docks (LPDs) • 30mm Naval Surface Guns • Long-Range Target Saturation/Destruction System – Air Force	Strengthens maritime warfare, mobility, ELINT capability, long-range targeting; major milestone for indigenous missile & naval technologies
Budget 2024–25 Allocation	**₹1.72 lakh crore (Capital Head)**	• Capital modernisation across all Services	20.33% rise over FY 2022–23; accelerates procurement of indigenous weapon systems



DEFENCE EXPORT PROMOTION: INDIA S RISING PROFILE

A New Export Story: Numbers That Speak

What was once a trickle is now a steady stream: India s defence exports reached a record ₹23,622 crore in FY 2024 25 registering a 12.04% growth over FY 2023 24 s ₹21,083 crore. Private sector exports contributed ₹15,233 crore, while DPSUs accounted for ₹8,389 crore, whereas the corresponding figures for FY 2023-24 were Rs 15,209 crore and Rs 5,874 crore respectively. In a major boost to defence exports, India has supplied a wide spectrum of products - including ammunition, arms, sub-systems, complete systems, and critical components - to around 80 countries during the 2024-25, reaffirming its role as a reliable partner in the global defence supply chain. The Defence Public Sector Undertakings (DPSUs) have shown a significant increase of 42.85% in their exports in the FY 2024-25 reflecting the growing acceptability of

Indian products in the global market and the ability of the Indian defence industry to be a part of the global supply chain.

1. **Faster, Simpler, Digital Policies that Open Doors:** The Government has actively simplified the export pathway, standard operating procedures for the export of Munitions List items have been rationalised, and a fully end-to-end online portal now processes export authorisations digitally, cutting time and paperwork for exporters. Open General Export Licences (OGEL) and a digital authorisation system have further eased routine exports.

2. **Defence Exports as Diplomacy:** Exports are more than commerce: they build trust, interoperability and long-term partnerships. India s expanding export basket, supplied to friendly countries, is an instrument of outreach, seen in defence cooperation, logistics support, training and spares packages that accompany sales. The widening list of importers signals growing global confidence in Indian platforms.

3. **Successful Indigenous Platforms & the Export Basket:** India s exports today are broad and practical, from bulletproof jackets, patrol boats and helicopters, to radars and lightweight torpedoes, showcasing the depth and diversity of India s defence manufacturing. While combat aircraft programmes like Tejas continue on the path to operational maturity and export discussions, India s current strength lies in a wide range of proven, operational systems and components.

CONCLUSION

India s strategic collaborations and bold policy initiatives are not just reforms; they represent the foundation of a new era in defence self-reliance and technological sovereignty. With domestic production and exports poised for remarkable growth, and cutting-edge technologies steadily integrating into the industrial ecosystem, the vision of India as a global defence manufacturing hub is no longer a distant aspiration, it is unfolding before us.

India has achieved the highest-ever growth in indigenous defence production in value terms, reflecting the success of government initiatives such as the Atmanirbhar Bharat Abhiyan, positive indigenisation lists, and strategic partnerships with the private sector. The emphasis on Make in India and the creation of a robust R&D and start-up ecosystem have further accelerated this transformation.

Prelims question:

Q. Consider the following statements:

1. Defence Acquisition Procedure (DAP) 2020 places the Buy (Indian-IDDM) category at the top of the procurement hierarchy.
2. Defence Procurement Manual (DPM) 2025 deals primarily with capital procurement.
3. India's defence exports have crossed ₹20,000 crore for the first time in FY 2024–25.

How many statements are correct?

(a) Only one (b) Only two

(c) All three (d) None

Answer: B

Mains Question:

Q. "India's recent defence reforms—from procurement modernisation to export promotion—are reshaping the country's strategic autonomy and industrial capabilities." Critically evaluate the impact of these reforms on self-reliance, defence preparedness, and global competitiveness.

(250 words)

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