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Guiding Dreams, Empowering Future

By *DR. V. RAM PRASATH MANOHAR, IAS*

EXCLUSIVE CURRENT AFFAIRS BULLETIN

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India-Middle East-Europe Economic Corridor (IMEC)

Why in News?

The External Affairs Minister highlighted the India-Middle East-Europe Economic Corridor (IMEC) as a key initiative to improve regional connectivity amid rising global competition and trade disruptions .



What is IMEC?

About

- IMEC is a proposed multimodal trade and connectivity corridor linking India, the Middle East, and Europe.
- It integrates maritime routes, railways,

energy pipelines, and digital infrastructure .

Announcement and Signatories

· Announced in 2023 at the G20 Summit in New Delhi through a Memorandum of Understanding (MoU) .
· Eight participants signed the MoU:
· India
· United States (US)
· Saudi Arabia
· United Arab Emirates (UAE)
· France
· Germany
· Italy
· European Union (EU)

Strategic Linkage

· Linked to the Partnership for Global Infrastructure and Investment (PGII) , launched by the G7 in 2022.

Viewed as a potential alternative to China's Belt and Road Initiative (BRI).

Corridor Structur
Two Main Corridors
Corridor Connectivity
Eastern Corridor Connects India to the Arabian Gulf through maritime routes
Northern Corridor Connects the Arabian Gulf to Europe through rail and maritime networks

Proposed Route

· India → UAE → Saudi Arabia → Jordan → Israel → Europe

Major Proposed Ports
· Mundra (India)
· Jebel Ali (UAE)
· Haifa (Israel)
· Piraeus (Greece)

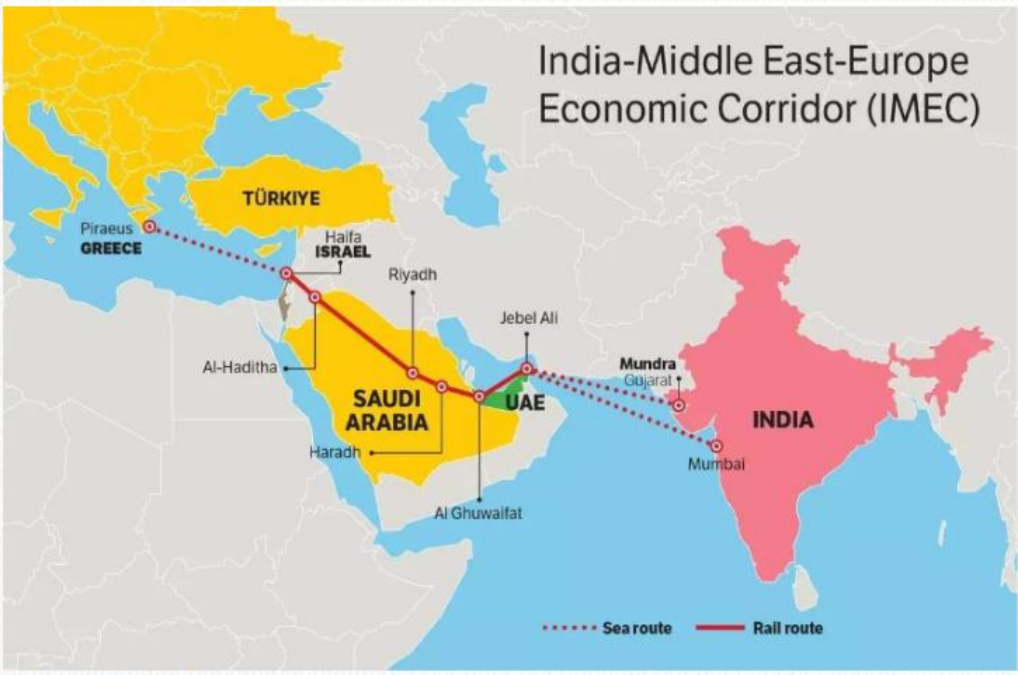
Additional Components

The corridor also includes:
· Electricity transmission cable
· Hydrogen pipeline
· High-speed data cable

Current Status and Developments

Revival and Technical Work
· The European Commission has played a key role in reviving the initiative over the past year.
· Since May 2025, IMEC signatories have been meeting regularly at senior official level and technical level.
· Five technical working groups have been established to help operationalise IMEC .





Recent Meetings

· The latest senior officials' meeting was organised by Italy in Trieste on 17 March 2026 .
· A ministerial-level meeting is expected by the end of 2026 to evaluate expanding the corridor's geographical scope .

Interest from New Countries

Several countries have expressed interest in joining or working with IMEC:
· Oman
· Egypt
· Lebanon
· Greece
· Cyprus

Any formal expansion requires unanimous approval from the eight original signatories .

Significance of IMEC

1. Alternative Trade Route

· IMEC aims to reduce shipping time from India to Europe by around 40% compared to the traditional Red Sea route .
· It provides a multi-modal alternative amid persistent security volatilities in the Red Sea and Suez Canal .

2. Counter to China's BRI

· IMEC is viewed as a strategic counterweight to China's Belt and Road Initiative (BRI) .
· It strengthens India's connectivity westward and supports supply-chain diversification .

3. Resilience Amid Disruptions

· The EU has backed IMEC to diversify trade routes and make India-Europe connectivity more resilient.
· European Commissioner Apostolos Tzitzikostas stated: "We cannot afford to depend on a single route, a single port or maritime chokepoint" .
· The Iran conflict and Strait of Hormuz crisis have reinforced the necessity for alternative connectivity options .

4. Energy and Digital Connectivity

· IMEC includes energy infrastructure (electricity cable, hydrogen pipeline) and digital connectivity (high-speed

data cable).
· This supports green energy transitions and digital integration across the corridor .

5. India's Strategic Outreach

· IMEC positions India as a key driver of connectivity between Asia, the Gulf, and Europe.
· It supports India's Act East Policy and West Asia engagement .

Challenges and Concerns

1. Geopolitical Vulnerability

· The Israel-Gaza conflict has frozen the physical integration of the UAE-Israel leg.
· Iran conflict and Strait of Hormuz disruptions pose risks to maritime routes .

2. Multiple Routes Needed

· French Special Envoy Gérard Mestrallet emphasized: "There will be no zero-risk routes" .
· The focus is shifting towards resilient, multiple routes under IMEC .

3. Slow Implementation

· Since its announcement in 2023, development has been minimal.
· No ministerial-level meeting was held until the expected 2026 meeting .

4. Protectionist EU Policies

· European regulations like the Carbon Border Adjustment Mechanism (CBAM) and strict sanitary measures disproportionately impact Indian exports.
· These slow down true commercial integration along the corridor .

Other Major International Connectivity Projects Involving India

Project Description
INSTC Multi-modal network integrating ship, rail, and road routes for freight between India, Russia, Iran, Europe, and Central Asia
Kaladan Multimodal Transit Transport Project Connects Kolkata Port with Sittwe Port in Myanmar, improving connectivity to India's northeastern states
India-Myanmar-Thailand Trilateral Highway Links Moreh in India with Mae Sot in Thailand through Myanmar, strengthening Southeast Asia connectivity

Current Status Technical working groups active; ministerial meeting expected end-2026

Interested New Members Oman, Egypt, Lebanon, Greece, Cyprus

Conclusion

The India-Middle East-Europe Economic Corridor (IMEC) represents a transformative connectivity initiative that aims to integrate India, the Middle East, and Europe through multi-modal infrastructure spanning maritime, rail, energy, and digital networks. While the project holds immense potential to reduce trade times, diversify supply chains, and counter China's BRI, it faces significant geopolitical vulnerabilities in West Asia, slow implementation, and regulatory hurdles from EU protectionist policies.

Previous Year Question (Prelims)

Q. With reference to the India-Middle East-Europe Economic Corridor (IMEC), consider the following statements:
1. It is a connectivity project to develop infrastructure to enhance trade among India, the Arabian Peninsula, the Mediterranean region and Europe.
2. The Memorandum of Understanding (MoU) for the IMEC was signed in 2023 in New Delhi during the G-20 summit.
3. The IMEC comprises two corridors — India-Gulf and Gulf-Europe.
How many of the statements given above are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

Answer: (c)

India–US ENERGY Diplomacy



Why in News?

The US Secretary of State made a high-profile three-day official visit to India. During this visit, he:
· Described India as a "refining superpower".
· Pitched for increased exports of US and Venezuelan crude oil to help India diversify its energy sources.
· Emphasised that despite tactical differences, India and the US remain "perfectly aligned on core issues" of national interest.

Summary of the Visit

· The US highlighted opportunities for cooperation in Venezuelan and American crude oil, refining, trade, and emerging technologies to strengthen India's energy security and economic resilience.
· Despite convergence on Indo-Pacific security, defence, and technology, several challenges remain — tariff disputes, immigration restrictions, and India's strategic autonomy.

Key Outcomes of the Visit

1. Energy Security and Refining Partnership

· The US urged India to use its high-com-

plexity refining infrastructure (the US Secretary of State specifically visited Reliance Industries' Jamnagar refinery) to process heavy Venezuelan crude.
· India was encouraged to expand imports of US petroleum products.

2. Sanctions Waivers on Russian Oil

· Recognising global energy vulnerabilities, the US suspended certain sanctions against major buyers of Russian oil, including India.
· This was done to facilitate market stability and ease supply pressures.

3. Progress Toward a Bilateral Trade Deal

· Both sides signalled that negotiations on a comprehensive trade agreement are in their final stages.

4. Convergence on Emerging Technologies and AI

· Both nations reaffirmed cooperation on Artificial Intelligence ("Superintelligence").
· They agreed on a shared framework to harness advanced AI for human development while mitigating systemic security risks.

5. Defence and Indo-Pacific Reaffirmation

· Washington pushed for deeper defence procurement ties.
· It reiterated that the 21st-century global order will be defined by peace, stability, and deterrence in the Indo-Pacific region.

Significance of Venezuelan Oil for India

Background:

· Venezuela possesses the world's largest proven crude oil reserves, concentrated in the Orinoco Heavy Oil Belt.
· However, its primary export blend (Merey) is extra-heavy (low API gravity) and sour (high sulphur).
· Processing this crude requires specialised, capital-intensive refinery equipment such as delayed cokers.

Significance for India

Dimension Significance
Energy Security and Diversification
Diversifies crude oil imports beyond Russia and West Asia, reducing exposure to geopolitical tensions and disruptions in the Strait of Hormuz and Red Sea.
Refining Economics and Infrastructure
Complex refineries like Reliance's Jamnagar refinery can process heavy crude into high-value products, potentially improving Gross Refining Margins (GRMs).
Strategic Investments and Upstream Assets
Creates opportunities for ONGC Videsh Ltd (OVL) to recover outstanding dividends and revive investments in Venezuelan projects such as San Cristóbal and Carabobo-1, subject to sanctions and contractual approvals.

Significance for the US

Dimension Significance
Energy Security and Diversification
Expands global oil supply, potentially easing crude oil and diesel prices without relying solely on additional US production.
Refining Economics and Infrastructure
Utilises India's refining capacity as a global hub for processing Venezuelan crude into petroleum products for international markets.



Strategic Investments and Upstream Assets
Strengthens US influence over Venezuelan oil trade while encouraging India to diversify away from Russia and limiting Venezuela's dependence on China and Iran.
India–US Strategic Alignment

Evolution of the Relationship

· The India–US relationship has evolved from post-Cold War estrangement into a "Comprehensive Global Strategic Partnership".
· Rather than a rigid, treaty-bound military alliance, it operates as a convergent alignment of democracies driven by:
· Shared geopolitical realities
· Economic complementarity
· Technological synergy

Foundational Defence Frameworks
· Operationalised through four foundational agreements:
· LEMOA (Logistics Exchange Memorandum of Agreement)
· COMCASA (Communications Compatibility and Security Agreement)
· BECA (Basic Exchange and Cooperation Agreement)
· GSOMIA (General Security of Military Information Agreement)
· Co-production initiatives include:
· INDUS-X defence innovation bridge
· GE F414 jet engine manufacturing

Critical and Emerging Technologies
· Cooperation advanced through the US–India TRUST initiative (2025), which succeeded iCET (Initiative on Critical and Emerging Technology).
· Covers: AI, semiconductors, quantum technologies, critical minerals, biotechnology, energy, and space (NISAR, Artemis Accords).

Minilateral and Plurilateral Cooperation
· Institutionalised through the Quad (India, US, Japan, Australia) in the Indo-Pacific.
· Also through I2U2 (India, Israel, UAE, US).

Significance of the Alignment

1. Multipolar Indo-Pacific and Rule-Based Order

· Acts as the primary structural counterbalance to unilateral assertiveness and maritime coercion in the Indo-Pacific.
· Ensures freedom of navigation along critical Sea Lines of Communication (SLOCs).

2. Supply Chain Decoupling and Resilience

· Positions India as a trusted "China-Plus-One" manufacturing and technology hub.



- Supported by initiatives like the Mineral Security Partnership (MSP) and Indo-Pacific Economic Framework (IPEF).

3. Net Security Provider

- Enhances India's Intelligence, Surveillance, and Reconnaissance (ISR) capabilities along continental borders and across the Indian Ocean Region (IOR).

4. Global South Bridge

- Enables Washington to engage constructively with the Global South through New Delhi's diplomatic credibility.
- Helps India pitch for reformed multilateralism.

Persistent Challenges in India–US Strategic Alignment

1. Trade Protectionism and Tariff Frictions

- Recurring disputes over punitive tariffs, market access in agriculture and dairy, digital trade taxes.
- US "America First" reciprocal tariff threats continue to delay a comprehensive Bilateral Trade Agreement.

2. Skilled Mobility and Immigration Curbs

- Steep hikes in H-1B visa fees and recent restrictions on key green-card processing programmes.
- Directly hurts major Indian IT service providers (such as TCS and Wipro) and constrains people-to-people economic integration.

3. Strategic Autonomy vs. Sanctions Regimes

- Friction persists over India's defence and energy ties with Russia and Iran.
- Examples: Chabahar port, S-400 systems, and proposed US secondary sanctions bills on Russian energy buyers.

4. Divergence on Neighbourhood Geopolitics

- Periodic US diplomatic postures regarding Pakistan (including Washington's claims regarding mediation during the May 2025 India-Pakistan military clashes) clash with India's red lines on cross-border terrorism.

5. Regulatory and Technology Transfer Bottlenecks

- Strict US export control regimes — International Traffic in Arms Regulations (ITAR) and Export Administration Regulations (EAR) — often slow down the actual transfer of proprietary military and dual-use technologies.
- This happens despite high-level political clearances.

6. Commercial Hurdles in US and Venezuelan Crude

- High trans-oceanic freight rates caused US crude shipments to India to nearly halve in 2026.
- Scaling up Venezuelan crude requires navigating:
- Lingering US sanctions provisions
- Payment channels
- Degraded Venezuelan upstream infrastructure

Measures Needed to Strengthen the India–US Partnership

1. Institutionalising "Sanctions-Proof" Energy Corridors

- Establish long-term sovereign waivers and transparent payment-settlement mechanisms.
- This would allow Indian refiners and PSUs to invest in and process Venezuelan crude without facing sudden snapback sanctions.

2. Early Harvest Trade Architecture

- Utilise the current 60-day tariff review window to finalise a mutually beneficial "Early Harvest" trade deal.
- This should lock in predictable tariff rates, resolve non-tariff barriers, and protect service-sector mobility.

3. Carve-Outs for Tech and Talent Mobility

- Create a dedicated trusted-partner visa and green-card track under the iCET framework for STEM professionals.
- This would insulate technological collaboration from domestic immigration politics.

4. Accelerating Co-Production over Buyer-Seller Models

- Fast-track defence industrial roadmaps by streamlining US Congressional notifications and export licensing for:
- Jet engines
- Unmanned systems
- Seabed sensors

5. Expanding Trilateral and Minilateral Synergy

- Scale up the India–US–UAE trilateral framework to operationalise the IMEC corridor.
- This links West Asian capital, Indian refining and digital infrastructure, and US technological leadership.

Conclusion

In a rapidly changing world order, expanding strategic convergence should anchor India–US relations. By combining energy security, technological cooperation, and Indo-Pacific alignment, both countries can overcome short-term trade and visa disputes and build a durable, mutually beneficial strategic partnership.

Previous Year Question (Prelims)

Q. Consider the following statements: (2024)

Statement-I: Recently, Venezuela has achieved a rapid recovery from its economic crisis and succeeded in preventing its people from fleeing/ emigrating to other countries.

Statement-II: Venezuela has the world's largest oil reserves.

Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

(b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

(c) Statement-I is correct, but Statement-II is incorrect

(d) Statement-I is incorrect, but Statement-II is correct

Answer: (d)

Innovative Wastewater Treatment Technologies under Namami Gange



Why in News?

The Ministry of Jal Shakti recently highlighted the role of innovative wastewater treatment technologies under the Namami Gange Programme (NGP) in:

- Improving sewage management
- Enhancing treatment efficiency
- Promoting treated-water reuse

Key Facts About the Namami Gange Programme

About the Programme

- The Namami Gange Programme (NGP) is an Integrated Conservation Mission launched by the Government of India in June 2014.
- It has twin objectives:
- Pollution abatement
- Conservation and rejuvenation of the National River Ganga

Implementation

- Implemented by the National Mission for Clean Ganga (NMCG) under the Ministry of Jal Shakti.

Phases and Funding

Phase Period Outlay

Phase I Up to March 2021 ₹20,000 crore

Phase II Extended up to March 2026 ₹22,500 crore

Phase	Period	Outlay
Phase I	Up to March 2021	₹20,000 crore
Phase II	Extended up to March 2026	₹22,500 crore

Major Components

The programme focuses on:

- Sewage treatment infrastructure
- Riverfront development
- River-surface cleaning
- Biodiversity conservation
- Afforestation
- Public awareness
- Industrial effluent monitoring
- Ganga Gram (village-level sanitation)

Key Interventions

Intervention Objective

Nirmal Ganga Reducing pollution through sewage and industrial effluent treatment

Aviral Ganga Improving river ecology and maintaining continuous river flow

Jan Ganga Strengthening public participation and community awareness

Gyan Ganga Promoting scientific research, monitoring and evidence-based river management

Technology-Neutral Approach

- The programme adopts sewage treatment technologies based on:
- Local geography
- Land availability
- Sewage characteristics
- Treatment requirements

Conventional Technologies

- Activated Sludge Process (ASP)
- Sequential Batch Reactor (SBR)
- Upflow Anaerobic Sludge Blanket (UASB)
- Moving Bed Biofilm Reactor (MBBR)

Innovative Technologies

- NEREDA
- Food Chain Reactor (FCR)
- Electrocoagulation
- Constructed Wetlands
- Soil Biotechnology (SBT)
- Decentralised Johkasou systems

Sewage Infrastructure Development

- 199 sewerage infrastructure projects worth 31,327 crore undertaken.
- 116 projects completed so far.

New Treatment Capacity

- Target: 5,270 MLD (million litres per day) of new sewage treatment capacity.
- Achieved: 2,237 MLD created.

Rehabilitation of Existing STPs

- Target: Rehabilitation of 925 MLD of existing STP capacity.
- Achieved: 873 MLD rehabilitated.

Important Wastewater Treatment Technologies under Namami Gange

1. Food Chain Reactor (FCR)

- An advanced biological treatment system combining:
- Activated sludge
- Fixed artificial media
- Plant roots
- Removes organic pollutants and nutrients with lower land and energy requirements.
- Five FCR-based STPs are operational:
- Two in Bhatpara (West Bengal)
- Three in Prayagraj (Uttar Pradesh)
- Another is under construction at Bhagalpur (Bihar).

2. NEREDA Technology

- Uses aerobic granular sludge containing

compact microbial granules with efficient settling properties.
- Reduces space and energy required for sewage treatment.
- Provides approximately:
- 50% power savings over the Activated Sludge Process
- 20% savings over Sequential Batch Reactor (SBR) technology

3. Electrocoagulation
- A non-biological treatment process using electric current and metal electrodes.
- Destabilises and removes suspended and emulsified pollutants from wastewater.
- Suitable for:
- Cold climates
- Mountainous terrain
- Space-constrained locations
- 17 installations in Uttarakhand, including Badrinath and Chamoli.

4. Advanced Oxidation Process (AOP)
- Uses oxidation-based treatment to remove pollutants.
- Enables on-site wastewater treatment with reduced dependence on extensive sewer networks.

5. Constructed Wetlands
- Engineered ecosystems using:
- Aquatic plants
- Soil
- Substrates
- Microorganisms
- Remove pollutants through natural physical, chemical, and biological processes.
- At Bithoor (Uttar Pradesh):
- Six constructed wetlands treat approximately 2 MLD of wastewater.
- Reduce Biochemical Oxygen Demand (BOD) from around 75 mg/L to below 10 mg/L.

6. Soil Biotechnology (SBT)
- A nature-based wastewater treatment process combining:
- Filtration
- Sedimentation
- Infiltration
- Microbial decomposition
- Removes organic and inorganic pollutants.

7. Johkasou Technology
- A prefabricated, decentralised sewage treatment system integrating:
- Biological treatment
- Settling
- Disinfection
- Filtration
- Within a compact unit.
- Useful in:
- Small settlements
- Hilly areas
- Locations lacking conventional sewerage networks
- Six installations recorded in Uttarakhand.

8. Multi-Storey STPs
- Use vertical infrastructure to minimise land requirements in densely populated or geographically constrained locations.
- India's first four-storey municipal STP developed at Muni Ki Reti, Uttarakhand, with a capacity of 7.5 MLD.

9. Faecal Sludge and Septage Management (FSSM)
- Treats faecal sludge collected from septic tanks and on-site sanitation systems.
- Extends wastewater management to areas without sewer networks.
- A 10 kilolitres per day Faecal Sludge Treatment Plant pilot sanctioned at Chunar (Uttar Pradesh) to address sanitation requirements in smaller habitations.

Conclusion
The Namami Gange Programme demonstrates a shift from conventional sewage treatment infrastructure towards technology-driven, decentralised, and resource-efficient wastewater management. Integrating innovative treatment processes, nature-based solutions, renewable energy, and performance-linked operations can strengthen river rejuvenation, water security, and sustainable urban development in India.

Previous Year Question (Prelims)
Q. Which of the following are the key features of 'National Ganga River Basin Authority (NGRBA)'? (2016)

1. River basin is the unit of planning and management.
2. It spearheads the river conservation efforts at the national level.
3. One of the Chief Ministers of the States through which the Ganga flows becomes the Chairman of NGRBA on rotation basis.
Select the correct answer using the code given below:
(a) 1 and 2 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

Answer: (a)

Pradhan Mantri Samajik Sahayata Yojana





Why in News?
The Union Cabinet recently approved:
- The continuation and renaming of the National Social Assistance Programme (NSAP) as the Pradhan Mantri Samajik Sahayata Yojana.
- Revisions to the disability pension under the programme.

Key Facts About the Pradhan Mantri Samajik Sahayata Yojana

About the Scheme
- Originally launched as the National Social Assistance Programme (NSAP) on 15th August 1995.



· Provides financial assistance to Below Poverty Line (BPL) households facing:
· Old age
· Widowhood
· Disability
· Death of a primary breadwinner

Constitutional Basis

· Gives effect to Article 41 under the Directive Principles of State Policy (DPSP).
· Article 41 directs the State to provide public assistance in cases of:
· Unemployment
· Old age
· Sickness
· Disablement
· This is to be done within its economic capacity.

Nodal Ministry and Funding

· Implemented under the Ministry of Rural Development.
· It is a 100% centrally funded Centrally Sponsored Scheme.
· Provides minimum financial assistance to eligible beneficiaries in rural and urban areas.

Implementation

· Implemented by States and Union Territories.
· Gram Panchayats and municipalities assist in:
· Beneficiary identification
· Payments (largely facilitated through Direct Benefit Transfer (DBT)

Financial Outlay

· Approved allocation of ₹53,428 crore for five years (2026–2031).
· Covers approximately 3.20 crore beneficiaries across all 36 States and UTs.

State Supplementation

· States and UTs provide additional pension assistance above the Central contribution.
· Top-ups range from ₹50 to ₹5,700 per month (as of September 2026).
· This results in average monthly pensions of around ₹1,100 in several States/UTs.

Continuity

· The old-age pension, widow pension, and family benefit schemes continue unchanged.
· The disability pension has been revised in terms of:
· Eligibility
· Coverage
· Assistance rates

Revised Components

The programme comprises three monthly pension schemes and one lump-sum family benefit scheme, all renamed under the revised framework.

Key Reforms under Pradhan Mantri Divyangjan Pension Yojana

Background

· Introduced in February 2009 as the Indira Gandhi National Disability Pension Scheme.
· Originally provided pensions to BPL persons aged 18 years and above with at least 80% disability.

Legal Basis

· The revisions align the scheme with the Rights of Persons with Disabilities Act, 2016.
· This Act was enacted to give effect to the UN Convention on the Rights of Persons with Disabilities (UNCRPD).
· Section 2(r) of the Act defines a person with a benchmark disability as someone with at least 40% of a specified disability, as certified by the competent authority.

Revised Eligibility

· Minimum disability requirement reduced from 80% to 40%.
· Minimum age of 18 years removed — extending eligibility from birth.

Enhanced Pension

Monthly Central assistance increased by 25%:

Age Group	Earlier Amount	Revised Amount
Below 80 years	₹300 per month	₹375 per month
80 years and above	₹500 per month	₹625 per month

Expanded Coverage

· Number of beneficiaries increased from 8.33 lakh to 27.48 lakh.

Implementation

· Revised guidelines covering eligibility, beneficiary numbers, and assistance rates are to be issued and implemented within three months of the Cabinet's approval.

Significance of the Reforms

1. Inclusive Social Protection

· Extends financial assistance to persons with 40–79% disabilities.
· Reduces exclusion under the earlier 80% eligibility threshold.

2. Childhood Disability Support

· Removal of the minimum age requirement enables early financial assistance to eligible children with disabilities from BPL households.

3. Financial Security

· Enhanced pension rates strengthen basic income support for economically vulnerable persons with disabilities.

4. Cooperative Federalism

· Central assistance is supplemented by State and UT contributions.
· Enables locally responsive social protection while maintaining a common national minimum.

Summary of Revised Framework

Disability eligibility	Reduced from 80% to 40% benchmark disability
Minimum age	Removed (eligibility from birth)
Pension (below 80 years)	Increased from ₹300 to ₹375 per month
Pension (80 years and above)	Increased from ₹500 to ₹625 per month
Beneficiary coverage	Increased from 8.33 lakh to 27.48 lakh
Legal alignment	Aligned with RPwD Act, 2016 (UNCRPD)

Financial outlay ₹53,428 crore for 2026–2031
Total beneficiaries Approximately 3.20 crore across 36 States/UTs.

Conclusion

The Pradhan Mantri Samajik Sahayata Yojana strengthens India's social security framework through expanded disability coverage, enhanced financial assistance, and continued support for vulnerable households. Aligning disability pensions with the Rights of Persons with Disabilities Act, 2016 represents an important step towards inclusive, rights-based and accessible social protection in India.

Previous Year Question (Prelims)

Q. Which of the following statements with regard to persons with disabilities in India is/are correct? (2026)

1. The Rights of Persons with Disabilities Act, an Act passed by the Parliament of India in 2018, mandates reservation in education and employment, places a legal duty on Governments to ensure accessibility and non-discrimination.
2. The Sugamya Bharat Abhiyan focuses on achieving universal accessibility for Persons with Disabilities across three key domains — built infrastructure, transport systems and information and communication technology.
3. The National Divyangjan Finance and Development Corporation (NDFDC) is a public sector organisation set up by the Ministry of Corporate Affairs as a not-for-profit company to promote entrepreneurship among Persons with Disabilities (PwDs).
Select the answer using the code given below:
(a) 1 and 2
(b) 2 only
(c) 1 and 3
(d) 1 only

Answer: (b)



Singapore-India Maritime Bilateral Exercise (SIMBEX) 2026

Why in News?

The 33rd edition of the Singapore-India Maritime Bilateral Exercise (SIMBEX-2026) was conducted from 21 to 26 October 2026 at Visakhapatnam, Andhra Pradesh.

- The Republic of Singapore Navy (RSN) participated with its ship RSS Supreme, a Formidable-class stealth frigate with an embarked SH-70B helicopter .
- The Indian Navy was represented by:
- INS Nilgiri (indigenously built stealth frigate)
- INS Kamorta (Anti-Submarine Warfare corvette)
- Aviation assets including P-8I and Dornier maritime patrol aircraft, Hawk Advanced Jet Trainers and MH-60R helicopters .

Origin and Evolution

Initiation

- SIMBEX was initiated in 1994 as Exercise Lion King .
- It is one of the Indian Navy's longest-running bilateral maritime exercises, conducted annually without interruption.
- The exercise continued even during the COVID-19 pandemic through modified formats .

Growth Over Time

- Over the years, SIMBEX has expanded in scope and complexity.
- It now incorporates maritime security operations and multidimensional warfare serials .
- The exercise reflects the enduring and evolving defence relationship between the Indian Navy and the RSN .

Objectives of SIMBEX

The exercise aims to:

- Enhance operational interoperability between the two navies.
- Promote professional cooperation and mutual understanding.
- Address common maritime security challenges.
- Promote peace and stability in the Indo-Pacific region .

Structure of SIMBEX-2026

Harbour Phase (21–23 October 2026)

Conducted at Visakhapatnam, the Harbour Phase included:

- Professional interactions between naval personnel.
- Subject Matter Expert Exchanges (SMEEs) on topics including:
- Unmanned Systems Operations
- Submarine Rescue
- Maritime Air Operations
- Cross-deck visits between ships.
- Sporting engagements.
- Planning conferences for the sea phase .

Sea Phase (24–26 October 2026)

Conducted in the Bay of Bengal, the Sea Phase featured:

- Anti-Submarine Warfare (ASW) drills.
- Anti-surface warfare exercises.
- Anti-air warfare drills.
- Maritime Interdiction Operations.
- Seamanship evolutions and tactical manoeuvres.
- Gunnery firing and air defence exercises.
- Cross-deck flying operations .

The Sea Phase concluded with a sail-past of participating ships .

Significance of SIMBEX

1. Strengthening Defence Cooperation

- SIMBEX reaffirms the longstanding maritime partnership between India and Singapore.
- It demonstrates the shared commitment of both nations to enhancing interoperability and addressing common maritime security challenges .

2. Operational Interoperability

- The exercise sharpens warfighting capabilities and enhances coordination between the two navies.
- It provides a platform for both navies to hone operational competencies and forge enduring people-to-people ties .

3. Indo-Pacific Stability

- SIMBEX supports efforts to promote peace and stability in the Indo-Pacific region.



- It reflects India's commitment to ASEAN centrality and a free, open and inclusive Indo-Pacific .

4. India's Act East Policy

- Singapore is a key pillar in India's Act East Policy .
- The exercise reinforces India's engagement with Southeast Asia through a trusted defence partner.

Broader India–Singapore Defence Cooperation

Other Joint Exercises

Exercise Domain

SIMBEX Navy

Bold Kurukshetra Army

Joint Military Training Air Force

SIMTEX (trilateral with Thailand) Navy

Source: Drishti IAS and PIB

Recent High-Level Engagements

- On 28 October 2026, Raksha Mantri Shri Rajnath Singh held bilateral talks with Singapore's Defence Minister Mr Chan Chun Sing on the sidelines of the 13th ADMM-Plus in Cebu, Philippines.
- Discussions focused on expanding the scope of joint military exercises across the Army, Navy, and Air Force .
- India extended an invitation to Singapore for Aero India 2027 .

Conclusion

SIMBEX-2026 represents a significant milestone in the India–Singapore defence relationship, marking the 33rd consecutive edition of one of the Indian Navy's longest-running bilateral exercises. Through its harbour and sea phases, the exercise enhances operational interoperability, strengthens professional bonds, and reaffirms both nations' commitment to maritime security and stability in the Indo-Pacific. As Singapore remains a key pillar of India's Act East Policy, exercises like SIMBEX contribute to a free, open, and inclusive regional order.

Previous Year Question (Prelims)

Q. Consider the following statements: (Based on defence exercises)

Statement-I: SIMBEX is a bilateral maritime exercise between India and Singapore.

Statement-II: SIMBEX was initiated in 1994 as Exercise Lion King.

Which one of the following is correct in respect of the above statements?

(a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

(b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

(c) Statement-I is correct but Statement-II is incorrect

(d) Statement-I is incorrect, but Statement-II is correct

Answer: (b)



AgriVoltaics World Conference 2026

Why in News?

The 7th AgriVoltaics World Conference (AWC) 2026 was held at Bharat Mandapam, New Delhi, from 21 to 23 October 2026.

- Theme: "Powering the Global South"
- This marked the first time the conference was hosted in the Global South, with India as the host nation .

About Agrivoltaics

- Agrivoltaics (Agri-PV) refers to the dual use of land for agriculture and solar photovoltaic energy generation.
- It allows farming and electricity production to coexist on the same land .
- Solar panels are installed at an elevated height above crops, enabling farmers to earn from both farming and electricity .

Conference Details

Organisers

- Host: Ministry of New and Renewable Energy (MNRE), Government of India.
- Support: Germany's Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety (BMUV).
- Partner: Conexio-PSE .

Objectives

The conference aimed to:

- Increase farmers' incomes.
- Improve land-use efficiency.
- Promote clean energy.
- Build climate-resilient agricultural systems .

Startup Innovation: AgriVoltaics Pitch Hub

- Provided a platform for startups to showcase technologies.
- Connected innovators with investors and industry leaders .

Knowledge Resources Released

Three key resources were launched during the conference:

Resource Released By
AgriPV Policy Handbook MNRE
Decision-Making Tool India Agrivoltaics Alliance (IAA)
Book of Abstracts International Water Management Institute (IWMI)
Source: PIB and IBEF .

Key Government Initiatives and Announcements

1. "Annadatas to Urjadatas"

- The initiative promotes farmers' transition from traditional food producers (Annadatas) to clean-energy producers (Urjadatas).
- Creates additional rural income opportunities .
- Union Minister Shri Pralhad Joshi stated that the farmer who has always fed the nation is now also lighting it up .

2. PM-KUSUM Linkage

- The Government announced plans to introduce a major agrivoltaics programme under the next phase of PM-KUSUM (PM-KUSUM 2.0).
- This will enable farmers to generate solar electricity while continuing agricultural cultivation .
- Focus areas:
- Small and marginal farmers
- Farmer Producer Organisations (FPOs)
- Cooperatives and panchayats
- Ensuring land ownership remains with the farmer .

3. Three Streams of Income for Farmers

A farmer can earn from the same acre through:

1. Crop sold — agricultural produce.
2. Power sold to DISCOM — solar electricity revenue.
3. Money saved on diesel — reduced fuel costs .

4. Cost Considerations

- Agrivoltaic plants cost around 25–30% more than conventional ground-mounted solar projects.
- Electricity from agrivoltaic installations could cost 3.20 per unit, compared with 2.60 per unit for ground-mounted projects .
- The government aims to reduce this cost gap through wider adoption and a proposed central support scheme .

India's Agrivoltaic Potential

Estimated Potential

- India's estimated agrivoltaic potential ranges from 3,000 GW to nearly 14,000 GW .
- A TERI study estimates the potential at 1,192 GW to 2,129 GW using 545 W bifacial modules .

High-Potential States

The following states have been identified as high-potential states:

- Maharashtra
- Rajasthan
- Andhra Pradesh
- Madhya Pradesh
- Karnataka
- Uttar Pradesh

These six states together account for nearly 50% of India's estimated agrivoltaic potential .

Rationale for Potential

- Favourable cropland availability.
- Strong solar resources.
- Suitable agro-climatic conditions .

Current Status

- As of August 2025, India had 36 operational agrivoltaic projects with a combined installed capacity of 37.54 MW.
- Another 10 pilot projects are under development .

Significance of Agrivoltaics for India

1. Addressing Land Constraints

- India has about 18% of the world's population but only 2.4% of the world's land.
- More than 85% of farmers are small and marginal, cultivating less than 2 hectares .
- Agrivoltaics allows both crop and solar on the same land without forcing farmers to choose between them .

2. Income Security for Farmers

- Solar income provides regular earnings in both good and bad years.
- For small farmers, solar income is not just extra income — it is security .

3. Climate Resilience

- Solar panels can shield crops from extreme weather conditions such as hail, strong winds, heavy rainfall, and frost.
- Improved soil moisture retention and protection against drought and erosion .

4. Renewable Energy Targets

- India's non-fossil fuel-based installed power capacity reached 308 GW, with around 100 GW added in less than two-and-a-half years .
- Agrivoltaics can contribute to India's renewable energy targets without additional land acquisition.

5. Relevance to the Global South

- India's experience in agrivoltaics is particularly relevant to the Global South, where:
- Farms have small holdings.
- There is abundant sunshine.
- Grids are still catching up .
- India's scale provides an opportunity to develop affordable and practical solutions replicable across the Global South .

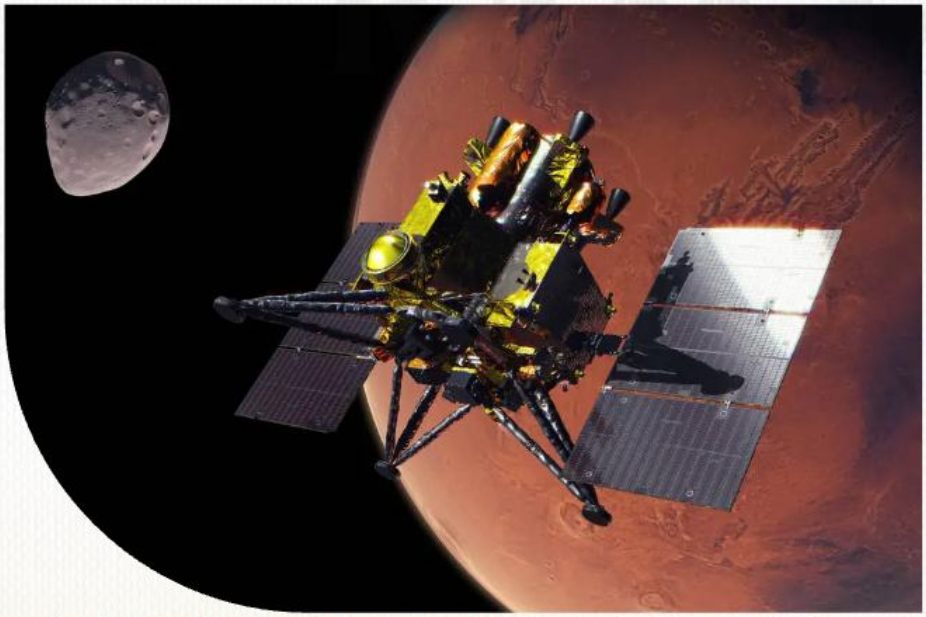
Policy Linkage PM-KUSUM 2.0 (dedicated agrivoltaics component)

India's Potential 3,000–14,000 GW (broad estimates); 1,192–2,129 GW (TERI)
High-Potential States Maharashtra, Rajasthan, Andhra Pradesh, MP, Karnataka, UP
Conclusion
The AgriVoltaics World Conference 2026 marked a significant milestone in India's efforts to integrate agriculture and renewable energy, positioning the country as a leader in agrivoltaics for the Global South. By promoting the "Annadatas to Urjadatas" vision, linking agrivoltaics with PM-KUSUM 2.0, and addressing cost challenges, India aims to double farmers' income streams, enhance land-use efficiency, and contribute to clean energy targets without compromising food security. Agrivoltaics represents a win-win solution for India's twin challenges of energy transition and agricultural prosperity.

Previous Year Question (Prelims)

Q. Consider the following statements about Agrivoltaic farming:
1. It refers to the dual use of land for agriculture and solar photovoltaic energy generation.
2. Solar panels in agrivoltaic systems are typically installed at an elevated height to allow farming activities beneath.
3. Agrivoltaics can provide additional income to farmers through the sale of electricity.
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)



JAPAN'S MMX Mars Mission

Why in News?

Japan's Martian Moons eXploration (MMX) mission, led by JAXA, was launched aboard an H3 launch vehicle to study Mars's moons, Phobos and Deimos, and return material from Phobos to Earth.
Objective: MMX will study the origin, composition, gravity, internal structure and surface of Phobos, while also observing Deimos, Mars's only two natural satellites.

It will collect regolith, loose dust, soil and rock fragments, from Phobos. This would be the world's first sample-return mission from the Martian system.

A small French-German rover, IDEFIX, will examine the low-gravity surface and help assess terrain conditions for sampling.
MMX builds on JAXA's asteroid sample-return experience through Hayabusa and Hayabusa2, demonstrating advanced navigation, landing and return-capsule capabilities.

Major Mars Missions:

NASA (USA): Viking 1 and 2 achieved successful Mars landings in 1976; Pathfinder

deployed the Sojourner rover (1997). Curiosity and Perseverance examine Martian habitability and evidence of ancient life, while Ingenuity achieved the first controlled powered flight on another planet.
NASA Orbiters: Mars Odyssey and the Mars Reconnaissance Orbiter (MRO) study Martian geology and support communications with surface missions.
CNSA (China): Tianwen-1 deployed the Zhurong rover to investigate Martian geology and subsurface water.
ISRO (India): The Mars Orbiter Mission (Mangalyaan), launched in 2013, made India the first country to reach Mars orbit on its maiden attempt.
ESA (Europe): Mars Express studies the surface and subsurface, while the ExoMars Trace Gas Orbiter analyses atmospheric gases.
UAE Space Agency: The Hope Probe, launched in 2020, studies Martian weather and atmospheric dynamics.

National SARAS Mela 2026

Why in News?

The National SARAS Mela 2026 was organised in Vijayawada, Andhra Pradesh.
- It marks the first National SARAS Mela held outside Delhi-NCR.
- It brings together women entrepreneurs from 34 States and Union Territories.
- The objective is to promote Self-Help Group (SHG) enterprises, market access, and sustainable rural livelihoods under DAY-NRLM.



Key Facts About SARAS Mela

About

- SARAS Mela is a government-supported platform organised under the Deendayal Antyodaya Yojana–National Rural Livelihoods Mission (DAY-NRLM).
- It connects rural women entrepreneurs, particularly Self-Help Groups (SHGs), with:
- Consumers
- Institutional buyers
- Wider markets

Evolution

- The first National SARAS Mela was organised in Delhi in 1999, with approximately 65 beneficiaries.
- Since then, it has expanded to national, regional, state, and district levels.

Major Achievements
- A total of 117 National SARAS Melas have been organised.
- Annual sales exceed 200 crore.
- States and UTs are expected to organise at least two State-level SARAS Melas annually.
- This contributes to an average of around 50 events nationwide each year.

Products Showcased
- Handlooms
- Handicrafts
- Traditional textiles
- Natural products
- Processed foods
- Regional cuisines

Additional attractions:
- India Food Court
- Cultural showcases
- Dedicated learning spaces

Institutional Support

The initiative involves collaboration with:
- NABARD
- National Institute of Rural Development and Panchayati Raj (NIRDPR)
- Other government and private-sector stakeholders

Digital Market Access

Platform/Initiative Purpose
eSARAS Platform E-commerce initiative enabling customers to discover and purchase SHG products beyond physical exhibitions
SARAS Mela Digital App (2025) Facilitates SHG nominations, attendance management, and event-related information
Digital Payments Promotes UPI-based transactions while retaining alternative payment arrangements for financial inclusivity

Role of DAY-NRLM in Rural Women Empowerment

About DAY-NRLM
- A flagship rural poverty alleviation programme.

· Promotes women's economic empowerment through SHGs.
· Provides access to:
· Credit
· Skills
· Technology
· Institutional support
· Sustainable livelihood opportunities

How SARAS Melas Support DAY-NRLM

SARAS Melas strengthen DAY-NRLM by:
· Product branding
· Direct sales
· Buyer–seller linkages
· Access to national markets
Lakhpati Didi Initiative

About

· An outcome-oriented initiative under DAY-NRLM.
· Aims to enable SHG women to achieve sustainable annual household incomes of at least 1 lakh.
Income Sustainability Assessment
· Assessed over at least four agricultural seasons and/or business cycles.

Target Evolution

Year Target
2023 2 crore
2024 3 crore
December 2025 3 crore milestone achieved
February 2026 Enhanced target of 6 crore announced

Enterprise Development

SARAS Melas support the transition from subsistence livelihoods towards women-led microenterprises, enabling:
· Income diversification
· Business expansion
· Sustainable market participation







Significance of SARAS Mela 2026

1. Market-Oriented Rural Entrepreneurship

· Reflects a shift from traditional livelihood promotion towards market-oriented rural entrepreneurship.
· Women SHG members gain direct access to consumers and institutional buyers.

2. Women's Economic Empowerment

· Provides a platform for women entrepreneurs to showcase and sell their products.
· Strengthens financial independence and decision-making power among rural women.

3. Integration with Lakhpati Didi

· Complements the Lakhpati Didi initiative by providing market linkages that help women SHG members achieve the ₹1 lakh annual income target.

4. Digital Inclusion

· eSARAS platform and digital payments extend market access beyond physical exhibitions.
· Promotes financial inclusivity through multiple payment options.

5. Atmanirbhar Bharat

· Advances the vision of Atmanirbhar Bharat by promoting self-reliance among rural women entrepreneurs.

6. Cooperative Federalism

· Involves 34 States and UTs, showcasing collaborative efforts between the Centre, States, and institutions like NABARD and NIRDPR.

Conclusion

The National SARAS Mela 2026 reflects a significant shift from traditional livelihood promotion towards market-oriented rural entrepreneurship and women's economic empowerment. By integrating SHG enterprises, institutional support, digital marketplaces, and the Lakhpati Didi initiative, it strengthens inclusive rural development and advances the vision of Atmanirbhar Bharat.

Previous Year Question (Prelims)

Q. How does the National Rural Livelihood Mission seek to improve livelihood options of rural poor? (2012)

1. By setting up a large number of new manufacturing industries and agribusiness centres in rural areas.
2. By strengthening 'self-help groups' and providing skill development.
3. By supplying seeds, fertilizers, diesel pump-sets and micro-irrigation equipment free of cost to farmers.

Select the correct answer using the codes given below:
(a) 1 and 2 only
(b) 2 only
(c) 1 and 3 only
(d) 1, 2 and 3

Answer: (b)



NVS-03 & NavIC Navigation System

Why in News?

The Indian Space Research Organisation (ISRO) is set to launch the NVS-03 navigation satellite aboard the GSLV-F18 (Mk II) rocket from Sriharikota, Andhra Pradesh.

- This crucial mission is intended to restore and strengthen the capabilities of India's indigenous navigation system, NavIC (Navigation with Indian Constellation).
- The need arises following a shortage of operational satellites in orbit.

Summary

- ISRO's upcoming NVS-03 satellite aims to strengthen NavIC with:
- An indigenous rubidium atomic clock.
- L1-band civilian signals, improving reliability and civilian adoption.
- NavIC faces satellite attrition and limited standalone positioning capability.
- Deploying the remaining NVS satellites and promoting indigenous receiver manufacturing will strengthen India's strategic autonomy and self-reliance.

Key Facts About NVS-03

About

- NVS-03 is the third satellite in ISRO's second-generation NVS series.
- Designed to replace the ageing first-generation IRNSS satellites.
- Has a planned mission life of 12 years.

Restoration of Navigation Services

- Following successful orbital deployment and commissioning, NVS-03 could increase the number of operational NavIC satellites from three to four.
- This meets the minimum requirement for basic standalone positioning.

Indigenous Rubidium Clock

- A standout feature is the inclusion of a highly stable, indigenous Rubidium atomic clock.
- Developed by the Space Applications Centre (SAC) in Ahmedabad.
- This was developed to solve the issues caused by the failure of imported atomic clocks in earlier satellites.

L1 Band for Civilians

- Unlike the earlier generation, NVS-03 incorporates the civilian L1-band signal (along with L5 and S bands).
- This makes the satellite compatible with modern commercial platforms like:
- Smartphones
- Smartwatches
- Fitness trackers

What is the NavIC System?

About

- NavIC is the operational name of the Indian Regional Navigation Satellite System (IRNSS).
- An indigenous regional satellite-based navigation system developed by ISRO.
- Provides precise positioning and navigation services and enhances India's strategic autonomy.

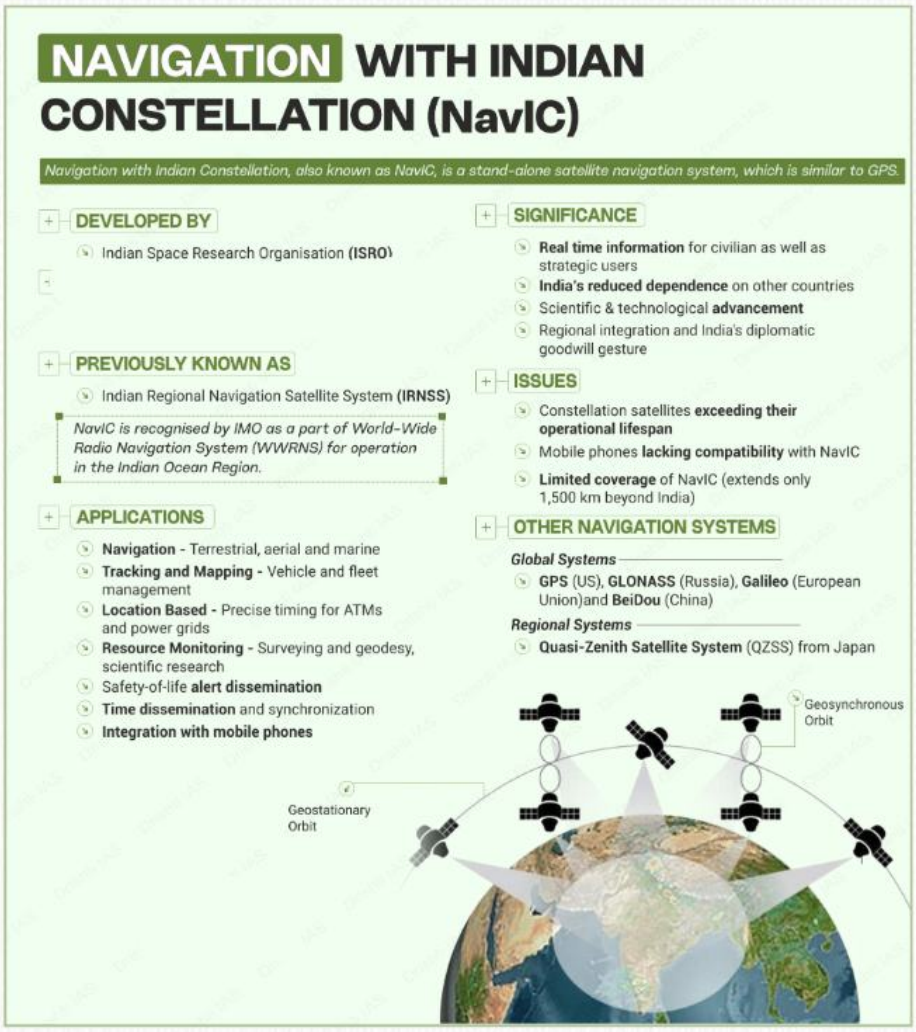
System Architecture

NavIC comprises three segments:

Segment	Function
Space Segment	Navigation satellites
Ground Segment	Satellite control, monitoring, and timing infrastructure
User Segment	Single-frequency, multi-frequency, and multi-constellation receivers

Service Areas

- Primary Service Area: Covers India and up to 1,500 km beyond its borders.
- Extended Service Area: Falls between the primary region and a rectangle bounded by 30° South to 50° North latitude and



30° East to 130° East longitude.

Navigation Services

Service User Group
Standard Positioning Service (SPS) Civilian users
Restricted Service (RS) Authorised users, including strategic and defence applications (encrypted)

- SPS accuracy: Positioning better than 20 metres and timing better than 40 nanoseconds (2σ) in the primary service area.

Evolution of NavIC

First Generation (IRNSS Series — 2013 to 2018)

- Comprised the IRNSS-1 series (1A, 1B, 1C, 1D, 1E, 1F, 1G).
- Mission life: 10 years.

Setbacks:

- IRNSS-1H (2017) failed to reach orbit due to a heat shield separation failure.
- It was subsequently replaced by the successful launch of IRNSS-1I in 2018.
- Many satellites in this series have suffered from imported atomic clock failures or are nearing the end of their mission lifespan.

Second Generation (NVS Series)

- Developed to enhance reliability.
- Features:
- Upgraded 12-year mission life.
- Broadcast in a new L1 frequency band (along with L5 and S bands).
- The L1 band enables:
- Interoperability with global systems like GPS.
- Integration into low-power civilian wearables like smartwatches.

Satellite Status

NVS-01 (Launched 2023) Currently operational; successfully hosts an indigenously developed rubidium atomic clock
NVS-02 (Launched 2025) Faced onboard technical issues preventing it from reaching its final operational orbit
NVS-04, NVS-05 Planned for the future
Current Constellation Status

- A fully operational NavIC system is designed to have a constellation of seven satellites:
- Three in Geostationary Orbit (GEO)
- Four in Inclined Geosynchronous Orbit (IGSO)
- Following the completion of IRNSS-1F's 10-year mission, NavIC has three operational satellites:
- IRNSS-1B
- IRNSS-1I
- NVS-01

Four-Satellite Requirement

- A navigation receiver generally needs signals from at least four satellites to determine:
- Latitude
- Longitude
- Altitude
- Receiver clock error
- This enables reliable three-dimensional positioning.

Residual Services

- Despite the loss of standalone positioning, NavIC continues to provide timing services.
- Some satellites retain one-way messaging capabilities useful for:
- Maritime safety
- Emergency alerts

Indigenous Tech Integration

- NavIC receivers are slated to integrate the AJIT microprocessor.
- It is the first-ever microprocessor conceptualised and developed in India by IIT Bombay.

Policy and Global Recognition

- NavIC tracking is mandatory for commercial vehicles (registered from 1st April 2019) in India.
- The US recognized NavIC as an allied navigation system in 2019.

International Recognition

- The International Maritime Organization (IMO) has recognised NavIC as a component of the World-Wide Radio Navigation System (WWRNS).
- This supports its use in maritime navigation.

Concerns Regarding the NavIC System

1. Threat to Strategic Autonomy

- NavIC was conceived after the US denied GPS access during the 1999 Kargil War.
- Any NavIC downtime forces the Armed Forces and critical infrastructure (power grids, high-frequency financial trading, railways) to rely on foreign systems during geopolitical crises.

2. Electronic Warfare Risks

- NavIC signals remain vulnerable to localized jamming and spoofing (manipulating signals to feed false locations).
- This requires constant cryptographic upgrades to its military-grade Restricted Service (RS).

3. Import Reliance and Atomic Clock Failures
- Navigation requires microsecond precision.
- The premature failure of imported rubidium atomic clocks in early IRNSS satellites crippled the system.
- This highlights the vulnerability of depending on foreign critical components.

4. CAG Report Indictment
- The Comptroller and Auditor-General of India (CAG) highlighted severe delays in the development of consumer-end receivers.
- These began years late, effectively wasting a massive chunk of the early satellites' mission life before civilians could even use the system.

5. Global Competition
- As a strictly regional system, NavIC struggles to attract international tech manufacturers (like Apple or Qualcomm).
- These manufacturers prefer to integrate global systems with larger economies of scale, such as:
- GPS (US)
- Galileo (Europe)
- BeiDou (China)

Measures Needed to Strengthen India's Regional Navigation System

1. Ensure Launch Continuity
- ISRO must successfully deploy the remaining NVS series satellites (NVS-04, NVS-05).
- This will maintain redundant satellites in orbit and prevent future service blackouts.

2. Indigenisation of Critical Components
- The successful deployment of indigenous Rubidium Atomic Clocks must be standard across all future NVS series satellites.
- This will end import reliance.

3. Ecosystem Development
- The government should incentivize domestic manufacturing of NavIC-compatible chipsets and receivers.
- This will drive civilian adoption and make NavIC the default navigation system in Indian smartphones.

4. Global Expansion
- As outlined in the 2021 satellite navigation draft policy, the long-term vision should be to expand NavIC's coverage from a regional system into a fully-fledged Global Navigation Satellite System (GNSS).

5. Leverage for Space Diplomacy
- India should proactively offer NavIC positioning services to friendly neighbouring countries in:
- SAARC
- BIMSTEC
- ASEAN
- This acts as a soft-power counterweight to China's aggressive expansion of its BeiDou system in the Indo-Pacific.

6. Interoperability Pacts
- Sign agreements with allied global systems (like Europe's Galileo and Japan's QZSS).
- This ensures seamless signal interoperability for users transitioning between different geographic zones.

Conclusion

The ongoing transition to the second-generation NVS series, featuring indigenous atomic clocks and L1 civilian frequencies, will strengthen NavIC's reliability, self-reliance, and global usability. This reinforces its role in India's strategic autonomy and expanding commercial space capabilities. By addressing challenges such as satellite attrition, atomic clock failures, and limited civilian adoption, and by implementing measures like launch continuity, indigenisation, ecosystem development, and space diplomacy, India can transform NavIC from a regional system into a globally competitive navigation system that serves both strategic and civilian needs.

Previous Year Question (Prelims)

Q. With reference to the Indian Regional Navigation Satellite System (IRNSS), consider the following statements: (2018)

1. IRNSS has three satellites in geostationary and four satellites in geosynchronous orbits.
2. IRNSS covers entire India and about 5500 sq. km beyond its borders.
3. India will have its own satellite navigation system with full global coverage by the middle of 2019.

Which of the statements given above is/are correct?

(a) 1 only
(b) 1 and 2 only
(c) 2 and 3 only
(d) None

Answer: (a)

VIKSIT BHARAT G RAM G Act, 2025

Why in News?

The Viksit Bharat–Guarantee for Rozgar and Ajeevika Mission (Gramin) (VB-G RAM G) has generated 31.69 crore person-days of employment, benefiting over 2.81 crore workers, with 61.65% women's participation as of 24th September 2026.

- This brings into focus the implementation of the VB-G RAM G Act, 2025.
- The Act replaced MGNREGA on 1st July 2026.

Key Features of the VB-G RAM G Act, 2025

About

- The VB-G RAM G Act, 2025 came into effect on 1st July 2026.
- It replaced MGNREGA to strengthen:
- Rural employment
- Livelihood security
- Productive asset creation
- Aligned with the vision of Viksit Bharat @2047.

Employment Guarantee
- Provides a statutory guarantee of 125 days of wage employment per financial year.
- This is an increase from 100 days under MGNREGA.
- Available to every eligible rural household whose adult members volunteer for unskilled manual work.

Priority Areas (Four Thematic Areas)

The Act focuses on four thematic areas to promote sustainable and resilient rural

development:
Thematic Area Focus
Water Security Water conservation and related infrastructure
Core Rural Infrastructure Development of essential rural assets
Livelihood-related Infrastructure Creation of productive assets supporting rural livelihoods
Extreme Weather Mitigation Works to strengthen resilience against climate-related disasters

Decentralised Planning

- Introduces Viksit Gram Panchayat Plans (VGPPs) .
- Prepared by Gram Panchayats.
- Approved by Gram Sabhas through participatory planning.
- Ensures that works reflect local development needs.
- Promotes a Whole-of-Government approach through convergence of Central, State, and local schemes under a single-plan, multi-funding framework.

Employment and Wage Protection

Provision Details
Employment Timeline Must be provided within 15 days of application; failing which workers are entitled to unemployment allowance
Wage Payment Through Direct Benefit Transfer (DBT) , generally within a fortnight after closure of the muster roll
Compensation for Delays Provided for delayed wage payments
Proximity to Village Employment preferably provided within 5 km of the applicant's village
Additional Allowance 10% wage allowance for work beyond 5 km but within the block

Funding Pattern

Category Central–State Cost Sharing
North-Eastern and Himalayan States 90:10
Other States/UTs with legislatures 60:40
UTs without legislatures 100% Central funding
Transparency and Accountability

- Face authentication-based attendance.
- Public disclosure of work and payment details.
- Mandatory Janata Boards at worksites to improve monitoring and accountability.

Agricultural Labour Availability

- States are required to notify periods during peak sowing and harvesting seasons.
- Works under the Act will not be undertaken during these periods.
- This ensures labour availability for agricultural activities.

Technology-Enabled Transparency and Governance

The Act integrates:

- e-KYC
- Face authentication
- Geo-tagging
- Electronic Measurement Books (e-MB)
- Real-time dashboards
- AI-enabled analytics

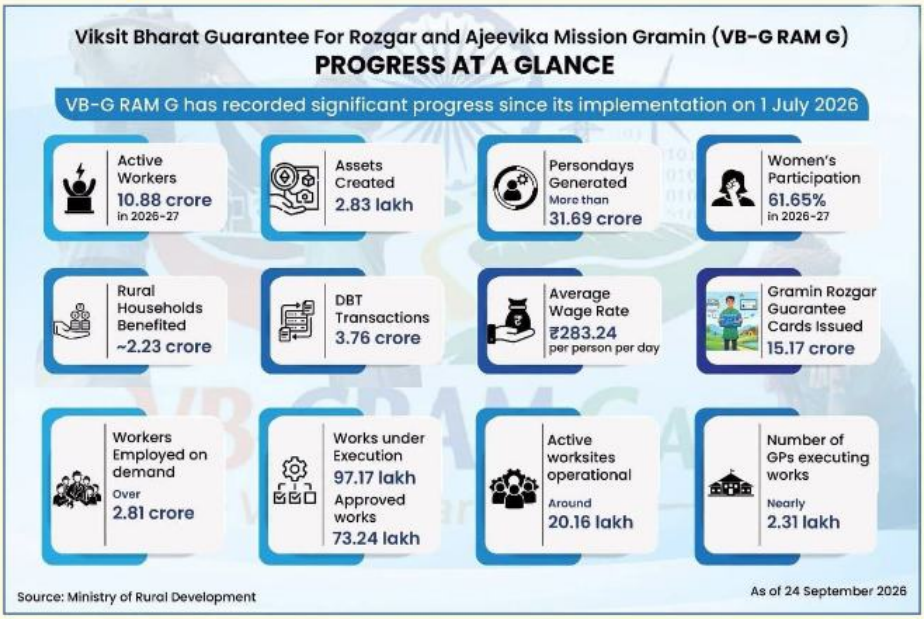
These are used for:

- Worker verification
- Work monitoring
- Transparent asset creation
- Data-driven oversight

Mandatory Janata Boards and public disclosures further strengthen accountability.
Viksit Gram Panchayat Plans (VGPPs)

About

- VGPPs are participatory, evidence-based, and convergence-driven local development plans.
- Aim to integrate rural employment generation with sustainable infrastructure and asset creation.
- Prepared by Gram Panchayats and approved by Gram Sabhas.
- Ensure bottom-up planning based on local needs and development priorities.





Key Features

Feature Description
Asset Mapping and Gap Assessment Identify existing infrastructure, public assets, and service delivery gaps to prioritise development works and avoid duplication
GIS-Based Planning Use Yuktdhara, PM Gati Shakti, Geographic Information System (GIS) , and other digital tools for geospatial mapping, integrated planning, and evidence-based decision-making
Scheme Convergence Adopt a Whole-of-Government approach, integrating resources and interventions from Central, State, and local schemes for coordinated village development
Multi-level Integration VGPPs are consolidated at the Block, District, State, and National levels, contributing to the Viksit Bharat National Rural Infrastructure Stack
Permissible Works The VGPP framework identifies 318 types of permissible works across the four thematic areas

Significance of VGPPs

- Strengthen decentralised governance.

- Promote participatory planning.
- Ensure efficient resource utilisation.
- Support sustainable rural infrastructure development.
- Link employment generation with long-term community assets.

Conclusion

The VB-G RAM G Act, 2025 represents a shift towards integrating statutory employment guarantees, participatory grassroots planning, and productive rural asset creation. Its long-term effectiveness will depend on:

- Timely employment provision
- Transparent wage payments
- Strong Gram Panchayat capacity
- Inclusive digital governance

By ensuring that rural development remains both employment-oriented and sustainable, the Act aims to contribute to the vision of Viksit Bharat @2047 while addressing the livelihood security of rural households across India.

Previous Year Question (Prelims)

Q. Among the following who are eligible to benefit from the "Mahatma Gandhi National Rural Employment Guarantee Act"? (2011)

(a) Adult members of only the scheduled caste and scheduled tribe households
(b) Adult members of below poverty line (BPL) households
(c) Adult members of households of all backward communities
(d) Adult members of any household

Answer: (d)

India Achieves 11 Crore Farmer IDs Under Digital Agriculture Mission



Why in News?

The Ministry of Agriculture and Farmers' Welfare has achieved the target of creating 11 crore Farmer IDs under the Digital Agriculture Mission.

- The target was completed on 23rd October 2026.
- This is five months ahead of the original deadline of 31st March 2027 .
- Over 6 crore farmers have already received benefits through Farmer ID-based service delivery .

About Farmer ID

- A unique digital identity for farmers.
- Created by linking farmers' details with their digitised land records under the Farmer Registry of AgriStack.
- Facilitates access to agricultural services and government schemes.
- Acts as a single reference point for accessing:
- Bank loans and Kisan Credit Card (KCC)
- Crop insurance (Pradhan Mantri Fasal Bima Yojana)
- Disaster relief assistance
- MSP-based crop procurement .

About the Digital Agriculture Mission

Approval and Outlay

- Approved by the Union Cabinet on 2nd September 2024.
- Under the Ministry of Agriculture and Farmers' Welfare.
- Total outlay: ₹2,817 crore, including a central share of ₹1,940 crore .

Objective

- Develop Digital Public Infrastructure (DPI) for agriculture.
- Enable data-driven governance, efficient service delivery, and farmer-centric digital solutions .

Key Components

Component	Description
AgriStack	Includes the Farmer Registry, Geo-referenced Village Maps, and Crop Sown Registry — created and maintained by States/UTs
Krishi Decision Support System (Krishi DSS)	Integrates satellite imagery, weather, soil, reservoir, and groundwater data to support crop mapping, yield estimation, drought/flood monitoring, and evidence-based agricultural planning
Soil Profile Mapping	Supports village-level mapping of soil characteristics for sustainable land use and crop planning

Key Features of AgriStack

Federated Architecture

- The State Farmer Registry is built in a federated manner.
- Ownership of data remains with the respective States .

Data Privacy and Security

- Developed in accordance with the Digital Personal Data Protection Act, 2023 and DPDP Rules 2025.
- Ensures complete privacy of farmers' data — collected only with consent, and farmers have full control over sharing.
- Security features are compliant with MeitY and CERT-In cybersecurity guidelines.
- Data is maintained in an encrypted manner.

Integration with Schemes

Farmer IDs are being integrated with:

- Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)
- Pradhan Mantri Fasal Bima Yojana (PMFBY)
- MSP-based procurement
- Credit delivery
- Input distribution
- Disaster relief .

Significance of the Achievement

1. Reduced Paperwork and Simplified Access

- Farmers no longer need to repeatedly visit government offices or banks or submit the same documents for different schemes.
- The Farmer ID system reduces the need for repeated verification .

2. Transparent Benefit Delivery

- Bank loans and KCC: Loan process becomes easier with reduced document verification.
- PMFBY: Compensation assessment and disbursement become more transparent, with payments made directly into farmers' bank accounts.
- Disaster relief: Relief reaches genuine and eligible farmers more quickly.
- MSP procurement: The digital system helps eliminate intermediaries and ensures farmers receive the full value due for their produce .

3. Elimination of Fraud and Duplication

- Linking a verified farmer database with agricultural services helps eliminate fraud and duplicate verification.
- Improves coordination among government departments and strengthens policy formulation and monitoring .

4. Cooperative Federalism

- The achievement is credited to the collective efforts of Central and State governments.
- Described as an outstanding example of cooperative federalism .



5. Inclusion of Tenant Farmers

- States and UTs are taking specific steps to bring tenant farmers and actual cultivators onto the digital platform.
- Objective: No eligible farmer is left out of government welfare and support programmes .

6. Alignment with Viksit Bharat @2047

- Farmer ID is described as a strong foundation for a transparent, accountable, and farmer-centric system of governance.
- Supports the vision of a developed India with prosperous farmers .

Technology and Implementation Support

Digital Crop Survey (DCS)

- Conducted during Rabi 2025-26 in 648 districts, covering more than 31.3 crore plots across the country .
- Provides accurate, real-time crop area information for every agricultural plot .

Geo-referenced Village Maps

- As of August 2026, 5.52 lakh geo-referenced village maps have been completed .

Digital General Crop Estimation System (DGCES)

- Provides accurate and timely crop yield data for evidence-based crop production estimates.
- Digitized Crop Cutting Experiments conducted in 43,105 villages during 2025-26 .

Soil Resource Mapping

- Initiated by the Soil and Land Use Survey of India (SLUSI).
- Village-level soil inventory at 1:10,000 scale using high-resolution satellite and ground data.
- As of June 2026, soil survey of 52.38 million hectares has been carried out .

Conclusion

The achievement of 11 crore Farmer IDs under the Digital Agriculture Mission marks a significant milestone in India's efforts to build a digital public infrastructure for agriculture. By providing farmers with a unique digital identity linked to land records, the initiative aims to reduce paperwork, eliminate intermediaries, ensure transparent benefit delivery, and strengthen the agricultural ecosystem. The achievement reflects cooperative federalism and aligns with the vision of Viksit Bharat @2047. However, the real test lies in data quality, interoperability, and ensuring that the benefits reach small and marginal farmers across rural India, where digital infrastructure remains uneven.

Previous Year Question (Prelims)

Q. Consider the following statements about the Digital Agriculture Mission:

1. It was approved by the Union Cabinet in September 2024 with a total outlay of 2,817 crore.

2. AgriStack, a key component of the Mission, consists of the Farmer Registry, Geo-referenced Village Maps, and Crop Sown Registry.

3. The Farmer ID is created by linking farmers' details with their digitised land records.

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)



RBI's Data Centre & Cybersecurity Training Institute

Why in News?

The Prime Minister of India recently inaugurated the Reserve Bank of India's newly established Data Centre and Cybersecurity Training Institute in Bhubaneswar, Odisha .

- **The project is valued at ₹169 crore .**
- **It represents a significant step towards strengthening India's digital financial infrastructure and technological self-reliance .**

Key Features of the Data Centre

Infrastructure and Certification

- The facility includes four state-of-the-art data centres .
- It is certified to the Uptime Institute's Tier IV standard — the highest tier for data-centre infrastructure resilience .
- Tier IV certification indicates fault-tolerant infrastructure designed to withstand individual equipment failures or distribution-path interruptions without affecting operations .
- The data centre has a capacity for 700 racks .
- It is built on an 18.5-acre site at Info Valley-II, Bhubaneswar, with ground broken in March 2023.
- The complex also features 590kW of on-site solar capacity, underscoring a commitment to sustainable operations .

Critical Financial Infrastructure

The facility will support mission-critical payment and settlement systems, including:

System Function

NEFT National Electronic Funds Transfer

RTGS Real Time Gross Settlement

e-Kuber RBI's platform for government banking operations

- These systems operate around the clock .
- The data centre enhances operational continuity and reduces service disruptions .

Digital Sovereignty

- The RBI-operated facility will function independently of third-party cloud service providers .
- RBI Governor Sanjay Malhotra stated: "It is sovereign. We do not depend on third-party cloud service providers; we have our own data centre" .
- This strengthens control over critical financial infrastructure and reduces concentration risk .

Disaster Resilience

- Bhubaneswar offers geographical separation from RBI's three existing data centres in Maharashtra .
- It is situated in a different seismic zone, reducing the risk of simultaneous disruptions from earthquakes or other regional disasters .
- The availability of skilled local talent was also a factor in site selection .

Key Features of the Cybersecurity Training Institute

Purpose and Scope

- The institute will provide specialised training and research opportunities for:
- RBI personnel
- Bank employees
- Personnel from other financial-sector institutions
- Approximately two-thirds of the campus has been allocated to the training institute, with the remaining one-third for the data centre .

Focus Areas

The institute will focus on cutting-edge technologies relevant to the Banking,

Financial Services, and Insurance (BFSI) sector, including:
- Artificial Intelligence (AI)
- Big Data Analytics
- Quantum Computing
- Blockchain
- Enterprise Computing

Research and Capability Building
- It will undertake research aimed at making financial systems more secure and efficient .
- The Prime Minister emphasised that modern warfare targets economies through evolving cyber threats and that a rising economic power must shield its financial system from cyber looters and cyber terrorists .
- He stressed the need to replace outdated training tools with modern infrastructure and skilled human resources .

Significance of the Facilities

1. Strengthening Financial-System Resilience
- The data centre provides redundancy and backup for India's critical payment systems.
- It supports the RBI's primary facility in Navi Mumbai .
- Enhances the reliability and uptime of digital financial services .

2. Cybersecurity Preparedness
- The training institute builds institutional capacity to counter evolving cyber threats.
- RBI Governor noted: "Cybersecurity is becoming increasingly important, especially in the wake of artificial intelligence" .

3. Digital Sovereignty
- Reduces dependence on foreign cloud providers for India's most critical financial infrastructure .
- Aligns with the vision of technological self-reliance and Atmanirbhar Bharat .

4. Disaster Risk Reduction
- Geographical diversification away from Maharashtra's seismic zone protects against single-point failures .

5. Institutional Capacity Building
- Develops skilled human resources within the RBI and the broader banking sector.
- Supports India's aspiration to become a developed nation by 2047 .





6. Cooperative Federalism and Regional Development
- The facility brings a major national institution to Odisha, supporting regional development .
- The Prime Minister noted that Odisha is poised to write a new future — "from mines to microchips".

Conclusion

The RBI's Data Centre and Cybersecurity Training Institute in Bhubaneswar represents a significant milestone in strengthening India's digital financial infrastructure and technological sovereignty. By operating its own Tier IV-certified data centre, the RBI reduces dependence on foreign cloud providers while ensuring operational continuity for critical payment systems like NEFT and RTGS. The geographical diversification away from Maharashtra's seismic zone enhances disaster resilience. Simultaneously, the Cybersecurity Training Institute builds institutional capacity to counter evolving cyber threats in an era of AI-driven warfare. Together, these facilities reinforce India's financial-system resilience, cybersecurity preparedness, digital sovereignty, and institutional capacity, supporting the vision of a secure and self-reliant financial ecosystem for Viksit Bharat @2047.

Previous Year Question (Prelims)

Q. Consider the following statements about the Reserve Bank of India's Data Centre in Bhubaneswar:

1. The data centre has been certified to the Uptime Institute's Tier IV standard, the highest tier for data-centre infrastructure resilience.

2. The facility will support mission-critical payment systems including NEFT and RTGS, and will function independently of third-party cloud service providers.

3. The data centre is located in Bhubaneswar primarily because it is in the same seismic zone as RBI's existing data centres in Maharashtra.

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)

UNEP Emissions Gap Report 2026

Why in News?

The United Nations Environment Programme (UNEP) has released the 17th edition of its flagship Emissions Gap Report (EGR) 2026.

Title: "The Point of Return: Urgent emissions cuts needed to come back from overshoot of 1.5°C"

Key Headlines

- The report notes that the opportunity to limit global warming to 1.5°C with "no or limited" overshoot has been lost.
- The report arrives just before COP31 (31st Conference of the Parties to the UNFCCC), to be held in Antalya, Türkiye, in November 2026.

Summary

- The UNEP EGR 2026 warns of an inevitable 1.5°C overshoot under current trajectories.
- It highlights inadequate emission cuts, insufficient NDCs, and the need for urgent global climate action.
- India must accelerate renewable energy, strengthen carbon markets, decarbonise heavy industries, and secure climate finance while upholding climate justice, CBDR-RC, and developmental equity.

Key Findings of UNEP's Emissions Gap Report 2026

1. The End of the "No Overshoot" 1.5°C Pathway

- Decades of insufficient climate action have made overshooting the 1.5°C warming limit inevitable.
- UNEP's lowest-overshoot scenario estimates:
- A 66% chance of limiting peak warming to 1.7–1.8°C.
- A 50% chance of returning to 1.5°C by 2100, provided stringent emission cuts begin immediately.
- Without immediate mitigation, every five years of emissions at current levels would add approximately 200 $GtCO_2$, increasing peak warming by around 0.1°C.
- The pathway also requires about 320 $GtCO_2$ of carbon dioxide removal (CDR) this century — its large-scale feasibility remains uncertain.

2. Emissions Trends and the Widening Gap

- The gap between conditional NDCs and the lowest 1.5°C overshoot pathway is projected to widen:
- From 5 $GtCO_2e$ in 2030 to 16 $GtCO_2e$ in 2035.
- The apparent narrowing of the 2030 implementation gap largely reflects the USA's withdrawal from the Paris Agreement, rather than stronger climate action.
- G20 members (excluding the African Union) account for approximately 76% of global GHG emissions.
- Under current policies, only six G20 members are likely to meet their unconditional 2030 NDC targets.

3. Temperature Outlook

Scenario Projected Warming by 2100

Current policies 2.8°C

All NDCs implemented 2.6°C

All net-zero pledges also fulfilled 2.1°C

- Efforts under the Paris Agreement have reduced projected warming from 4°C to 2.8°C — but this remains above the 1.5°C goal.

4. Progress on the First Global Stocktake (GST) Outcomes

- The first GST at COP28 called for:
- Tripling renewable energy capacity by 2030.



- Doubling energy-efficiency improvement rates by 2030.
- Transitioning away from fossil fuels.
- Reducing methane emissions.
- Halting deforestation.

Progress achieved:

- Renewable capacity is growing three times faster than projected in 2015.
- Solar PV is growing seven times faster.
- Global renewable capacity could reach 11,500 GW by 2030.
- Electric vehicles account for around one in four cars sold worldwide.

Concerns

- Fossil fuel consumption and subsidies continue to rise.
- Deforestation must decline more than ten times faster to meet the 2030 target.
- Renewable energy expansion alone is insufficient without fossil fuel phase-down and stronger action on non-CO_2 emissions.

5. Nationally Determined Contributions (NDCs)

- As of September 2026, 124 Parties covering 76% of global emissions had submitted new NDCs.
- However, their impact on projected warming remains negligible, as emission reduction targets remain insufficient.
- Only India, Tunisia, and Uzbekistan retain emissions-intensity targets.
- Full implementation would reduce 2035 emissions by just 3.5–4 $GtCO_2e$ compared with 2030 NDC levels.

6. Required Mitigation Efforts

Limiting the 1.5°C overshoot requires global GHG emission reductions (relative to 2025 levels):

Target Year	Required Reduction
2030	18%
2035	45%
2040	69%

These far exceed existing NDC commitments.

India-Specific Findings

1. Low Per Capita Burden

- India is the third-largest absolute emitter (~4.5 $GtCO_2e$) after China and the US.
- However, India's per capita emissions (~3.1 tCO_2e) are less than half the world average (6.4 tCO_2e).
- This underscores the principle of Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC).

2. NDC Compliance

- India is one of only six G20 members projected to meet its unconditional 2030 targets under current policies.

India's Initiatives to Reduce Emissions

1. National Action Plan on Climate Change (NAPCC)
2. National Solar Mission
3. National Green Hydrogen Mission
4. Perform, Achieve and Trade (PAT) Scheme
5. Carbon Credit Trading Scheme (CCTS)
6. PM Surya Ghar Muft Bijli Yojana
7. FAME India Scheme
8. Mission LiFE (Lifestyle for Environment)
9. Green India Mission
10. Ethanol Blending Programme

- This is driven by:
- Structural shifts towards renewables.
- Robust domestic policies like the Carbon Credit Trading Scheme (CCTS).
- PM Surya Ghar: Muft Bijli Yojana.

3. Intensity Targets vs. Absolute Emissions

- The report notes a caveat: India uses an intensity target rather than an absolute reduction target.
- As a result, absolute emissions are projected to rise between 2030 and 2035 due to GDP growth.

About UNEP

About

- Founded in 1972, UNEP is the world's leading authority on environmental protection.
- It unites 193 Member States to tackle the triple planetary crisis:
- Climate change
- Biodiversity loss
- Pollution

Role

- Hosts the UN Environment Assembly.
- Facilitates critical international agreements.
- Champions the Sustainable Development Goals (SDGs).

Major Flagship Publications

- Emissions Gap Report
- State of Finance for Nature 2026
- Global Cooling Watch
- Global Environment Outlook

Key Challenges in Achieving Climate Goals Equitably and Effectively

1. Equity vs. Ambition

- The lowest-overshoot pathway demands deep emission cuts from all large emitters.
- This disproportionately pressures developing nations like India.
- It violates the principle of CBDR-RC, given that the Global North has largely exhausted the global carbon budget.

2. Unproven Reliance on Carbon Dioxide Removal (CDR)

- The 1.5°C return pathways heavily depend on removing ~320 $GtCO_2$ from the atmosphere later this century.
- This relies on unproven, costly technologies.
- There is a risk of catastrophic failure if these technologies do not scale.

3. The Climate Finance Chasm

- Ambitious transitions in the Global South (like India's 60% non-fossil capacity target by 2035) are strictly conditional on international finance.
- The ongoing deadlock over the New Collective Quantified Goal (NCQG) on climate finance halts progress.

4. Weaponization of Climate via Trade

- The operationalisation of unilateral, protectionist measures like the EU's Carbon Border Adjustment Mechanism (CBAM) unfairly penalises exporters from developing economies.
- This shifts the economic burden of climate action to the Global South.

5. The Implementation Deficit

- A glaring gap exists between long-term Net Zero promises and the immediate domestic legislative actions required to phase down fossil fuels.

Measures Needed to Strengthen Global Climate Action

Global Level

1. Strengthening Future NDCs
- Countries should accelerate implementation of existing commitments.
- Use the second Global Stocktake in 2028 to guide stronger, economy-wide emission reduction targets, particularly for 2040.

2. Redirecting Subsidies
- Immediately phase out the USD 920 billion in fossil fuel subsidies.
- Redirect these funds toward green technology transfer and adaptation in vulnerable countries.

3. Bridging the Climate Finance Gap
- Inadequate and uncertain concessional climate finance constrains developing countries' ability to implement ambitious mitigation measures.
- There is a need to fulfil and strengthen commitments under the New Collective Quantified Goal (NCQG).

India Level

1. Operationalise Domestic Carbon Pricing
- Rapidly scale and strictly monitor the Carbon Credit Trading Scheme (CCTS) to safeguard against trade barriers like CBAM.
- Ensure domestic carbon pricing mechanisms retain revenues within the country.

2. Targeting Hard-to-Abate Sectors
- While renewable electricity is on track, India must intensify policy focus on:
- Reducing non-CO_2 gases (methane from agriculture).
- Decarbonising heavy industries (steel and cement).

3. Charting the 2040 Pathway
- To maintain its leadership in the Global South and deflect international pressure, India should begin charting a roadmap for when its absolute emissions will peak.
- This should align with its long-term Net-Zero by 2070 commitment.

Conclusion

The UNEP EGR 2026 highlights a critical shift from preventing temperature overshoot to managing its impacts. For India, the priority is to accelerate the low-carbon transition while safeguarding developmental needs and advocating climate justice and equitable global climate action. The report underscores that renewable energy expansion alone is insufficient, it must be paired with fossil fuel phase-down, stronger NDCs, climate finance, and equity-based approaches rooted in CBDR-RC.

Previous Year Question (Prelims)

Q. The 'Common Carbon Metric', supported by UNEP, has been developed for:

(a) assessing the carbon footprint of building operations around the world
(b) enabling commercial farming entities around the world to enter carbon emission trading
(c) enabling governments to assess the overall carbon footprint caused by their countries
(d) assessing the overall carbon footprint caused by the use of fossil fuels by the world in a unit time

Answer: (a)

