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Features :

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Poverty, a persistent concern

Source: The post **"Poverty, a persistent concern"** has been created based on **"Poverty, a persistent concern",** published in "Business Line" on 01st June 2026.

UPSC Syllabus: GS Paper 3– Indian Economy

Context: Poverty continues to be a major developmental challenge in India despite improvements in welfare schemes and social protection systems. Based on recent consumption expenditure data and the Rangarajan Committee approach, about **26.8% of India's population**, or nearly **374 million people**, remains below the poverty line. The persistence of poverty in specific regions indicates that it is largely structural and regional in nature.

Nature and Extent of Poverty in India

1. It is estimated that **29% of the rural population** and **22% of the urban population** live below the poverty line.
2. Nearly **374 million people** require subsistence-based support and interventions.
3. The States of **Uttar Pradesh, Bihar, Madhya Pradesh, and West Bengal** account for more than **48% of the poor population**, although their share in the total population is less than 40%.
4. States such as **Jharkhand, Chhattisgarh, and Odisha** have poverty rates exceeding **45% of their population**.
5. Around **80% of the poor population** is concentrated in ten States, indicating a strong regional concentration of poverty.
6. States such as **Punjab, Haryana, Sikkim, Goa, and Tripura** have significantly lower poverty levels and have largely succeeded in eliminating extreme poverty.

Reasons for Structural and Regional Poverty

1. Subsistence Agriculture

a. Poverty is concentrated in States where agriculture remains subsistence-oriented and productivity is low.
b. States such as Uttar Pradesh, Bihar, and Assam continue to face high levels of poverty due to limited agricultural transformation.

2. Mineral-Rich Regions

a. Several mineral-rich States, including Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha, Rajasthan, and West Bengal, continue to experience high poverty levels.
b. The benefits of natural resource extraction have not adequately translated into broad-based local development.

3. Limited Economic Diversification

a. Poverty-prone States have a lower share of employment in industry, information technology, professional services, banking, and public administration.
b. As a result, workers remain dependent on low-productivity sectors for their livelihoods.

4. High Dependency Ratio

a. Poverty-stricken States have a dependency ratio of about **47%**, which is higher than that of better-performing States.
b. A higher dependency burden reduces household savings and investment capacity.

5. Limited Impact of Migration

a. Migration has not emerged as a complete solution because migrants often face language barriers, social isolation, and poor living conditions.
b. Therefore, poverty continues to remain persistent in the source regions.

6. Structural Nature of Poverty

a. The relatively lower Gini coefficients in States such as Bihar and Uttar Pradesh suggest that poverty is not primarily driven by inequality.
b. The persistence of poverty despite welfare measures indicates the existence of deep structural constraints.

Measures to Address Persistent Poverty

1. Measures for Mineral-Rich Areas

a. District Mineral Foundation (DMF) funds should be utilized for skill development and employment generation.
b. Greater investments should be made in schools, primary health centres, and nutrition programmes.
c. Infrastructure development should be prioritized to improve connectivity and economic opportunities.
d. Incentives should be provided to establish processing and value-addition industries near mining regions.
e. Local economies should be diversified to reduce excessive dependence on mining activities.
f. Corporate Social Responsibility (CSR) funds should be used more effectively for local development.

2. Measures for Areas of Subsistence Agriculture

a. Agricultural reforms should be undertaken to improve productivity and efficiency.
b. Land consolidation should be promoted to achieve economies of scale.
c. Farmers should be encouraged to shift towards high-value agriculture and crop diversification.
d. Effective price stabilization mechanisms should be developed to reduce income uncertainty.
e. Non-farm employment opportunities should be created in nearby rural and semi-urban areas.

3. Governance and Social Measures

a. Development programmes should focus on local resource endowments and local needs.
b. Local entrepreneurship should be promoted to generate sustainable employment opportunities.
c. Targeted and time-bound social protection systems should be strengthened to support vulnerable populations.

Conclusion: India has achieved considerable success in reducing extreme poverty through welfare programmes, food security measures, and improved access to basic amenities. However, poverty remains deeply entrenched in specific regions characterised by subsistence agriculture and mineral dependence. A strategy focused on structural transformation, local economic development, human capital formation, and region-specific interventions is essential for achieving inclusive and sustainable poverty reduction.

Question: Poverty in India is increasingly structural and region-specific despite significant reductions in extreme poverty. Examine the nature of poverty in India and suggest measures to address persistent poverty pockets.

Source: Businessline

Shaping the next chapter in India-Canada relations

Source: The post **"Shaping the next chapter in India-Canada relations"** has been created based on **"Shaping the next chapter in India-Canada relations",** published in "The Hindu" on 01st June 2026.

UPSC Syllabus: GS Paper 2: International Relations

Context: India and Canada are entering a new phase in their bilateral relationship as both countries seek to strengthen cooperation in a multipolar and innovation-driven world. Recent high-level engagements have revived discussions on expanding cooperation in trade, technology, energy security, education and people-to-people ties. Both countries are working towards building a future-oriented partnership based on shared economic and strategic interests.

Significance of India–Canada Relations

1. Economic Importance

a. India represents a large consumer market and a major driver of global economic growth.
b. Canada views India as an important partner in the Indo-Pacific region and a key destination for trade and investment.
c. India's rapid growth provides significant opportunities for Canadian businesses and investors.
d. Canada's strengths in natural resources, energy and advanced technologies complement India's development needs.

2. Strategic Importance

a. Both countries are committed to strengthening cooperation in economic security, technology collaboration and clean energy.
b. India and Canada can contribute to building resilient and diversified global supply chains.
c. Their partnership can support stability and prosperity in the Indo-Pacific region.

Major Areas of Cooperation

1. Trade and Investment

a. Both countries are engaged in negotiations for a Comprehensive Economic Partnership Agreement (CEPA).
b. They aim to finalize the agreement by the end of 2026.
c. Bilateral trade is targeted to reach approximately $50 billion by 2030.
d. Increased trade and investment can create new business opportunities and strengthen economic integration.

2. Energy and Critical Minerals

a. **India and Canada** are holding discussions on uranium and critical minerals.
b. Canada can support India's energy transition through the supply of clean energy resources.
c. Cooperation in critical minerals can help strengthen supply chain resilience and support emerging industries.

3. Technology and Innovation

a. Both countries can collaborate in technology, artificial intelligence and digital innovation.
b. Joint research initiatives can enhance technological capabilities and industrial competitiveness.
c. Innovation partnerships can generate long-term economic benefits for both nations.

4. Education and Skills

a. Educational cooperation remains an important pillar of bilateral relations.
b. Academic exchanges can strengthen knowledge sharing and human capital development.
c. Collaboration in skill development can support workforce requirements in both countries.

Role of the Indian Diaspora

1. The Indian diaspora serves as a strong bridge between India and Canada.
2. Indian-origin entrepreneurs, professionals, academics and students contribute significantly to Canadian society.
3. The diaspora promotes cultural understanding and strengthens people-to-people ties.
4. Shared democratic values and multiculturalism further reinforce bilateral relations.
5. The success of the diaspora helps create goodwill and trust between the two countries.

Benefits of Stronger Economic Cooperation

1. Canadian investment can support India's manufacturing and infrastructure development.
2. India's expanding market offers growth opportunities for Canadian companies.
3. Collaboration in clean energy and technology can promote sustainable development.
4. Stronger business partnerships can generate employment and enhance productivity.
5. Diversified trade relations can reduce dependence on limited markets and improve economic resilience.

India–Canada Cooperation in the Indo-Pacific

1. The Indo-Pacific region has become a major centre of global economic activity and strategic competition.
2. India and Canada share an interest in promoting a free, open and rules-based Indo-Pacific.

3. Cooperation can strengthen resilient supply chains and economic security.
4. Joint efforts in clean energy, climate action and maritime cooperation can contribute to regional stability.
5. Collaboration in the Indo-Pacific can create new opportunities for trade, investment and innovation.

Challenges in the Relationship

1. Political differences have affected bilateral engagement in recent years.
2. Trust deficits have slowed progress in some areas of cooperation.
3. Economic opportunities have not yet been fully realised despite strong complementarities.
4. Greater institutional and business-level engagement is required to translate intent into outcomes.

Way Forward

1. Both countries should sustain high-level political engagement and dialogue.
2. The Comprehensive Economic Partnership Agreement should be concluded at the earliest.
3. Cooperation in critical minerals, clean energy and advanced technologies should be expanded.
4. Business-to-business partnerships should be strengthened to increase investment flows.
5. The Indian diaspora should be further leveraged to promote economic and cultural cooperation.
6. Both countries should deepen collaboration in the Indo-Pacific to address common regional challenges.

Conclusion: India and Canada possess significant economic, technological and strategic complementarities. Renewed engagement between the two countries has created an opportunity to rebuild trust and expand cooperation. A stronger India–Canada partnership can promote economic growth, innovation, energy security and Indo-Pacific stability while advancing the interests of both nations.

Question: India and Canada are seeking to rebuild and deepen their bilateral relationship in a rapidly evolving global order. Discuss the opportunities and challenges in India–Canada relations. Examine how stronger cooperation can contribute to economic growth and Indo-Pacific stability.

Source: The Hindu

Aravalli Degradation and Rising Dust Storm Risks

UPSC Syllabus: Gs Paper 3- Environment
Introduction

Recent dust storms across Rajasthan and Delhi-NCR have renewed attention on the ecological importance of the Aravalli Range. Acting as a natural barrier between the Thar Desert and the Indo-Gangetic plains, the Aravallis slow dust-laden winds and limit desert expansion. However, growing degradation due to mining, vegetation loss, and human activities is weakening this protective role, increasing concerns about dust storms, air pollution, and broader environmental impacts.

Ecological Significance of the Aravalli Range

1. **Natural Barrier Against Desert Winds:** The Aravalli Range stands between the Thar Desert and the Indo-Gangetic plains, slowing dust-bearing winds and reducing the movement of sand towards Delhi-

NCR and northern India. The presence of obstacle dunes on its western slopes provides visible evidence of this protective role.

2. **Role of Vegetation in Dust Interception:** Vegetation forces winds to pass through natural barriers, creating a scrubbing effect that reduces the transport of sand and dust particles.

3. **Prevention of Desertification:** The range acts as the first line of defence against the eastward expansion of desert conditions into Haryana, Delhi, and adjoining regions.

4. **Groundwater Recharge Function:** The hills and vegetation help absorb rainwater and support groundwater recharge across the region.

5. **Support for Biodiversity and Wildlife:** The Aravallis provide habitats and ecological corridors that sustain wildlife and maintain ecosystem connectivity.

6. **Climate Regulation Function:** The range helps regulate local temperatures and contributes to environmental stability across surrounding regions.

7. **Improvement of Air Quality:** By trapping particulate matter and limiting dust transport, the Aravallis help improve air quality in nearby urban centres.

State of Degradation of the Aravallis

1. **Disappearance of Hills:** A **Forest Survey of India (2018)** assessment found that **31 out of 128 Aravalli hills in Rajasthan had disappeared** due to human pressures.

2. **Loss of Medium-Elevation Hills:** Hills ranging from 200 to 600 metres above sea level have been lost in areas such as Naraina, Kalwar, Kotputli, Jhalana, and Sariska.

3. **Mining-Induced Damage:** Mining of red silica, granite, and other minor minerals has damaged hillocks and weakened the natural barrier function of the range.

4. **Deforestation and Vegetation Loss:** Loss of forests and vegetation has reduced the ability of the landscape to stabilise soil and trap dust particles.

5. **Urbanisation and Construction Pressure:** Rapid urban growth and construction activities have altered natural landscapes and increased ecological stress on the range.

6. **Land-use Change and Encroachments:** Human settlements, land-use conversion, and encroachments have fragmented the Aravalli ecosystem.

7. **Pastoral and Human Activities:** Pastoral activities and continuous human interference have contributed to the degradation of natural habitats.

8. **Expansion of Ecological Gaps:** A 2009 Wildlife Institute of India study identified 12 gaps in the Aravalli Range that have expanded due to forest degradation and inadequate vegetation cover.

Rising Dust Storm Risks and Environmental Consequences

1. **Greater Dust Movement Towards Northern India:** Meteorologists note that dust from Rajasthan now reaches the northern plains even during less intense dust events.

2. **Increased Exposure of Delhi-NCR:** Delhi and neighbouring districts already lie in a high dust-storm exposure zone. Degradation of the Aravallis increases the impact of such storms.

3. **High Dust-Storm Frequency in Northwest India:** The **India Meteorological Department (**IMD) Climate Hazards and Vulnerability Atlas places parts of northwest India in the highest dust-storm frequency class, averaging 0.89 to 1.55 dust-storm days.

4. **Frequent Dust Activity in Delhi:** In June, Delhi records a dust-storm frequency of 2.5 days, the highest in the country for that month.

5. **Dust Transport at Lower Wind Speeds:** Dust is now being carried towards the northern plains when wind speeds reach 35–40 kmph, unlike earlier when stronger storms were required.

6. **Deterioration of Air Quality:** More dust reaching urban centres can worsen air pollution and add to existing air-quality challenges in Delhi-NCR.

7. **Impact on Rainfall Patterns:** Growing gaps in the Aravalli barrier may affect rainfall patterns in surrounding regions.

8. **Changes in Sunlight and Temperature:** Dust particles alter the amount of sunlight reaching the ground, affecting surface temperatures and temporarily reducing temperatures over large areas.

Factors Intensifying Dust Storms

1. **Pre-Monsoon Climatic Conditions:** Dust storms are common during April to June when intense heat and dry weather dominate northwestern India.

2. **Influence of Desert Winds:** South-westerly and westerly winds transport dust from the Thar Desert across northern India.

3. **Climate Change and Rising Temperatures:** Higher temperatures create hotter and drier conditions, making soil more vulnerable to wind erosion.

4. **Heatwaves and Extreme Weather:** Heatwaves and changing atmospheric conditions strengthen pre-monsoon winds and increase the likelihood of dust storms.

5. **Land Degradation in Arid Regions:** Deforestation, poor land management, and degradation of drylands leave more loose soil available for transport by wind.

6. **Weakening of Natural Windbreaks:** Loss of hillocks, ridges, forests, and vegetation reduces the ability of the Aravallis to slow desert winds.

7. **Increased Dust Generation from Mining:** Mining activities generate additional dust and further weaken the landscape's capacity to resist erosion.

8. **Loss of Landscape Continuity:** The effectiveness of the Aravallis depends on the continuity of the entire range. Gaps and breaks allow winds to travel farther with fewer obstacles.

Way Forward

1. **Regulation of Mining Activities:** Strict enforcement of environmental regulations is needed to reduce damage caused by illegal and unsustainable mining.

2. **Restoration of Degraded Hills and Forests:** Damaged landscapes should be restored through ecological rehabilitation and forest regeneration efforts.

3. **Strengthening Vegetation Cover:** Increasing tree cover can improve the natural scrubbing effect and reduce dust movement.

4. **Preventing Encroachments and Land-use Change:** Better management is required to control encroachments and unsustainable conversion of natural land.

5. **Maintaining Landscape Continuity:** Protecting hillocks, ridges, and ecological corridors is important for preserving the barrier function of the range.

6. **Improving Scientific Monitoring:** Regular monitoring of dust storms, vegetation loss, and ecological gaps can support timely policy action.

7. **Integrated Ecosystem Management:** Conservation efforts should address forests, wildlife habitats, groundwater systems, and land resources together.

Conclusion

The Aravalli Range is a critical ecological barrier that protects northern India from desertification, dust storms, and environmental degradation. However, mining, deforestation, urbanisation, and land-use change are weakening this natural shield. Conserving and restoring the Aravallis is essential for maintaining air quality, groundwater security, climate resilience, biodiversity, and ecological stability across Delhi-NCR and the Indo-Gangetic plains.

Question for practice:

Discuss the ecological significance of the Aravalli Range and examine how its degradation is increasing dust storm risks and environmental challenges in northern India.

Source: Indian Express

The Cloud is the New Frontier of Digital Sovereignty

UPSC Syllabus: Gs Paper 3- Science and Technology

Introduction

The possibility of disruption of cloud services to **Nayara Energy** due to foreign sanctions obligations highlighted the strategic risks arising from dependence on foreign-controlled digital infrastructure. The episode showed that even when operations comply with domestic laws, critical digital services may remain vulnerable to external jurisdictions. As cloud computing, artificial intelligence, and data become central to governance and economic activity, **digital sovereignty** has emerged as a key concern for ensuring security, resilience, and strategic autonomy..

Understanding Digital Sovereignty

1. **Meaning of Digital Sovereignty:** Digital sovereignty refers to a country's ability to exercise authority over its digital infrastructure, data, technologies, and online systems according to its own laws and priorities.

2. **Infrastructure Sovereignty:** Digital sovereignty begins with control over connectivity infrastructure such as networks, data centres, internet exchange points, and digital identity systems.

3. **Service Sovereignty:** Countries seek to reduce excessive dependence on foreign platforms, cloud services, search engines, and digital ecosystems that dominate online activities.

4. **Data Sovereignty:** Citizens' data should remain under national jurisdiction, with clear rules governing its storage, access, and use.

5. **Knowledge Sovereignty:** In the AI era, datasets, language resources, AI models, and model weights have become strategic assets requiring greater domestic control.

6. **Digital Sovereignty as a National Priority:** Countries increasingly treat digital borders with the same importance as physical borders because digital systems now support critical national functions.

7. **Growing Strategic Importance of Data:** Data has evolved from an operational resource into a strategic asset that influences governance, economic activity, and global decision-making.

Significance of Cloud Sovereignty

1. **Cloud as Critical Infrastructure:** Cloud platforms support hospitals, banks, government agencies, supply chains, and numerous digital services that are essential for modern economies.

2. **Dependence Creates Strategic Vulnerability:** Heavy reliance on foreign cloud providers can expose countries and organisations to decisions influenced by foreign laws and geopolitical developments.

3. **Control Matters More Than Data Location:** The key question is not simply where data resides but who controls access, operations, and decision-making authority over the infrastructure.

4. **Cloud Sovereignty Supports Sensitive Workloads:** Personal and sensitive information, along with AI workloads, require stronger control, compliance, monitoring, and protection mechanisms.

5. **AI Expands Sovereignty Concerns:** Large language models are increasingly becoming part of government and enterprise operations, making control over AI systems strategically important.

6. **Technology Companies as Digital Sovereigns:** Large technology companies increasingly control infrastructure, services, data centres, platforms, and AI systems across countries, giving them significant digital influence.

7. **Need for Practical Sovereignty:** The objective is not digital isolation but sufficient control to protect national interests while remaining connected to global networks.

India's Digital Sovereignty Landscape

1. **Strong Digital Public Infrastructure:** India has developed Aadhaar, Unified Payments Interface (UPI), DigiLocker, Electronic Signature (eSign), Ayushman Bharat Digital Mission (ABDM), and the Open Network for Digital Commerce (ONDC), creating one of the world's most advanced Digital Public Infrastructure (DPI) ecosystems.

2. **Control Over the Application Layer:** India exercises significant control over digital public services that support identity, payments, health, commerce, and document management.

3. **Dependence on Foreign Infrastructure:** Heavy reliance on foreign cloud providers (such as AWS, Azure, and Google Cloud) can expose countries and organisations to decisions influenced by foreign laws and geopolitical developments, as illustrated by concerns arising from the Nayara Energy episode.

4. **Challenge of Digital Tenancy:** India controls applications such as UPI and ONDC, but much of the infrastructure supporting digital businesses remains dependent on foreign cloud platforms.

5. **Rapid Expansion of AI Use:** AI is increasingly being adopted in welfare delivery, administration, policing, defence, and enterprise operations.

6. **Strengthening Data Governance:** The Digital Personal Data Protection (DPDP) Act has increased the emphasis on governance and protection of personal data.

7. **Growing Regulatory Focus:** Regulators such as RBI, IRDAI, SEBI, and MeitY are strengthening localisation and compliance requirements across sectors.

8. **Need for Operational Sovereignty:** Data localisation alone is insufficient if cloud infrastructure remains under foreign operational control.

9. **Need for Domestic Cloud Capacity:** Initiatives such as MeghRaj and domestic data-centre investments can provide sovereign alternatives for critical workloads.

10. **Need for Indian AI Models:** AI systems for agriculture, health, education, and governance can reduce dependence on foreign AI platforms while addressing local needs.

11. **Balancing Innovation and Sovereignty:** India needs to remain integrated with global technological developments while protecting strategic digital interests.

Global Trends in Digital Sovereignty

1. **United States' Model:** The United States benefits from technological leadership, global platform dominance, and legal mechanisms that extend influence over digital ecosystems.

2. **China's Model:** China has built domestic digital ecosystems supported by localisation policies, regulation, and national technology champions.

3. **North Korea's Model:** North Korea exercises sovereignty through strict control and limited integration with the global digital ecosystem.

4. **Europe's Regulatory Approach:** Europe promotes sovereignty through regulatory frameworks such as GDPR, the Data Governance Act, and other digital regulations.

5. **Middle Eastern Transition:** Several Middle Eastern countries are moving towards sovereign digital architectures and greater control over critical digital infrastructure.

6. **Brazil's Emerging Approach:** Brazil is strengthening digital sovereignty through competition reforms, platform regulation, and measures aimed at protecting users online.

7. **Reality of Digital Interdependence:** Most countries depend on global cloud services, cross-border commerce, digital platforms, and supply chains, limiting the possibility of complete digital autonomy.

Way Forward

1. **Strengthen Operational Sovereignty:** Countries should ensure that critical infrastructure can be audited, governed, and protected under domestic authority.

2. **Build Resilient Infrastructure:** Diversified connectivity, trusted vendors, and redundancy can reduce vulnerability to external disruptions.

3. **Protect Critical National Data:** Health, identity, election, and national security data require stronger safeguards and governance frameworks.

4. **Invest in the Knowledge Layer:** Language resources, public-interest datasets, compute partnerships, and local AI development require sustained support.

5. **Strengthen Platform Regulation:** Existing legal frameworks should be applied effectively to digital platforms, content, commerce, and liabilities.

6. **Empower Citizens and Communities:** People should have greater awareness and control over how their data and digital knowledge are used.

7. **Promote Regional and Global South Cooperation:** Digital partnerships can help countries strengthen bargaining power and develop alternative digital ecosystems.

8. **Pursue Sovereignty Without Isolation:** The objective should be greater resilience and control while remaining connected to global innovation and digital networks.

Conclusion

Digital sovereignty increasingly depends on control over infrastructure, services, data, and knowledge assets. While India has built a world-class Digital Public Infrastructure ecosystem, dependence on foreign cloud platforms, AI systems, and technology ecosystems remains a challenge. The objective is not digital isolation but practical sovereignty through stronger domestic capabilities, resilient infrastructure, and balanced global engagement.

Question for practice:

Examine the significance of cloud sovereignty in the digital age and discuss the challenges and opportunities it presents for India's quest for digital sovereignty.
Source: Indian Express

Orbital Rivalry — The Challenge of China's Space Power

UPSC Syllabus: Gs Paper 3- Science and technology
Introduction

Outer space has become a major arena of economic, technological, and military competition. The rapid growth of satellites and counter-space technologies has increased concerns about future conflicts in space. China has steadily expanded its space and counter-space capabilities to secure strategic advantages. This has created new security challenges for India, whose military, communication, navigation, and surveillance systems increasingly depend on space-based assets.

China's Expanding Space Ambitions

1. **Shift from Peaceful Use to Military Preparation:** China officially supports the peaceful use of space, but its activities indicate growing preparation for potential orbital conflict. Its programmes increasingly combine civilian, economic, and military objectives.

2. **Demonstration of Offensive Space Technologies:** China destroyed one of its own satellites in **2007**, tested a satellite-killing vehicle in **2015**, moved a defunct satellite in **2022**, and demonstrated an orbital dog-fight in **2024**. These developments show sustained investment in offensive space capabilities.

3. **Competition in the Global Space Race:** China seeks to remain competitive both technologically and numerically. It currently operates around **1,900 satellites**, although the United States still maintains a much larger presence in orbit.

4. **Recognition of Space as Strategic Infrastructure:** China views space assets as essential for communications, navigation, financial systems, power networks, military command-and-control, and ISR functions. Disrupting these systems can create major strategic advantages.

5. **Long-Term Space Development Goals:** China plans to land on the Moon by **2036**, launch a nuclear-powered shuttle by **2040**, and establish a space-based solar power system by **2050**. These goals reflect its long-term vision for space leadership.

6. **Growing Commercial Space Ecosystem:** Chinese firms such as LandSpace, iSpace and OneSpace are emerging as major players in the commercial space sector and are competing with global rivals. Commercial expansion supports China's broader strategic ambitions in space.

7. **Interest in Space Resources:** China is exploring lunar and asteroid mining for energy and critical minerals. Control over future space resources could strengthen its economic and technological position.

8. **Drive for Space Superiority:** China seeks to protect its own military and economic systems while gaining superiority over competitors. Its planned deployment of more than **36,000 low-earth orbit satellites by 2030** reflects this objective.

China's Evolving Counter-Space Capabilities

1. **Kinetic Anti-Satellite Weapons:** Systems such as the **Dong Neng-3** and **SC-19** missiles can physically destroy satellites. These capabilities allow direct attacks on orbital assets.

2. **Laser-Based Disruption Systems:** China is developing lasers capable of dazzling or blinding satellites. Such systems can interfere with navigation, surveillance, and communications without destroying satellites.

3. **Co-Orbital Satellite Operations:** Satellites from the **SJ** and **TJS** series are designed to approach, interfere with, or dislodge other satellites. These systems blur the line between normal operations and hostile actions.

4. **Electronic Warfare and Jamming:** China has deployed jammers against space-based systems, including deployments near the **Arunachal Pradesh border** during the **2020 India-China standoff**. Jamming can disrupt satellite services without creating debris.

5. **Cyber-Based Counter-Space Options:** Cyberattacks can target satellite ground stations and communication terminals. Such attacks can temporarily disable space services during military operations.

6. **Capability to Shape Early Conflict:** These systems could help the People's Liberation Army (PLA) disrupt Intelligence, Surveillance, and Reconnaissance (ISR), GPS, and communication networks during the first **24–48 hours** of a conflict. This may create operational advantages before large-scale military action begins.

7. **Expansion of Satellite Constellations:** China is rapidly increasing the size of its satellite fleet. Larger constellations improve resilience and reduce vulnerability to attacks on individual satellites.

Strategic Implications for India

1. **Capability Asymmetry with China:** India operates around **60 satellites**, while China possesses more than **400 military satellites alone**. This creates a major gap in redundancy and resilience.
2. **Greater Vulnerability to Satellite Losses:** The loss of even **five to six satellites** could significantly affect Indian capabilities. China can absorb similar losses more easily due to its larger space infrastructure.
3. **Threat to Surveillance Assets:** Chinese attacks on the **CARTOSAT** and **RISAT** series could disrupt tactical imagery for hours or even days. This would affect battlefield awareness.
4. **Risk of Temporary Blind Spots:** Laser attacks on satellites passing over the **Line of Actual Control** could create temporary surveillance gaps. Such actions can occur without physically destroying satellites.
5. **Potential Disruption of Navigation Systems:** Chinese jammers could interfere with India's **NavIC** network. This would affect navigation and military operations.
6. **Limited Indian Counter-Space Options:** India has demonstrated anti-satellite capability through **Mission Shakti**, but its overall counter-space programme remains at an early stage. Non-kinetic capabilities remain limited.
7. **Lack of Co-Orbital Capabilities:** India currently lacks co-orbital systems capable of countering satellites such as the SJ and TJS series. This restricts response options during a crisis.
8. **Risk of Wider Escalation:** Space competition can spill into land, maritime, and regional theatres. Attacks on space assets may trigger broader military responses beyond outer space.

Safeguarding India's Space Interests

1. **Expand Space Industrial Capacity:** India needs to increase satellite production and launch capacity beyond ISRO. Higher capacity will improve redundancy and resilience.
2. **Build Smaller Satellite Constellations:** Large programmes such as **GSAT** should be distributed across smaller constellations. Smaller networks are more survivable during attacks.
3. **Strengthen Ground Infrastructure Protection:** Ground stations and supporting facilities require stronger protection against kinetic and cyber threats. Their security is essential for uninterrupted operations.
4. **Improve Data-Sharing Partnerships:** Cooperation with strategic partners can help restore services quickly after satellite losses. Commercial and partner networks can provide backup support.

5. **Increase Surveillance and Reconnaissance Assets:** India is implementing the third phase of the **Space Based Surveillance programme**, which aims to deploy 52 satellites over the next ten years for surveillance and reconnaissance. This can strengthen monitoring capabilities.

6. **Develop Advanced Counter-Space Technologies:** India is working on directed energy weapons, lasers, electromagnetic pulse systems, and co-orbital technologies. These capabilities can expand future response options.

7. **Define Clear Escalation Thresholds:** India should clearly communicate its red lines and proportionate response options. This can strengthen deterrence and reduce miscalculation.

Conclusion

China's growing counter-space capabilities are steadily changing the strategic balance in outer space. Although India has strengthened its position through Mission Shakti and expanding space programmes, significant capability gaps remain. India's relatively limited satellite redundancy increases its vulnerability during a crisis. Expanding satellite networks, strengthening ground infrastructure, enhancing partnerships, and clearly defining deterrence thresholds will be essential to safeguard India's interests in an increasingly contested orbital environment.

Question for practice:

Evaluate the strategic implications of China's expanding space and counter-space capabilities for India, and examine the measures required to safeguard India's interests in outer space.
Source: The Hindu

IMEC is Caught Between Commerce and Geopolitics

UPSC Syllabus: Gs Paper 2 - International Relations
Introduction
The ongoing conflict in Iran has highlighted the growing importance of secure and resilient trade corridors. It has exposed how wars and strategic choke points can disrupt global trade, energy supplies and connectivity networks. In this context, the **India–Middle East–Europe Economic Corridor (IMEC)** has gained greater strategic relevance as an alternative route linking India and Europe. However, the same geopolitical tensions that underline its importance are also creating significant challenges for its implementation.

Iran Conflict and Changing Geopolitical Realities

1. **Limits of Military Superiority:** Iran has endured the military campaign despite facing the combined military and technological strength of Israel and the United States. The conflict has shown that superior military capability alone does not guarantee victory.

2. **Heavy American Military Losses:** A U.S. Congressional Research Service report noted that **42 U.S. aircraft**, including F-35 fighters, have been lost or damaged during the conflict. This has challenged assumptions about modern military dominance.

3. **Declining Missile Defence Capacity:** More than half of the inventories of **Patriot, Tomahawk and THAAD missiles** have reportedly been expended. This has weakened the ability to intercept Iranian missiles and drones.

4. **Large-Scale Retaliatory Capability:** Iran reportedly struck more than **240 American targets** during the conflict. This demonstrated its ability to impose significant costs despite conventional disadvantages.

5. **Fragile Ceasefire Without Resolution:** Although a ceasefire is holding, there is no immediate solution to achieve the political and military objectives pursued at the start of the war. The conflict remains unresolved.

6. **Strategic Importance of Choke Points:** The conflict showed how control over critical routes such as the **Strait of Hormuz** can disrupt global trade and energy supplies. This has increased attention on alternative connectivity corridors.

Growing Need for Alternative Connectivity Corridors

1. **Importance of Strategic Choke Points:** The blockade of the **Strait of Hormuz** showed how a single maritime passage can affect the global economy. Control over key routes remains a major strategic factor.

2. **Impact on Global Energy Supplies:** Nearly **20 million barrels of crude oil**, around one-third of global supplies, pass through the Strait of Hormuz every day. Disruptions immediately affect international markets.

3. **India's Energy Vulnerability:** India imports nearly **88% of its crude oil requirements**, amounting to about **1.8 billion barrels annually**. This makes it highly sensitive to disruptions in energy routes.

4. **Need to Avoid Conflict Zones:** Future trade corridors must reduce exposure to regions affected by wars and instability. This has become a major strategic requirement.

5. **Need to Bypass Choke Points:** Connectivity projects are increasingly being designed to avoid vulnerable maritime bottlenecks. Reducing dependence on a few routes can improve resilience.

6. **Existing Connectivity Responses:** Projects such as **International North-South Transport Corridor (INSTC)** and **Belt and Road Initiative (BRI)** were designed to reduce reliance on traditional choke points. They represent earlier efforts to build alternative trade networks.

India–Middle East–Europe Economic Corridor (IMEC): Vision and Strategic Importance

1. **Launch of IMEC:** IMEC was announced during the **G-20 Summit in New Delhi in September 2023**. It aims to strengthen connectivity between India, West Asia and Europe.

2. **Alternative to the Suez Route:** The corridor seeks to connect India and Europe while bypassing the traditional dependence on the **Suez Canal**. This can diversify trade routes.

3. **Multimodal Infrastructure Network:** IMEC combines railways, ports, highways, energy networks and digital infrastructure. The objective is to improve trade, investment and connectivity.

4. **Broader Economic Corridor:** The project goes beyond transport infrastructure. It includes pipelines, undersea data links, green hydrogen corridors and energy transmission networks.

5. **Eastern Connectivity Segment:** The eastern section links India with West Asia through sea links to the **UAE**. This forms the entry point of the corridor.

6. **Central and Western Segments:** The corridor passes through the UAE, Saudi Arabia, Jordan and Israel before reaching **Haifa**, and then connects to European ports through maritime routes.

Challenges Facing IMEC

1. **Impact of the Gaza Conflict:** The war in Gaza broke out shortly after IMEC was announced. This pushed the project into the background and affected key planned routes.

2. **Renewed Disruption from the Iran Conflict:** Efforts to revive IMEC after the 2025 Iran-Israel conflict faced setbacks due to the continuing war involving Iran. Execution has again slowed.

3. **Vulnerability of UAE Ports:** Key ports such as **Jebel Ali and Fujairah** have faced repeated targeting. This has exposed weaknesses in critical corridor infrastructure.

4. **Risks from the Strait of Hormuz:** Disruptions in the Strait of Hormuz have highlighted the geographical vulnerability of ports linked to the corridor. Trade flows remain exposed to regional tensions.

5. **Saudi Arabia-UAE Differences:** Diverging positions adopted by Saudi Arabia and the UAE during the conflict have created new uncertainties. IMEC depends on close coordination between both countries.

6. **Growing Strategic Divergence:** The UAE's withdrawal from **OPEC** and its increasing strategic coordination with Israel may widen differences with Saudi Arabia. Such developments can affect regional stability and corridor cooperation.

Way Forward

1. **Develop a Flexible IMEC Framework:** IMEC should evolve into a broader and adaptable framework. This would allow route adjustments during periods of conflict.

2. **Use Omani Ports as Alternatives:** Ports such as **Salalah, Duqm and Muscat** can serve as eastern entry points. Their location away from the Strait of Hormuz reduces risk.

3. **Create an Egyptian Western Spur:** Until Haifa becomes secure, a route through Egypt to Mediterranean ports can provide an alternative western connection. This can keep the corridor operational.

4. **Utilise Egypt's Logistics Ecosystem:** Egypt already has the **Suez Canal Economic Zone, six operational ports and four industrial zones**. These assets can support corridor activities.

5. **India's Diplomatic Role:** India enjoys trust and close relations with both Saudi Arabia and the UAE. It can help manage regional differences affecting IMEC.

6. **Support from European Partners:** Countries such as **Italy and France** can help advance the project. India and Italy have already reaffirmed cooperation on IMEC under their Special Strategic Partnership.

Conclusion

The Iran conflict has strengthened the case for connectivity corridors that can reduce dependence on conflict zones and strategic choke points. At the same time, it has revealed the vulnerabilities of projects that operate in politically unstable regions. **IMEC remains an important initiative for trade, connectivity and economic integration, but its success will depend on flexible route planning, regional cooperation and effective management of geopolitical tensions in West Asia.**

Question for practice:

Discuss how the Iran conflict has highlighted both the strategic importance and the geopolitical challenges of the India–Middle East–Europe Economic Corridor (IMEC).
Source: The Hindu

Expanding supply is the only lasting solution

Source: The post **"Expanding supply is the only lasting solution"** has been created based on **"Beyond NEET paper leak: Expanding supply is the only lasting solution",** published in "Indian Express" on 02nd June 2026.

UPSC Syllabus: GS Paper-2- Governance

Context: The NEET-UG paper leak controversy has exposed deeper structural weaknesses in India's education system. The problem is not limited to examination malpractice but arises from the severe mismatch between the growing demand for quality education and the limited supply of educational opportunities. Therefore, expanding educational capacity through regulatory reforms is essential for ensuring both quality and equity.

Structural Problems in India's Education System

1. Limited Educational Capacity

a. India has created only about 1.3 lakh MBBS seats despite the huge demand for medical education.
b. The shortage of seats has intensified competition among students and increased pressure on entrance examinations.
c. The scarcity of opportunities has also created incentives for paper leaks and other unfair practices.

2. Growth of Coaching Culture

a. The limited availability of quality educational institutions has encouraged the growth of coaching factories across the country.
b. Students increasingly depend on expensive coaching centres to succeed in competitive examinations.

c. This situation gives an advantage to students from economically stronger families and urban areas.

3. Inequality of Opportunity

a. Educational opportunities are often determined by a child's family background and place of residence.
b. Students from disadvantaged regions face significant barriers in accessing quality schools and colleges.
c. As a result, social and economic inequalities are reproduced through the education system.

4. Poor Learning Outcomes and Employability

a. Many schools fail to provide basic skills such as reading, writing, arithmetic, and communication.
b. Weak foundational learning reduces employability and productivity among young people.
c. Consequently, many graduates struggle to find suitable employment despite possessing formal qualifications.

Why Expanding Supply is Necessary

1. Quantity and Quality Can Grow Together

a. The expansion of engineering education demonstrates that increased capacity can eventually improve quality through competition.
b. Over time, better institutions emerge while weaker institutions either improve or exit the market.

2. Focus Should Be on Outcomes Rather Than Ownership

a. Policymakers should prioritize good educational institutions rather than debating whether they are public or private.
b. The quality of learning outcomes should be the primary criterion for evaluation.

3. Deregulation Can Encourage Education Entrepreneurship

a. Removing unnecessary NOC requirements can facilitate the establishment of new institutions.
b. Allowing all companies to establish schools and colleges can attract investment and innovation.
c. Eliminating excessive land requirements can reduce entry barriers for genuine education entrepreneurs.

4. Greater Competition Can Improve Inclusion and Excellence

a. Increased supply can reduce excessive competition for limited seats.
b. Competition among institutions can improve teaching quality, affordability, multilingual instruction, teacher training, and employability outcomes.

Way Forward

1. The government should substantially expand the number of medical, nursing, and higher education seats to match the aspirations of India's youth population.
2. Regulations should focus on learning outcomes, accreditation standards, and employability rather than excessive control over infrastructure and ownership structures.

3. Public and private sector participation should be encouraged to create a diverse and competitive education ecosystem.
4. Greater investment should be made in foundational literacy, numeracy, and teacher training to improve learning outcomes at the school level.
5. Examination systems should be strengthened through technological safeguards, transparency, and accountability mechanisms to prevent leaks and malpractice.
6. The principles of the National Education Policy (NEP) 2020 should be effectively implemented to promote flexibility, multidisciplinary learning, and skill development.

Conclusion: An educated citizen enjoys greater freedom, productivity, and social mobility. India must move beyond restrictive licensing and focus on expanding educational supply through regulatory reforms, competition, and entrepreneurship. Only a system that combines accessibility, quality, and employability can transform India's demographic advantage into sustainable economic growth.

Question: The recurring issues of coaching dependence, examination leaks, and limited access to quality higher education reflect deeper structural problems in India's education system. Discuss. Examine how expanding educational supply through regulatory reforms can improve equity, quality, and employability.
Source: Indian Express

NFHS-VI calls for a nutrition rethink

Source: The post **"NFHS-VI calls for a nutrition rethink"** has been created based on **"NFHS-VI calls for a nutrition rethink"**, published in "Indian Express" on 02nd June 2026.

UPSC Syllabus: GS Paper-2- Governance

Context: The findings of NFHS-VI highlight a significant shift in India's disease profile, with rising cases of obesity and diabetes coexisting with persistent undernutrition. This dual challenge reflects India's ongoing nutritional transition and calls for a comprehensive rethinking of nutrition policies.

Double Burden of Disease in India

1. Rising Lifestyle Diseases

a. NFHS-VI reveals that nearly one in six Indians has high blood sugar levels, indicating a growing prevalence of diabetes.
b. The survey also reports that close to 30 per cent of Indians are obese.
c. These conditions increase the risk of hypertension, cardiovascular diseases, kidney disorders, pancreatic diseases, and certain cancers.

2. Persistent Malnutrition

a. Despite improvements in nutrition indicators, more than 31 per cent of children remain underweight.
b. Over 80 per cent of children aged six to 23 months do not receive an adequate diet.
c. Childhood undernutrition continues to affect physical growth, cognitive development, and future productivity.

3. Emerging Childhood Obesity

a. Childhood obesity is increasing alongside undernutrition.
b. The Comprehensive Nutritional Survey found that nearly 35 per cent of children have adult-level triglyceride levels, increasing the risk of future metabolic and cardiovascular diseases.

Challenges in Addressing Nutritional Outcomes

1. Calorie-Centric Approach: Nutrition policies have often prioritised calorie intake over nutritional diversity. This has encouraged the consumption of energy-dense but nutrient-poor foods.

2. Changing Dietary Patterns: Dietary habits have shifted away from coarse grains, pulses, and fibre-rich foods towards refined carbohydrates and processed foods. Urbanisation and lifestyle changes have accelerated unhealthy eating practices.

3. Inadequate Dietary Diversity: Many children, especially from marginalised communities, lack access to balanced and diverse diets. Micronutrient deficiencies continue to remain a major concern.

4. Limited Behavioural Focus: Government nutrition programmes have largely focused on food supply and supplementation. Insufficient attention has been paid to nutrition awareness, family practices, and maternal influence on child feeding behaviour.

Way Forward

1. Nutrition programmes should shift from a calorie-focused approach to a nutrient-sensitive approach emphasising dietary diversity.
2. Greater promotion of millets, pulses, fruits, vegetables, and traditional healthy diets should be undertaken.
3. Behaviour change communication should target families, particularly mothers, to improve infant and child feeding practices.
4. School-based nutrition education and healthy lifestyle campaigns should be strengthened.
5. Community health workers should be trained to provide nutrition counselling and monitor growth outcomes.
6. NFHS-VI data should be used for targeted, region-specific interventions addressing local nutritional challenges.
7. Convergence among schemes such as **POSHAN Abhiyaan**, **Integrated Child Development Services**, and **Mid-Day Meal Scheme** should be strengthened.

Conclusion: India's nutritional challenge is no longer limited to undernutrition alone but includes a rapidly growing burden of obesity and metabolic diseases. A balanced strategy combining food security, nutritional diversity, behavioural change, and preventive healthcare is essential to achieve better health outcomes and realise the demographic dividend.

Question: India is facing a double burden of malnutrition and lifestyle diseases. In light of the findings of NFHS-VI, examine the challenges in addressing nutritional outcomes in India and suggest measures to ensure a healthier population.

Source: Indian Express

Remittances: A buffer, now under pressure

Source: The post **"Remittances: A buffer, now under pressure"** has been created based on **"Remittances: A buffer, now under pressure",** published in "Business Line" on 03rd June 2026.

UPSC Syllabus: GS-3-Indian Economy

Context: India is a structurally **Current Account Deficit (CAD)** economy, with a large merchandise trade deficit. Remittances have played a vital role in financing this deficit and strengthening the balance of payments. In 2024-25, remittances reached **$135 billion**, covering nearly **47.5% of India's trade deficit**, making them one of the most stable sources of foreign exchange earnings.

Importance of Remittances for India

1. Bridge the Trade Deficit: India's merchandise trade deficit increased from about **$6 billion in 2000-01** to **$284 billion in 2024-25**. Remittances offset a significant portion of this deficit.

2. Major Source of Foreign Exchange: Remittances exceeded **gross FDI inflows** in 2024-25. India has remained the **largest recipient of remittances globally since 2008**.

3. Stable External Financing Source: Remittances are less volatile than capital flows. They carry **no reversal risk,** unlike portfolio investments. They directly strengthen household balance sheets and support domestic consumption.

Changing Remittance Profile

1. Shift Towards Advanced Economies

a. The **U.S.A** has become the largest source of remittances.
b. **U.S.A** share increased from **22.9% to 27.7%** (2016-17 to 2023-24).
c. UAE share declined from **26.9% to 19.2%**.
d. More than half of remittances now originate from advanced economies such as the U.S.A, UK, Canada, Singapore, and Australia.

2. Increasing Dependence on Skilled Migrants: Remittances are increasingly driven by Indian professionals in OECD countries rather than semi-skilled Gulf workers.

Challenges and Risks to Remittance Flows

1. Restrictive US Policies

a. The **One Big Beautiful Bill Act (2025)** imposed a **1% levy** on certain remittance channels.
b. Introduction of a **$100,000 fee on certain new H-1B visas** increases migration costs.
c. Tightening of student visa norms may reduce future migration and remittance potential.

2. AI-Driven Labour Market Disruptions

a. Around **1,13,000 tech jobs** were eliminated globally in the first five months of 2026.
b. Nearly **47.9% of job cuts** were linked to AI and automation.
c. Sectors such as software engineering, customer service, marketing, and sales—major employers of Indian professionals—are highly vulnerable.

3. Structural Changes in Advanced Economies

a. California's Executive Order N-6-26 reflects growing concern over AI-led job displacement.
b. Future welfare measures may focus on citizens rather than migrant workers.
c. Demand for high-skilled migrant labour could decline over time.

4. Risks in Gulf Countries (GCC)

a. Geopolitical tensions such as Israel-Iran conflict and Red Sea disruptions may affect Gulf economies.
b. Lower crude oil prices could reduce government revenues.
c. Labour nationalisation policies such as **Saudization (Nitaqat)** and **Emiratization** may displace Indian workers.

Implications for India

1. Reduced remittance inflows may widen the **Current Account Deficit**.
2. Pressure may increase on the **Balance of Payments**.
3. The **rupee could face depreciation pressures**.
4. External sector vulnerability may rise due to dependence on a few advanced economies.

Way Forward

1. Diversify Migration Destinations

a. India should reduce excessive dependence on the U.S.A and GCC countries.
b. Greater labour mobility agreements should be pursued with emerging destinations in Europe, East Asia, and other developed economies.

2. Upgrade Workforce Skills

a. Focus on AI, data science, cybersecurity, robotics, semiconductor technology, and advanced digital skills.
b. Continuous reskilling and upskilling can help Indian professionals remain competitive in changing global labour markets.

3. Promote High-Skilled Migration

a. Encourage migration of professionals in healthcare, research, engineering, education, and advanced technology sectors where demand is likely to remain strong.
b. Strengthen international recognition of Indian qualifications and certifications.

4. Strengthen Bilateral Labour Agreements

a. Negotiate labour mobility and social security agreements with major destination countries.
b. Protect the interests of Indian migrant workers and ensure smoother migration pathways.

5. Enhance Domestic Employment Opportunities

a. Accelerate growth in manufacturing and services through initiatives such as Make in India and Digital India.

b. Reduce overdependence on overseas employment as a source of income and foreign exchange.

6. Expand Formal Remittance Channels

a. Promote low-cost and digital remittance systems.
b. Improve financial inclusion and reduce transaction costs for overseas Indians.

7. Build External Sector Resilience

a. Increase export competitiveness in goods and services.
b. Diversify sources of foreign exchange through exports, tourism, and stable long-term investments.
c. Maintain adequate foreign exchange reserves to absorb external shocks.

8. Strengthen Engagement with the Indian Diaspora

a. Deepen economic and institutional ties with the global Indian diaspora.
b. Encourage diaspora investments through special bonds, investment platforms, and business partnerships.

Conclusion: Remittances have long served as a reliable buffer for India's external sector. However, rising protectionism, AI-induced labour market changes, and geopolitical uncertainties pose significant challenges. India must diversify migration destinations, strengthen domestic employment generation, and enhance external sector resilience to mitigate future risks.

Question: Remittances have emerged as a crucial pillar of India's external sector stability. However, recent technological, economic, and geopolitical developments pose significant risks to future remittance flows. Discuss.

Source: Business Line

The need for strengthening India's EV supply chains

Source: The post **"The need for strengthening India's EV supply chains"** has been created based on **"The need for strengthening India's EV supply chains",** published in "Business Line" on 03rd June 2026.

UPSC Syllabus: GS-3 -Indian Economy

Context: India has entered a decisive phase of electric mobility growth, with around 2.5 million EVs sold in FY26. While policy interventions have successfully stimulated demand for EVs, ensuring secure and resilient supply chains has become essential for sustaining long-term growth and reducing external vulnerabilities.

Why Strengthening EV Supply Chains is Necessary

1. To Reduce Import Dependence

a. India is gradually reducing its dependence on imported fossil fuels.
b. However, the country is becoming increasingly dependent on imported lithium-ion batteries and battery components.

2. To Ensure Energy Security

a. Excessive reliance on foreign suppliers can expose India to supply disruptions and geopolitical risks.
b. A strong domestic supply chain can enhance India's energy security and strategic autonomy.

3. To Support Sustainable EV Growth

a. Rapid EV adoption requires a stable supply of batteries and critical components.
b. Domestic manufacturing can support uninterrupted growth of the EV sector.

4. To Enhance Industrial Competitiveness: A robust EV ecosystem can create jobs, promote innovation, and strengthen India's manufacturing capabilities.

Challenges in India's EV Supply Chains

1. Limited Domestic Manufacturing Capacity

a. Although 40 GWh of battery manufacturing capacity has been allocated under the ACC Battery PLI Scheme, only around 1 GWh has become operational so far.
b. As a result, domestic production remains insufficient to meet growing demand.

2. Heavy Dependence on Imported Batteries

a. A large share of batteries used in Indian EVs is imported from global manufacturers.
b. Chinese firms continue to play a significant role in supplying battery cells.

3. Concentrated Global Supply Chains

a. The global battery supply chain remains heavily influenced by China.
b. Trade restrictions, technology controls, and export-related measures can affect supply availability.

4. Geopolitical Uncertainties

a. Conflicts and instability in different regions can disrupt transportation routes and supply chains.
b. Such disruptions can increase production costs and delay deliveries.

5. Rising Battery Costs

a. Higher battery costs make EVs more expensive for consumers.
b. This can delay price parity between EVs and conventional internal combustion engine vehicles.

6. Dependence on a Single Technology

a. Excessive reliance on lithium-ion batteries increases technological and supply-chain risks.
b. Any disruption in lithium supply can affect the entire EV ecosystem.

Way Forward

1. India should diversify battery sourcing strategies.

a. The country should adopt a "China+1" approach by sourcing materials and components from multiple countries.
b. This will reduce dependence on any single supplier.

2. India should accelerate domestic battery manufacturing.

a. Faster implementation of the ACC Battery PLI Scheme can boost indigenous production.
b. Greater investment should be encouraged in battery cell manufacturing.

3. Manufacturers should improve battery efficiency.

a. Vehicle designs should focus on reducing battery size without compromising performance.
b. Efficient battery management systems can lower costs and improve affordability.

4. India should promote multiple battery chemistries.

a. Manufacturers should develop platforms that can support different battery technologies.
b. This will reduce dependence on a single battery chemistry.

5. India should invest in alternative technologies.

a. Research and development should be expanded in sodium-ion batteries and other emerging technologies.
b. These alternatives can reduce dependence on imported lithium.

6. India should build international partnerships.

a. Strategic partnerships should be developed for critical minerals, technology transfer, and supply chain resilience.
b. Collaboration with trusted countries can strengthen long-term supply security.

7. India should create a comprehensive EV supply-chain ecosystem.

a. The ecosystem should include mining, processing, manufacturing, recycling, research, and skill development.
b. Such integration will reduce vulnerabilities and strengthen self-reliance.

Conclusion: India's EV transition is entering a critical phase where supply-chain resilience is as important as demand creation. Building diversified, technology-neutral, and domestically anchored EV supply chains will be essential for ensuring energy security, industrial competitiveness, and the successful achievement of India's clean mobility goals.

Question: As India's electric vehicle (EV) adoption accelerates, strengthening domestic EV supply chains has become critical for ensuring energy security and industrial resilience. Discuss the challenges and suggest measures to build a resilient EV supply chain ecosystem in India.

Source: The Hindu

How Land Pooling Solves Acquisition Woes

UPSC Syllabus: Gs Paper 3- Land reforms in India.

Introduction

India's growing need for roads, housing, and urban infrastructure requires large-scale land assembly. However, conventional land acquisition has become increasingly difficult due to rising compensation costs, rehabilitation obligations, legal disputes, and delays in securing land. As these challenges have delayed many infrastructure projects and widened the gap between planning and implementation. In response, land pooling has emerged as an alternative approach. It helps secure land for development while allowing landowners to benefit from urban growth.

What is Land Pooling and Its Mechanism?

1. **Meaning of Land Pooling:** Land pooling, also known as land readjustment or land reconstitution, is a system in which landowners voluntarily pool their land for planned development and receive a part of the developed land in return.

2. **Voluntary Pooling of Land Parcels:** Individual landowners voluntarily contribute their land instead of the government acquiring it through compulsory methods.

3. **Transfer of Land for Planning:** The pooled land is brought under a planning authority so that fragmented parcels can be developed as a single unit.

4. **Use of Land for Infrastructure:** A portion of the pooled land is used for roads, parks, schools, public amenities, housing for economically weaker sections, and other civic infrastructure.

5. **Typical Land Contribution Pattern:** Under Town Planning (TP) schemes, landowners generally contribute about 25-40% of their land, while the remaining 60-75% is returned after development.

6. **Reconstitution of Land Parcels:** The remaining land is reorganised into properly shaped and planned plots that fit the development layout.

7. **Return of Developed Land:** Landowners receive serviced plots with better infrastructure and connectivity than their original holdings.

8. **Increase in Land Value:** The returned plots become more valuable because of the infrastructure and urban development created around them.

Why Land Acquisition Has Become Difficult?

1. **Rising Compensation Burden:** The **Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013** increased compensation and rehabilitation obligations, raising acquisition costs.

2. **Time-Consuming Process:** Land acquisition was already slow before 2013, and additional legal requirements have made the process even longer.

3. **Frequent Disputes and Opposition:** Landowners often challenge acquisition because of concerns regarding compensation, rehabilitation, and livelihood loss.

4. **Financial Constraints of States:** Many States struggle to arrange the large financial resources needed for compensation payments.

5. **Gap Between Plans and Implementation:** Urban projects are often delayed because governments cannot mobilise the required land.

6. **Complex Legal Environment:** Different infrastructure-related laws follow different compensation and rehabilitation provisions, creating administrative difficulties.

7. **Growth of Land Litigation:** A large number of land and property disputes increase uncertainty and delay project execution.

How Land Pooling Addresses Acquisition Challenges and Supports Urban Development

1. **Reduces Dependence on Compulsory Acquisition:** Land pooling reduces the need for compulsory acquisition because landowners voluntarily contribute land for development.

2. **Lowers Financial Burden on Governments:** Governments do not have to pay large compensation amounts for acquiring land, making infrastructure projects more financially viable.

3. **Reduces Acquisition Disputes:** Voluntary participation helps reduce conflicts related to compensation, rehabilitation, and land surrender.

4. **Speeds Up Land Availability:** Land can be mobilised more quickly as the process avoids many delays associated with conventional acquisition.

5. **Bridges the Planning-Implementation Gap:** Land pooling helps make land available for projects that often remain delayed because of acquisition difficulties.

6. **Supports Planned Urban Development:** The pooled land provides space for roads, parks, public amenities, housing, and other infrastructure while enabling more organised urban expansion.

7. **Encourages Equitable Sharing of Development Gains:** Landowners receive developed plots in return, allowing them to benefit from the increase in land value created by development.

8. **Reduces Displacement:** Landowners continue to retain land within the developed area, reducing the displacement commonly associated with acquisition.

9. **Promotes Financially Sustainable Development:** Development costs are recovered during implementation through value gains and incremental charges instead of relying entirely on public expenditure.

State Experiences and Innovations

1. Gujarat's Long Experience:

- **Long Experience:** Land pooling was introduced nearly **100 years ago** and was later formalised under the **Gujarat Town Planning and Urban Development Act, 1976**.
- **Large-Scale Implementation:** More than **1,000 sq. km** across Ahmedabad, Surat, Rajkot, Vadodara, and Gandhinagar has been planned through TP schemes.

2. Maharashtra's Revival of the TP Model:

- **Recent Adoption:** Pune and the Mumbai Metropolitan Region Development Authority have revived TP schemes to provide infrastructure and serviced land in peripheral urban areas.

3. Guwahati's Innovation:

- **Institutional and Land Record Challenges:** The legal framework lacked clarity on land appropriation and institutional roles. The absence of digitised land records also created implementation difficulties.
- **Administrative Adaptations:** Authorities used revenue records for plot allocation instead of lengthy surveys, reducing preparation time. Landowners were asked to contribute only **12-15%** of land, compared to the usual **35-45%**, improving acceptance.

4. Rajasthan's Adaptation:

- **Financial Adjustments:** Although land pooling was recognised in statutory provisions in 2016, implementation was limited by lack of experience.
- **Reducing Burden on Landowners:** The State is revising land-value calculations and absorbing part of the development cost to make the scheme more attractive and equitable.

Challenges in Expanding Land Pooling

1. **Need for Clear Legal Frameworks:** States require well-defined provisions regarding land contribution, implementation, and institutional responsibilities.
2. **Lack of Updated Institutional Systems:** Some States have not sufficiently updated laws and procedures required for effective implementation.
3. **Poor Land Records:** Manual records and differences between official records and ground conditions create implementation difficulties.
4. **Building Confidence Among Landowners:** Governments must clearly communicate benefits and secure the trust of landholders.

5. **Concerns About Voluntary Participation:** Development pressures can sometimes weaken the voluntary character of land pooling arrangements.

6. **Limited Support for Landless Groups:** Tenant farmers and agricultural labourers may receive inadequate support under compensation arrangements.

7. **Requirement of Fair Financial Models:** Land contribution mechanisms and cost-sharing arrangements must remain equitable for long-term acceptance.

Conclusion

Land pooling offers a practical alternative to conventional land acquisition. It reduces costs, disputes, and delays while helping governments secure land for urban development. It also allows landowners to share the benefits of development. However, its success depends on clear laws, reliable land records, stakeholder trust, fair financial arrangements, and local innovations. These factors will determine its long-term effectiveness across States.

Question for practice:

Examine how land pooling addresses the challenges of conventional land acquisition and supports urban infrastructure development in India.
Source: The Hindu

The Future of India's Chip Industry

UPSC Syllabus: Gs Paper 3- Science and Technology
Introduction
Semiconductors have become critical for economic growth, national security, digital infrastructure and advanced technologies. Recognising their strategic importance, NITI Aayog's Frontier Tech Hub recently released the report *Future of India's Semiconductor Industry*, which outlines a long-term roadmap for building a competitive domestic semiconductor ecosystem. While India has launched major initiatives such as the India Semiconductor Mission and several projects are under development, significant challenges remain in manufacturing capacity, technology development, talent creation and long-term investment.

Why Semiconductors Matter for India

1. **Foundation of Modern Technologies:** Semiconductors are used in almost all electronic products, including smartphones, consumer electronics, telecom equipment, defence systems and AI applications.

2. **National Security Requirement:** Many semiconductor components used in aerospace and defence systems are produced outside India. This creates strategic and security risks.

3. **Economic Resilience:** A strong domestic semiconductor ecosystem can reduce external dependence and improve India's economic resilience.

4. **Supply Chain Security:** Global semiconductor production is concentrated in a few regions. Any disruption can affect India's electronics manufacturing sector.

5. **Growing Domestic Demand:** Demand for chips is increasing due to the expansion of smartphones, electric vehicles, artificial intelligence, telecommunications equipment and data centres.

6. **Digital Infrastructure Support:** Semiconductors are essential for digital infrastructure and future technological competitiveness.

7. **Participation in Global Value Chains:** India has an opportunity to move from being a large semiconductor market to becoming an important part of the global semiconductor value chain.

Current Status of India's Semiconductor Ecosystem

1. **No Operational Fabrication Unit Yet:** India does not currently have a semiconductor fabrication plant. The first fab is expected to begin operations in Dholera, Gujarat by **2028**.

2. **Projects Under Development:** Around **ten semiconductor projects** are currently at different stages of development.

3. **Support Through India Semiconductor Mission:** The government has launched the **₹76,000 crore India Semiconductor Mission (ISM)** to support semiconductor manufacturing and ecosystem development.

4. **Subsidies for Fabrication Projects:** Semiconductor fabs have received capital support of more than **50%**, reducing the financial burden on investors.

5. **Support for Other Segments:** Component manufacturing projects receive production-linked and output-linked incentives.

6. **Focus on Packaging and Testing:** Several packaging and testing facilities have received support from the Union and State governments.

7. **Design Ecosystem Development:** ISM also supports access to industry-grade semiconductor design applications for students and academic institutions.

8. **Dependence on Imports Continues:** Even chips used in domestic electronics assembly operations are still largely sourced from foreign suppliers.

Challenges Before India's Chip Industry

1. **Limited Domestic Capacity:** India's semiconductor ecosystem is not yet capable of meeting domestic semiconductor demand.

2. **Long Gestation Period of Fabs:** Semiconductor fabrication facilities usually require **four to five years** before production starts.

3. **Dependence on Imported Equipment:** Fabs need more than **50 specialised pieces of equipment**, most of which are sourced from global suppliers.

4. **Delayed Commercialisation:** Yield optimisation and reliability testing take several quarters after production before chips reach the market.

5. **Talent Development Constraints:** Building a skilled workforce for semiconductor manufacturing requires significant time and effort.
6. **High Capital Requirement:** Semiconductor manufacturing is one of the most capital-intensive industries and requires long-term financial commitment.
7. **Technology and Research Gaps:** India still needs stronger capabilities in materials science, silicon design and advanced semiconductor engineering.
8. **Geopolitical Vulnerability:** Events such as disruptions in major semiconductor-producing regions can affect India's technology and electronics sectors.

Way Forward

A. Building Indigenous Capabilities

1. **Strengthen Design and Research Capabilities:** India needs stronger domestic capabilities in semiconductor design, research and intellectual property creation.
2. **Promote R&D Excellence:** Greater focus is required on materials science, silicon design and advanced semiconductor technologies.
3. **Use AI in Semiconductor Engineering:** Agentic AI can help improve semiconductor engineering and innovation capabilities.
4. **Move Towards Technology Creation:** India should move from a services-led design base to creating differentiated technologies, architectures and integration systems.
5. **Develop Skilled Talent:** A strong semiconductor workforce is needed across design, manufacturing, packaging and research activities.
6. **Create Advanced Design IP:** The roadmap aims to develop more than **100 advanced semiconductor design IPs**.

B. Strategic Investment Approach

1. **Ensure Long-Term Commitment:** The semiconductor sector requires mission-mode support and policy continuity over a decade or more.
2. **Increase Capital Investment:** The roadmap estimates public investment of **$45–60 billion over ten years**.
3. **Support Bankable Projects:** Public funding should focus on projects with lower risk and stronger investment viability.
4. **Prioritise Mature and Compound Nodes:** Investment should focus on mature and strategically important technologies rather than only frontier chips.

5. **Promote Capital Efficiency:** India should pursue selective depth and system-level differentiation instead of replicating the complete global manufacturing chain.

6. **Expand Packaging Ecosystem:** Packaging should be treated as a core production pillar because it is less complex and less expensive than fabrication.

7. **Promote Import Substitution:** High-volume domestic segments should gradually reduce dependence on imported semiconductor products.

C. Strengthening Global Partnerships

1. **Collaborate with Trusted Partners:** India should deepen cooperation with the **United States, Japan, European Union and South Korea**.

2. **Access Critical Technologies:** Partnerships can help secure access to specialised tools, equipment servicing and lifecycle support.

3. **Leverage India's Strengths:** India's market scale, talent base and packaging capabilities can support international collaboration.

4. **Become a Key Node in Global Value Chains:** Trusted partnerships can help India become an important semiconductor manufacturing and technology hub within global value chains.

Conclusion

India's semiconductor sector remains at an early stage, but growing policy support and a clear roadmap provide a strong foundation for future growth. Building indigenous capabilities, making strategic investments and strengthening trusted global partnerships will be crucial for success. With sustained commitment over the long term, India can improve economic resilience, reduce external dependence and emerge as an important player in the global semiconductor value chain.

Question for practice:

Discuss the importance of developing a domestic semiconductor industry in India, the challenges it faces, and the measures needed to build a competitive semiconductor ecosystem.
Source: The Hindu

India, Myanmar, and a shifting balance

Source: The post **"India, Myanmar, and a shifting balance"** has been created based on **"India, Myanmar, and a shifting balance",** published in "Indian express" on 04th June 2026.

UPSC Syllabus: GS-2-International Relations

Context: Myanmar is a crucial neighbour of India, sharing a **1,600-km border** and acting as a **land bridge for India's Act East Policy**. However, political instability following the 2021 military coup and the ongoing civil war have created complex security and diplomatic challenges for India.

Why Myanmar is Important for India

1. **Border Security:** India and Myanmar share a long and porous border. Militancy, ethnic linkages, and cross-border movements directly affect security in India's Northeastern states.
2. **Refugee Concerns:** The civil war has led to the inflow of refugees into states such as **Mizoram and Manipur**. This has created humanitarian and administrative challenges.
3. **Act East Policy:** Myanmar serves as India's gateway to Southeast Asia Connectivity and trade projects with ASEAN countries depend significantly on stability in Myanmar.
4. **Economic Cooperation:** Both countries are exploring cooperation in trade, healthcare, connectivity, and rare earth minerals.

Challenges Before India

1. **Political Instability in Myanmar:** The military coup of 2021 and the subsequent civil war have weakened governance and stability.
2. **Weak Control Over Border Areas:** Several regions bordering India are controlled by ethnic militias and non-state actors rather than the Myanmar military.
3. **Human Rights Concerns:m** The junta has been accused of atrocities against the Rohingya population and pro-democracy groups. Excessive engagement with the military regime can attract international criticism.
4. **Growing Chinese Influence:** China has expanded its influence by supporting Myanmar's military leadership. Beijing seeks to protect its strategic and economic interests, including oil and gas infrastructure. Increasing Chinese presence can undermine India's strategic interests in the neighbourhood.

India's Required Approach

1. **Balanced Engagement:** India should maintain engagement with the government in Naypyidaw while also interacting with non-state actors controlling border regions.
2. **Security Cooperation:** Strengthen coordination on border management, counter-insurgency, and intelligence sharing.
3. **Protect Strategic Interests:** Ensure continuity of connectivity and infrastructure projects under the Act East Policy.
4. **Counter Chinese Influence:** Deepen economic and developmental engagement to maintain strategic space in Myanmar.
5. **Flexible Neighbourhood Policy:** Adopt a pragmatic and adaptable approach until political stability returns to Myanmar.

Conclusion: India's Myanmar policy must balance strategic interests, border security, humanitarian concerns, and regional stability. Until peace and stability return to Myanmar, a flexible and pragmatic engagement with both Naypyidaw and non-state actors remains essential for safeguarding India's neighbourhood and Act East objectives.

Question: Myanmar's continuing instability poses significant security, strategic, and humanitarian challenges for India. Examine India's approach towards Myanmar and discuss why a flexible policy is necessary in the present context.

Source: Indian Express

Preserving the record: On the right to be forgotten

Source: The post **"Preserving the record: On the right to be forgotten"** has been created based on **"Preserving the record: On the right to be forgotten",** published in "The Hindu" on 04th June 2026.

UPSC Syllabus: GS-2-Polity & Governance

Context: The **right to be forgotten** seeks to provide individuals with greater control over their personal information in the digital age. However, its implementation must be balanced with the principles of **open justice, public access to court records, and judicial transparency**.

Importance of Open Justice

1. Promotes Public Understanding of Law: Open justice enables citizens to understand court proceedings and legal principles. It strengthens trust in the judicial system.

2. Creates a Historical Record: Public court records preserve the history of judicial administration. They ensure accountability and transparency in decision-making.

3. Facilitates Access to Justice: Publicly available judgments help litigants, lawyers, and researchers access legal information. They support informed legal decision-making.

Right to be Forgotten and Privacy Concerns

1. Protection of Personal Information: The right allows individuals to exercise control over their personal data. It seeks to limit unnecessary exposure of personal information online.

2. Impact of Digitisation: Digital court records can be accessed by anyone with an internet connection. Search engines and databases make information easily discoverable and permanently available.

3. Delhi High Court's Observation: The court recognised the need to balance privacy with open justice. It held that merely updating records may not adequately protect individuals from reputational harm.

Challenges in Implementing the Right to be Forgotten

1. Conflict Between Privacy and Public Interest: Privacy rights may clash with society's interest in accessing judicial records. Excessive restrictions can undermine transparency.

2. Incomplete Digital Records: Court databases often do not reflect the final outcome of cases. A person acquitted or discharged may still appear linked to allegations.

3. Persistence of Digital Information: Information remains accessible indefinitely through search engines. This can affect reputation even after legal exoneration.

4. Risk to Open Justice: Removal or concealment of records may reduce public scrutiny of judicial proceedings. It may weaken the principle of open courts.

Judicial Position

1. Justice K.S. Puttaswamy (2017)

a. The Supreme Court recognised privacy as a fundamental right.
b. The judgment discussed the possibility of a right to control personal information.

2. Indian Kanoon Case (2024)

a. The court ruled that judicial records must remain publicly accessible.
b. It held that records should not be obscured in a manner inconsistent with public access and open justice.

2. Delhi High Court Ruling (2026)

a. The court attempted to balance competing interests.
b. It held that updating official records would not sufficiently address concerns regarding discoverability of information.
c. It permitted partial concealment of certain portions without requiring the removal of case details.

Way Forward

1. Improve Accuracy of Judicial Records

a. Digital records should clearly reflect the final outcome of cases.
b. Acquittals, discharges, and case closures should be prominently displayed.

2. Regular Updating of Databases: Courts should ensure timely updating of records on judicial platforms.

3. Balance Privacy and Transparency

a. Sensitive personal information may be masked where necessary.
b. Core judicial records should remain accessible in the public interest.

4. Establish Uniform Guidelines: The judiciary should frame clear standards for handling requests related to the right to be forgotten.

Conclusion: The right to be forgotten is an important privacy safeguard in the digital era, but it cannot override the principle of open justice. The solution lies in **accurate, updated, and contextualised judicial records** that protect individual dignity while preserving transparency, accountability, and public confidence in the justice system.

Question: The right to be forgotten must be balanced against the principles of open justice and public interest. Examine the challenges involved and suggest measures to ensure both privacy protection and judicial transparency.

Source: The Hindu

Great Nicobar Task: Pursuing National Security with Ecological Responsibility

UPSC Syllabus: Gs Paper 3- Infrastructure And Environment

Introduction

The Great Nicobar Development Project has brought renewed attention to the challenge of balancing national security, economic development and environmental protection. Located near major Indo-Pacific sea routes and

maritime chokepoints, Great Nicobar holds significant strategic value for India. The proposed infrastructure development seeks to strengthen India's maritime presence, economic capabilities and regional influence while ensuring ecological safeguards and protection of tribal communities through responsible and scientific planning.

Growing Geopolitical and Maritime Importance of the Indo-Pacific

1. **Indian Ocean as a Strategic Arena:** Energy flows, container traffic, naval deployments, undersea cables and maritime surveillance have made the Indian Ocean a major arena of geopolitical competition.

2. **Location Near Global Trade Routes:** Great Nicobar lies close to major sea lanes linking Asia, Africa, Europe and the Middle East, through which large volumes of global trade move.

3. **Importance of Maritime Chokepoints:** Its proximity to the Malacca, Sunda and Lombok Straits provides India an important advantage near some of the world's busiest maritime passages.

4. **Strategic Value of the Six Degree Channel:** Galathea Bay is about 45 km from the Six Degree Channel, a critical route connecting the Malacca Strait with regions beyond the Indian Ocean.

5. **Heavy Maritime Traffic:** Around 1 lakh ships annually pass through the Malacca Strait–Six Degree Channel route, highlighting the importance of this maritime corridor.

6. **Emerging Regional Connectivity Projects:** Thailand's proposed 90 km multimodal land bridge may reshape regional trade patterns and increase the importance of the Andaman basin.

Great Nicobar as a Pillar of India's National Security

1. **Strategic Position in the Indo-Pacific:** The island's location near Southeast Asia and major sea routes makes it one of India's most important maritime assets.

2. **Strengthening India's Maritime Presence:** The proposed port, airport, township and power infrastructure can help India maintain a sustained presence at a critical maritime location.

3. **Enhancing Sovereignty Through Development:** Connected, inhabited and productive territories become more strategically useful and strengthen national sovereignty.

4. **Responding to Regional Competition:** As countries expand ports, logistics facilities and surveillance networks across the Indian Ocean Region, India also needs to consolidate its position.

5. **Support for Defence and Security:** The National Green Tribunal recognised the project's significance for defence, national security and economic development.

6. **Shifting from Continental to Maritime Thinking:** The project reflects a greater focus on India's maritime interests in a region where strategic competition is increasing.

7. **Need for Strategic Consolidation:** Growing maritime competition requires India to strengthen its presence through infrastructure, connectivity and operational capabilities.

Economic and Strategic Gains from the Development Project

1. **Reducing Dependence on Foreign Transshipment Hubs:** A transshipment port at Great Nicobar can provide India greater control over the movement of its cargo.
2. **Strengthening Supply Chains and Trade:** Improved maritime infrastructure can enhance supply-chain resilience and support India's trade interests.
3. **Gateway to Southeast Asia and the Indo-Pacific:** The island can serve as a link between India, Southeast Asia and wider Indo-Pacific economic networks.
4. **Investment and Employment Generation:** Infrastructure development can attract investment and create economic opportunities in the region.
5. **Converting Geography into Influence:** Strategic infrastructure can transform a favourable location into long-term economic and strategic strength.
6. **Building Long-Term Maritime Capacity:** The project aims to create an ecosystem that supports trade, logistics and national security together.

Balancing Strategic Development with Ecological Responsibility

1. **Ecological Sensitivity of the Island:** Great Nicobar is environmentally fragile and contains important biodiversity, including the endangered leatherback turtle.
2. **Environmental Footprint of the Project:** The project area is 166.10 sq km, which is only about 2% of the total area of the Andaman and Nicobar Islands. About 130.75 sq km of forest land, equivalent to nearly 1.82% of the islands' total forest area, has been proposed for diversion.
3. **Protection of Tribal Communities:** The Shompen and Nicobarese communities possess distinct cultural identities that require protection and sensitivity.
4. **Responsible Rehabilitation Measures:** Any rehabilitation process should ensure livelihood security, healthcare, education and cultural continuity.
5. **Scientific Environmental Safeguards:** Development should follow legal compliance, scientific monitoring, transparency and effective mitigation measures.
6. **Balancing Development with Conservation:** Environmental protection should remain a priority, but ecological concerns should not permanently prevent strategically important development projects.

Need for Strategic Vision and Balanced Decision-Making

1. **Avoiding Strategic** Neglect: Leaving a strategically important island underdeveloped could weaken India's long-term maritime position.
2. **Lessons from Earlier Policy Decisions:** Past decisions have shown that excessive caution in strategic projects can create security and surveillance gaps.
3. **Maritime Infrastructure as a Security Requirement:** Ports, logistics hubs, surveillance systems and island infrastructure have become essential elements of national power.
4. **Importance of Long-Term Planning:** Countries strengthen their position by anticipating future geopolitical changes rather than reacting to them later.
5. **Balancing Security and Environmental Concerns:** The project should be viewed as an effort to achieve national security and environmental responsibility together.
6. **Need for Strategic Maturity in Public Debate:** Debate on the project should focus on facts, planning and accountability rather than viewing development and conservation as mutually exclusive.

Conclusion

The Great Nicobar project offers India an opportunity to convert a strategic geographical advantage into long-term maritime, economic and security strength. Its success depends on balancing infrastructure development with ecological safeguards and protection of tribal communities. Through careful planning, scientific monitoring and responsible implementation, India can pursue national security while preserving environmental and social interests.

Question for practice:

Examine the strategic significance of the Great Nicobar Development Project for India's maritime security and economic interests, while highlighting the need to balance development with ecological and tribal concerns.
Source: Indian Express

Missing in India's Heat Action Plans

UPSC Syllabus: Gs Paper 3- Environment
Introduction

India is witnessing more frequent, intense and prolonged heatwaves, along with rising humidity and warmer nights. These conditions are increasing health risks, reducing labour productivity and putting pressure on agriculture and energy systems. India has developed Heat Action Plans featuring early warnings, public awareness campaigns and emergency response measures. However, several critical aspects of heat adaptation, including thermal comfort, worker protection, climate-responsive infrastructure and effective implementation, remain inadequately addressed. This limits the overall effectiveness of heat resilience efforts.

Growing Heatwave Challenge in India

1. **Extreme Temperatures Becoming Common:** India accounted for **97 of the world's 100 hottest cities** during one phase of the 2026 heatwave. Temperatures between **45°C and 48°C** are becoming increasingly common across many regions.

2. **Heatwaves Lasting Longer:** Heatwaves in India are becoming more persistent, with their duration increasing by 0.44 days per decade since 1961, indicating longer periods of extreme heat exposure.

3. **Rising Night-Time Temperatures:** Average night temperatures are increasing by about **0.21°C per decade**. This reduces the body's recovery time from daytime heat exposure.

4. **Humidity Increasing Heat Stress:** Average relative humidity increased from **67.1% during 2015–19** to **71.2% during 2020–24**. Higher humidity weakens the body's natural cooling process.

5. **Dangerous Wet-Bulb Conditions:** A wet-bulb temperature of **35°C** can become life-threatening even for healthy individuals. Some studies suggest harmful thresholds may be lower in certain locations.

6. **Heat Exposure Is Unequal:** Around **380 million workers** are employed in heat-exposed sectors such as agriculture and construction. Only **8% of Indian households** have air conditioning.

7. **Vulnerable Groups Face Greater Risk:** Elderly people, infants, outdoor workers and pregnant women face higher health risks. Extreme heat can also contribute to cardiovascular diseases, kidney failure, disturbed sleep and lower productivity.

Existing India's Heat Response Framework

1. **Early Warning and Alert System:** The IMD issues impact-based heatwave forecasts through a four-tier colour-coded alert system—Green, Yellow, Orange and Red—to guide administrative preparedness and emergency response.

2. **Decentralised Heat Action Plans:** State, district and city-level Heat Action Plans operate across **23 heat-prone states and more than 270 districts** to manage local heat risks.

3. **Inter-Agency Coordination Mechanism:** Heat Action Plans bring together health, labour, transport and municipal departments under a lead agency to ensure coordinated action during heat events.

4. **Public Awareness and Community Outreach:** Authorities conduct multilingual awareness campaigns and establish drinking water kiosks to help people reduce heat-related risks.

5. **Healthcare Preparedness Measures:** The National Action Plan on Heat-Related Illnesses supports training of medical personnel and strengthens healthcare facilities to manage heat-related cases.

6. **Labour Protection Measures:** Working hours for outdoor activities are adjusted or rescheduled to reduce heat exposure among construction and agricultural workers during peak temperature periods.

7. **Dedicated Funding for Heat Resilience:** States can utilise the National and State Disaster Mitigation Funds for proactive heatwave interventions, while the 16th Finance Commission has recommended recognising heatwaves as a notified national disaster.

8. **Long-Term Cooling and Urban Resilience Initiatives:** The India Cooling Action Plan promotes energy-efficient cooling and thermal comfort, while urban resilience measures encourage cool roofs, urban forests, reflective materials and heat-sensitive city planning

Gaps in Existing Heat Action Plans

1. **Focus Remains on Emergency Measures:** Most responses focus on alerts, hydration, cooling centres and behavioural advisories. Long-term adaptation measures receive comparatively less attention.

2. **Clothing and Thermal Comfort Are Largely Ignored:** Clothing directly affects the body's cooling process, yet it is largely absent from heat policies. School uniforms, workplace dress codes and polyester-based clothing often prioritise cost and durability over breathability and thermal comfort.

3. **Occupational Safety Standards Remain Incomplete:** Existing workplace guidelines mainly emphasise hydration and rest breaks. Fabric performance and thermal comfort are rarely included in worker protection measures.

4. **Informal Workers Remain Outside Protection Systems:** Nearly **90% of India's workforce** works in the informal sector. Many workers lack access to formal safeguards during extreme heat.

5. **Weak Implementation of Heat Action Plans:** Heat Action Plans often struggle with enforcement and monitoring. Many informal workers and daily-wage labourers remain outside the protection framework.

Emerging Challenges Beyond Traditional Heat Planning

1. **Electricity Demand Is Reaching Record Levels:** India's power demand crossed **270 GW** for the first time, surpassing the previous peak of **243 GW** recorded in 2025.

2. **Night-Time Power Outages Increase Risk:** Power cuts during hot nights prevent adequate cooling. This increases the health impacts of continuous day-night heat exposure.

3. **Dependence on Coal Continues:** Coal provides more than **75% of electricity during peak demand periods**. Higher cooling demand is increasing reliance on fossil fuels.

4. **Renewable Energy Faces Timing Constraints:** Solar power supplied nearly a quarter of electricity during peak demand. However, solar generation falls sharply after sunset when cooling demand remains high.

5. **Heat and Energy Create a Feedback Loop:** More heat increases cooling demand. Greater cooling demand raises fossil fuel use, which can contribute to further warming.

6. **Agriculture Faces Growing Losses:** Every **1°C increase in temperature** reduces average wheat yields by about **8%**. Some severely affected areas have experienced losses of **15–25%**.

7. **Economic Costs Are Rising Rapidly:** Heat exposure caused the loss of **247 billion potential labour hours** and around **$194 billion** in economic losses. Productivity losses could reach **4.5% of GDP by 2030**.

Building a Comprehensive Heat Adaptation Framework

1. **Integrating Clothing into Heat Adaptation:** Clothing should be treated as part of climate adaptation and public health planning. School uniforms, workplace dress codes and occupational safety standards can promote breathable fabrics and thermal comfort to reduce heat stress.

2. **Reforming Public Procurement Policies:** Procurement systems can balance durability, affordability and breathability. Thermal comfort should become an important criterion.

3. **Moving Beyond Cool Roofs:** Heat adaptation should include walls, windows, ventilation systems and sustainable building materials. Cooling strategies should cover the entire building design.

4. **Strengthening Heat Action Plan Implementation:** Heat Action Plans require stronger regulatory backing and dedicated financing. Better enforcement can improve their effectiveness.

5. **Protecting Informal Workers:** Measures such as protective equipment, seasonal restrictions on outdoor work, passive cooling solutions and direct cash transfers can reduce heat vulnerability.

6. **Promoting Innovation and Heat Finance:** Technology, climate finance and industrial policy can support heat-resilient solutions. This approach can help build a future "cool economy".

Conclusion

India's Heat Action Plans have strengthened preparedness through forecasting, awareness and emergency measures, but important adaptation gaps continue to persist. Greater attention to thermal comfort, informal worker protection, climate-responsive infrastructure, effective implementation and sustainable financing is essential. As extreme heat becomes a recurring reality, heat governance must evolve towards a more comprehensive and inclusive adaptation framework.

Question for practice:

Evaluate the effectiveness of India's Heat Action Plans in addressing the challenges posed by increasing heatwaves, and examine the key gaps that must be addressed to build a comprehensive heat adaptation framework.

Source: Indian Express

A framework for climate and development capital

Source: The post **"A framework for climate and development capital"** has been created based on **"A framework for climate and development capital",** published in "The Hindu" on 05th June 2026.

UPSC Syllabus: GS-3- Environment

Context: India has significant pools of capital committed to climate action, health, and poverty reduction. However, climate and development investments are often evaluated separately, leading to underinvestment in sectors where both objectives can be achieved simultaneously. A framework that values both climate and development returns can improve capital allocation.

Climate and Development Investments Generate Multiple Returns

1. Clean Energy Investments

a. Clean energy investments reduce carbon emissions and contribute to climate mitigation.
b. They also improve public health by reducing pollution-related diseases.
c. They enhance productivity by lowering the economic losses caused by extreme heat and pollution.
d. Therefore, a single investment generates carbon, health, and productivity returns simultaneously.

2. Employment and Poverty Reduction

a. India's renewable energy sector can generate around 3.4 million jobs by 2030.
b. These jobs provide livelihoods and reduce poverty.
c. Renewable energy investments therefore create both development and climate benefits.

3. Industrial Competitiveness

a. The Kolhapur foundry cluster supports about 27,700 jobs and contributes significantly to cast-iron exports.
b. Transitioning to renewable power can reduce energy costs and emissions.
c. It can improve competitiveness in markets affected by carbon pricing mechanisms such as the European Union's Carbon Border Adjustment Mechanism (CBAM).
d. Such investments support employment, exports, and climate goals together.

4. Sustainable Agriculture

a. A biochar programme in Maharashtra's cotton belt can increase farmers' incomes through better soil quality, improved yields, and reduced input costs.
b. The same intervention can remove significant quantities of carbon dioxide from the atmosphere.
c. Thus, agricultural investments can generate income gains and carbon benefits simultaneously.

Need for a Climate and Development Capital Framework

1. Current investment frameworks capture only financial or carbon returns while ignoring social and developmental benefits.
2. Investors often fail to recognise the full spectrum of returns generated by investments.
3. Measuring both financial and social outcomes can improve investment decisions.
4. Capital can then be directed towards projects with the greatest overall impact.

Role of Philanthropy and Technical Assistance

1. Philanthropic capital can support project preparation and risk assessment.

2. It can aggregate demand from rural water boards, urban local bodies, farmer cooperatives, and industrial clusters.
3. Such support makes projects investment-ready and attracts commercial capital.

Challenges in Climate and Development Capital

1. Siloed Investment Approach

a. Climate and development investments are assessed separately.
b. This prevents recognition of the multiple benefits generated by a single investment.

2. Inadequate Valuation of Co-benefits

a. Health improvements, livelihood gains, productivity enhancement, and poverty reduction are often not monetised.
b. As a result, investments appear less attractive than their actual social value.

3. Limited Commercial Capital Participation

a. Many projects remain at an early stage and are not investment-ready.
b. Commercial investors are reluctant to finance such projects due to perceived risks.

4. Fragmented Demand

a. Demand is dispersed across farmers, urban local bodies, water boards, cooperatives, and industrial clusters.
b. This fragmentation makes project aggregation difficult.

5. Lack of Appropriate Financial Instruments

a. Markets currently lack mechanisms that can simultaneously capture carbon and development returns.
b. Consequently, investors are unable to realise the full value of these investments.

Way Forward

1. Adopt a Climate and Development Capital Framework: Investment appraisal should include climate, health, livelihood, productivity, and poverty-reduction outcomes. This will enable more efficient capital allocation.

2. Develop Integrated Metrics: Create standardised frameworks to measure both financial and social returns. Such metrics can improve investor confidence and project evaluation.

3. Strengthen Blended Finance Mechanisms: Use philanthropic and public capital to de-risk projects. This can crowd in larger volumes of private investment.

4. Enhance Project Preparation and Technical Assistance: Provide support for project design, aggregation, and implementation. This will make projects commercially viable and investment-ready.

5. Promote Sectoral Integration: Prioritise investments in renewable energy, sustainable agriculture, infrastructure, and industrial decarbonisation. These sectors generate substantial climate and development co-benefits.

6. Leverage Carbon Markets and Green Finance: Expand carbon credit mechanisms and sustainable finance instruments. This can help monetise climate benefits while supporting development objectives.

Conclusion: A climate and development capital framework can bridge the gap between environmental sustainability and socio-economic development. By recognising and valuing multiple returns from a single investment, India can mobilise greater capital, accelerate the energy transition, improve livelihoods, strengthen economic resilience, and achieve its climate and Sustainable Development Goals simultaneously.

Question: Climate and development are often treated as separate challenges, even though the same investment can deliver both climate and development outcomes." Discuss. Suggest a framework for climate and development capital in the Indian context.

Source: The Hindu

How India's farm sector has evolved over the past decade

Source: The post **"How India's farm sector has evolved over the past decade"** has been created based on **"How India's farm sector has evolved over the past decade",** published in "The Hindu" on 05th June 2026.

UPSC Syllabus: GS-3 -Indian Economy
Context: Agriculture and allied sectors remain vital to the Indian economy, contributing nearly **18% of Gross Value Added (GVA)**. Over the past decade, the sector has witnessed significant growth through increased public investment, higher production, expanded farmer welfare programmes, improved credit access, technological integration, and the growth of allied activities.

Major Developments in India's Farm Sector

1. Increased Contribution and Public Investment

a. Agricultural GVA increased from **₹20.9 lakh crore (2014-15)** to **₹48.7 lakh crore (2023-24)**.
b. Budget allocation for the Department of Agriculture and Farmers Welfare increased from **₹27,663 crore (2013-14)** to **₹1.40 lakh crore (2026-27)**.
c. Higher public investment has strengthened agricultural infrastructure and support systems.

2. Record Growth in Agricultural Production

a. Foodgrain production increased from **265.05 million tonnes (2013-14)** to **357.73 million tonnes (2024-25)**.
b. Production growth has been witnessed in rice, wheat, maize, and oilseeds.
c. Improved irrigation, better inputs, and policy support contributed to higher productivity.

3. Expansion of Farmer Welfare Schemes

a. **PM-KISAN** has provided income support to over **9.44 crore farmer families**.

b. **PMFBY** has strengthened crop risk management through insurance coverage.
c. **PMKSY** has expanded irrigation coverage and water-use efficiency.
d. Schemes such as Soil Health Card, Agriculture Infrastructure Fund, e-NAM, KCC, and National Mission on Edible Oils have enhanced farm support.

4. Increased Institutional Credit

a. Agricultural credit increased from **₹7.3 lakh crore (2013-14)** to **₹28.67 lakh crore (2024-25)**.
b. Improved access to institutional finance has reduced dependence on informal **sources.**

5. Strengthening MSP Procurement

a. Procurement of wheat, paddy, pulses, oilseeds, and cotton increased substantially.
b. MSP procurement ensured price support and income stability for farmers.

6. Technological Transformation

a. Over **7.63 crore Farmer IDs** and **23.5 crore digitised crop plots** have been created under the Digital Agriculture Mission.
b. Initiatives such as **Namo Drone Didi**, **Kisan e-Mitra**, and the **National Pest Surveillance System** have promoted precision farming and efficient service delivery.

7. Growth of Allied Sectors

a. India remains the world's largest milk producer.
b. Dairy, fisheries, poultry, honey production, and ethanol manufacturing have expanded significantly.
c. Allied sectors have diversified rural incomes and reduced dependence on crop cultivation alone.

Challenges

1. Climate Change: Increasing frequency of droughts, floods, heatwaves, and erratic rainfall affects agricultural productivity.

2. Fragmented Landholdings: Small and marginal holdings limit mechanisation and economies of scale.

3. Water Stress: Overexploitation of groundwater and inefficient irrigation practices threaten sustainability.

4. Market Volatility: Farmers remain vulnerable to price fluctuations and demand uncertainties.

5. Regional Imbalances: Benefits of technology, irrigation, and procurement are unevenly distributed across states.

Way Forward

1. Promote Climate-Resilient Agriculture: Encourage drought-resistant crops, climate-smart farming, and weather-based advisory services.

2. Strengthen Water Management: Expand micro-irrigation and improve water-use efficiency.

3. Accelerate Digital Agriculture: Integrate AI, drones, remote sensing, and digital marketplaces for better decision-making.

4. Encourage Farmer Producer Organisations (FPOs): Improve aggregation, bargaining power, and market access for small farmers.

5. Promote Allied Sectors and Value Addition: Expand dairy, fisheries, food processing, and agri-exports to enhance rural incomes.

Conclusion: Indian agriculture has evolved from a crop-centric sector to a diversified ecosystem driven by investment, technology, infrastructure, and allied activities. Sustained reforms focusing on climate resilience, resource efficiency, market integration, and farmer welfare are essential to ensure sustainable and inclusive agricultural growth.

Question: Indian agriculture has undergone a significant transformation over the past decade through increased public investment, technological adoption, and diversification into allied sectors." Examine the major developments in the agricultural sector and discuss the challenges that continue to impede its sustainable growth.

Source: DD News

A National Environmental Survey Whose Time Came

UPSC Syllabus: Gs Paper 3- environment

Introduction

India's environmental challenges—ranging from pollution and biodiversity loss to climate-induced extreme weather—are becoming increasingly severe and visible. Although vast amounts of environmental information are generated by government agencies, research institutions, and other organisations, the absence of a unified assessment framework limits informed policymaking and accountability. As India seeks to balance economic growth with ecological sustainability, the proposal for an **Annual Environmental Survey of India (EnvSI)** has emerged as a timely mechanism for independent evaluation, evidence-based governance, and environmental stewardship.

Scale of India's Environmental Challenge

1. **Widespread Exposure to Extreme Events:** A survey of **10,751 Indians** found that most respondents had experienced at least one extreme event such as heat waves, droughts, water shortages, air pollution, or power outages.
2. **Rising Heat and Climate Stress: 71%** of respondents reported experiencing heat waves, showing the increasing impact of climate-related risks on daily life.
3. **Agricultural and Livelihood Risks: 60%** of respondents faced agricultural pests and diseases, indicating growing pressure on farming systems and rural livelihoods.
4. **Serious Water Quality Concerns:** More **than one-third of the 870 river-monitoring stations** recorded alarming levels of toxic heavy metals.
5. **Health Impact of Air Pollution:** Air pollution reduced average life expectancy in India by about **three years in 2022**, making it a major public health challenge.

6. **Increasing Frequency of Extreme Weather:** Some parts of the country experienced extreme weather conditions for nearly **88% of the year**, showing the scale of environmental disruption.

7. **Land Degradation and Desertification:** The Desertification and Land Degradation Atlas of India estimates that **29.7% of India's land** is degraded, affecting ecosystems and productive resources.

Gaps in Environmental Governance

1. **Limited Financial Priority:** The Ministry of Environment, Forest and Climate Change receives only **0.07% of the annual budget**, limiting its capacity to address environmental challenges.

2. **Institutional Capacity Constraints:** Environmental institutions remain understaffed and receive inadequate intellectual and administrative attention.

3. **Fragmented Administrative Structure:** Multiple agencies work in silos with overlapping jurisdictions, reducing coordination and effective environmental management.

4. **Incomplete Environmental Assessment:** Existing reporting systems do not provide a comprehensive understanding of the country's environmental condition.

5. **Limited Focus on Deforestation Impacts:** Reports discuss programmes such as **NAP** and **REDD+**, but provide little information on State-wise deforestation and its effects on biodiversity and livelihoods.

6. **Weak Accountability Mechanisms:** Information on fund utilisation and environmental compliance often receives limited scrutiny.

7. **Insufficient Use of Global Evidence:** Findings from global environmental assessments are often not adequately reflected in official reporting systems.

8. **Over-reliance on the Judiciary:** Due to executive failures, the judiciary—spearheaded by the **National Green Tribunal (NGT)**—has had to play an oversized, reactive role. While the NGT has passed landmark rulings, environmental governance risks becoming ad hoc rather than systematic.

9. **Marginalized Public Participation:** Public hearings mandated during the Environmental Impact Assessment (EIA) process are often viewed as superficial or developer-friendly. Tribal and marginalized communities frequently face displacement without adequate rehabilitation

Need for an Annual Environmental Survey of India (EnvSI)

1. **Bringing Dispersed Information Together:** Environmental data already exists across governments, think tanks, educational institutions, and private organisations, but remains scattered.

2. **Creating a Unified Assessment Platform:** EnvSI can serve as a single platform that aggregates evidence and presents a consolidated picture of the country's environmental conditions.

3. **Independent Environmental Auditing:** The survey can provide objective assessments of environmental performance through independent audits.

4. **Performance-Based Evaluation:** It can evaluate environmental outcomes and identify sectors or regions requiring urgent intervention.

5. **Presenting Environmental Reality Clearly:** EnvSI should offer an honest account of environmental conditions, including uncomfortable findings that may otherwise receive limited attention.

6. **Protecting What Still Remains:** Its purpose should be not only to document environmental losses but also to identify ecosystems, natural resources, and livelihoods that can still be protected.

7. **Building on Existing Information Systems:** Existing platforms such as ENVIS, which collect and disseminate environmental information through a nationwide network, can support broader environmental assessment efforts.

8. **Tracking Climate Trends:** It can monitor year-on-year changes in indicators such as annual mean temperatures and rainfall variability, supporting climate adaptation planning.

9. **Supporting Sustainable Resource Management:** The survey can provide essential information on natural capital, including soil, forest, water, and mineral resources, helping prevent over-exploitation.

10. **Strengthening Policy Accountability:** EnvSI can facilitate performance evaluations of national and State-level conservation programmes and improve environmental governance.

Potential Benefits of EnvSI

1. **Reducing Environmental Degradation:** Better information can support timely action to prevent further ecological damage.

2. **Improving Climate Resilience:** Coordinated assessments can strengthen responses to climate-driven disasters and improve resource utilisation.

3. **Supporting Climate Commitments:** Reliable environmental assessments can help India achieve climate targets more effectively.

4. **Enhancing Access to Climate Finance:** Improved credibility and stronger environmental reporting can help unlock climate finance opportunities.

5. **Balancing Development and Conservation:** Better evidence can help policymakers make informed choices between economic growth and environmental protection.

6. **Protecting Vulnerable Communities:** The survey can support the interests of tribal communities, traditional livelihood groups, and displaced populations.

7. **Strengthening Ecological Commons:** It can promote protection of ecosystems by recognising the interdependence between nature, species, and human societies.

Way Forward

1. **Provide a Statutory Mandate:** EnvSI should be established through a clear legal framework to ensure continuity and authority.
2. **Ensure Functional Autonomy:** The institution should operate independently and remain free from undue influence.
3. **Protect Expert Leadership:** Experts should receive protected tenure to maintain professional and evidence-based assessments.
4. **Integrate Multiple Data Sources:** Information from government agencies, researchers, private actors, and field evidence should be brought together.
5. **Use Rigorous Methodology:** Quantitative indicators should be combined with livelihood assessments and cross-verified datasets.
6. **Avoid Duplication of Surveys:** A unified survey can reduce redundancy and improve efficiency across existing data collection efforts.
7. **Follow the Economic Survey Model:** Like the Economic Survey, EnvSI should draw from multiple sources, rigorously assess evidence, and identify emerging challenges and reforms.

Conclusion

As environmental pressures intensify, India requires a credible and comprehensive mechanism to assess ecological realities and guide policy responses. A statutory and independent Annual Environmental Survey of India can strengthen accountability, improve climate resilience, support sustainable development, and ensure that environmental degradation is identified and addressed before irreversible losses occur.

Question for practice:

Discuss the need for an Annual Environmental Survey of India (EnvSI) in addressing environmental governance challenges and promoting sustainable development in the country.
Source: The Hindu

Funding India's Climate Future, the Trillion-Dollar Question

UPSC Syllabus: Gs Paper 3- Environment
Introduction
India's transition towards its climate goals requires an unprecedented mobilisation of finance. The country will need **₹162.5 trillion by 2030** to achieve its Nationally Determined Contributions and around **$10.1 trillion by 2070** to reach net-zero emissions. Although green finance instruments are already available, the scale of investment required far exceeds current flows. Bridging this gap will depend on stronger institutions, better regulations, and mechanisms that can mobilise both public and private capital effectively.

Magnitude of India's Climate Finance Challenge

1. **Huge Investment Requirement:** India needs **₹162.5 trillion by 2030** for its climate commitments and **$10.1 trillion by 2070** for achieving net-zero emissions.

2. **High-Cost Decarbonisation Sectors:** Steel, cement, power and road transport account for more than half of India's emissions. These sectors require **$467 billion** in additional investment between 2022 and 2030.

3. **Annual Financing Burden:** The required investment for these sectors is around **$54 billion annually**, equal to about **1.3% of GDP**.

4. **Weak Market Incentives:** Green steel and green cement are not yet commercially attractive. Strong policy support is needed to encourage private investment.

5. **Large Economy-Wide Requirement:** The RBI estimates that India needs additional green investment of at least **2.5% of GDP every year until 2030**.

6. **Insufficient Global Climate Finance:** Developing countries are expected to need **$5–6 trillion by 2030**. The developed world failed to meet the promised $100 billion annual climate finance target. The Baku NCQG commitment of $300 billion by 2035 is also considered inadequate.

7. **Need for Domestic Resource Mobilisation:** International finance alone cannot bridge India's climate-finance gap. Most of the required capital must come from domestic sources.

Existing Climate Finance Architecture in India

1. **Rapid Growth in Sustainable Debt:** By the end of 2024, India had issued **$55.9 billion** in green, social, sustainability and sustainability-linked debt, marking a **186% increase since 2021**.

2. **Dominance of Green Debt:** Green debt forms **83%** of total sustainable debt issuance. Most funds are directed towards clean energy and transport.

3. **Role of Sovereign Green Bonds:** Sovereign green bonds worth **₹477 billion** have created benchmarks and improved investor confidence in green investments.

4. **Availability of Diverse Instruments:** India already has green bonds, sovereign green bonds, sustainability-linked bonds, blended finance structures, transition finance instruments and infrastructure investment trusts.

5. **RBI's Climate Finance Framework:** The 2025 RBI framework requires banks to integrate climate risks into lending and risk-management decisions.

6. **Recognition under Priority Sector Lending:** Eligible green activities can qualify as **Priority Sector Lending (PSL)**, while sovereign green bond investments also receive regulatory recognition.

7. **Strong Regulatory Influence of PSL:** For every **₹10,000 crore** of loans, banks must ensure **₹4,000 crore** is directed towards PSL sectors, making it a powerful policy tool.

Key Gaps in Climate Finance Mobilisation

1. **Lack of Climate Finance Taxonomy:** India still lacks a clear legal definition of what qualifies as "green" finance.

2. **Challenges in Green Verification:** Without taxonomy standards, green bonds cannot be verified properly and greenwashing becomes difficult to control.
3. **Missing Financial Infrastructure:** The system lacks guarantee mechanisms, liquidity support and regulatory incentives that can lower the cost of green finance.
4. **Limited Climate Risk Pricing:** Existing regulations do not fully differentiate between climate-friendly and climate-intensive lending.
5. **Inadequate Climate Stress Testing:** Banks do not yet have a comprehensive framework to assess climate risks within their loan portfolios.
6. **Underuse of Blended Finance:** India has not fully utilised blended finance models that can reduce risks for private investors.
7. **State-Level Financing Constraints:** States carry major responsibility for climate adaptation but often lack borrowing capacity and access to international climate-finance channels.

Strengthening the Climate Finance Ecosystem

1. **Climate Finance Taxonomy:** The Climate Finance Taxonomy announced in the Union Budget 2024-25 can provide a clear definition of green activities and improve investor confidence.
2. **Green Steel Taxonomy:** The Green Steel Taxonomy can support standardised sustainable investments and strengthen financing for low-carbon industrial transition.
3. **Differentiated Capital Requirements:** Climate-based capital rules can make brown lending more capital-intensive while encouraging credit flow towards green sectors.
4. **Climate Stress Testing Framework:** A comprehensive stress-testing framework can help banks assess climate-related risks alongside traditional financial risks.
5. **Expanding Blended Finance:** Public or concessional funds can reduce investment risks and attract larger private investments into sustainability projects.
6. **Risk-Sharing Mechanisms:** A first-loss guarantee of **$100 million** can mobilise **$500 million to $1 billion** in private investment by absorbing risks that private investors find unacceptable.

Way Forward

1. **Finalise and Enact Climate Finance Taxonomy:** A clear and legally recognised taxonomy is essential for green finance verification, investor confidence and reducing greenwashing.
2. **Move from Enabling to Mandating Green Finance:** The RBI should strengthen green finance through differentiated capital requirements, mandatory climate stress testing and expanded PSL targets.

3. **Establish a State Climate Finance Facility:** A dedicated facility supported by the Union government, NABARD and international sources can improve access to climate finance for States and municipalities.

4. **Improve State-Level Climate Finance Access:** States need stronger borrowing capacity and institutional support to implement climate adaptation programmes effectively.

5. **Scale Up Sovereign Green Bond Issuance:** Greater sovereign green bond issuance can deepen domestic green finance markets and attract additional investment.

6. **Integrate Sovereign Green Bonds with SLR:** Embedding sovereign green bonds within the SLR framework can strengthen demand and support long-term market development.

Conclusion

India's climate-finance challenge is large but not insurmountable. Green finance instruments, regulatory initiatives and investment opportunities already exist. The key task is to build institutions and financing mechanisms that can deploy capital at scale. Faster progress on taxonomy, banking reforms, State-level financing and green debt markets will determine India's success in achieving its climate and development objectives.

Question for practice:

Examine the magnitude of India's climate finance challenge and discuss the measures required to mobilise capital for achieving its climate and net-zero goals.
Source: The Hindu

India needs innovative strategies to eliminate TB

Source: The post **"India needs innovative strategies to eliminate TB"** has been created based on **"India needs innovative strategies to eliminate TB",** published in "The Hindu" on 06th June 2026.

UPSC Syllabus: GS-2- Governance

Context: Tuberculosis (TB) remains one of the deadliest infectious diseases in the world and continues to pose a major public health challenge in India. Despite advances in treatment, India carries one of the highest TB burdens globally, making TB elimination a national priority.

Challenges in Eliminating TB in India

1. Absence of a highly effective vaccine

a. The century-old BCG vaccine primarily protects against severe childhood forms of TB and does not provide reliable protection against pulmonary TB in adults.
b. Therefore, a highly effective universal TB vaccine is still unavailable.

2. Large disease burden

a. India accounts for a significant share of the global TB burden.

b. The high incidence of TB creates pressure on the healthcare system and complicates elimination efforts.

3. Presence of latent TB infection

a. A large number of individuals carry latent TB infection without symptoms.
b. These individuals may later develop active TB, making detection and prevention difficult.

4. Extra-pulmonary TB burden

a. A substantial proportion of TB cases in India involve extra-pulmonary TB, which affects organs other than the lungs.
b. These cases are often harder to diagnose and manage.

5. Social and nutritional vulnerabilities: Undernutrition, poverty, overcrowding, and poor living conditions increase susceptibility to TB and negatively affect treatment outcomes.

6. Co-morbidities and vulnerable populations: Individuals with conditions such as HIV, diabetes, and weakened immunity face a greater risk of developing active TB and experiencing severe disease.

7. Delays in diagnosis and treatment: Many TB cases remain undetected or are diagnosed late, allowing continued transmission within communities.

Reasons for Innovative Strategies for India

1. Expansion of advanced diagnostics

a. India has made progress through the deployment of molecular diagnostic tools such as TruNat.
b. These technologies enable faster and more accurate detection of TB cases.

2. Adoption of preventive treatment: Preventive therapy for individuals with latent TB infection can significantly reduce progression to active disease and lower transmission rates.

3. Targeted vaccination approach

a. Evidence from the VPM1002 vaccine trial suggests that targeted vaccination of high-risk groups may offer meaningful protection.
b. Such groups include household contacts of TB patients, school-age children, adolescents, and vulnerable adults.

4. Community-based screening: Active case finding and screening among high-risk populations can help identify cases earlier and reduce disease spread.

5. Nutritional support interventions: Nutritional assistance can improve immunity, treatment adherence, and recovery among TB patients, particularly those suffering from undernutrition.

6. Integration with public health programmes: TB control efforts should be integrated with programmes addressing malnutrition, HIV, diabetes, and primary healthcare to achieve better outcomes.

7. Evidence-based policy making: India should adopt interventions that have demonstrated measurable public health benefits instead of waiting solely for future technological breakthroughs.

Role of New Vaccine Research

1. Potential of VPM1002

a. The VPM1002 vaccine has shown encouraging results in reducing pulmonary and extra-pulmonary TB in high-risk populations.
b. It may become an important tool in India's TB control strategy if further evidence supports its effectiveness.

2. Complementary rather than standalone solution

a. Even if new vaccines prove successful, vaccination alone cannot eliminate TB.
b. Vaccines must be combined with prevention, early diagnosis, treatment, and social support measures.

Way Forward

1. Shift from passive to active case finding: India should move beyond waiting for symptomatic patients to approach health facilities and instead undertake community-based screening, household contact tracing, and targeted surveillance in high-burden areas.

2. Scale up preventive treatment for latent TB: Preventive therapy should be expanded for household contacts of TB patients, healthcare workers, immunocompromised individuals, and other high-risk groups to reduce progression from latent infection to active disease.

3. Strengthen molecular diagnostic infrastructure: Rapid diagnostic tools such as TruNat and other molecular tests should be made universally accessible, particularly in rural and underserved areas, to ensure early and accurate detection.

4. Adopt targeted vaccination strategies: Evidence-based deployment of promising vaccines such as VPM1002 should be considered for vulnerable populations, including household contacts of TB patients, school-age children, adolescents, and individuals with comorbidities.

5. Integrate nutrition with TB care: Nutritional support should be treated as a core component of TB management because undernutrition remains a major risk factor for both disease progression and poor treatment outcomes.

6. Leverage digital technologies and data analytics: Digital platforms should be used for case notification, treatment monitoring, contact tracing, adherence support, and real-time surveillance to improve programme efficiency.

7. Address social determinants of TB: Efforts to improve housing conditions, sanitation, living standards, and access to healthcare should complement medical interventions, as TB is closely linked to poverty and social deprivation.

8. Enhance public-private collaboration: Since a large number of patients seek treatment in the private sector, stronger integration of private healthcare providers into the National TB Elimination Programme is necessary for comprehensive case detection and reporting.

9. Increase investment in research and innovation: Greater support should be provided for vaccine development, diagnostic technologies, drug research, and operational studies to identify context-specific solutions for India.

10. Adopt a multi-sectoral "Whole-of-Society" approach: The fight against TB should involve governments, healthcare institutions, educational establishments, civil society organizations, local communities, and international partners to ensure sustained progress toward elimination.

Conclusion: India's TB elimination goal cannot be achieved through a single intervention. A combination of early diagnosis, preventive treatment, targeted vaccination, nutritional support, and strong public health systems is essential. A comprehensive and evidence-based strategy offers the best pathway toward a TB-free India.

Question: India's goal of eliminating tuberculosis (TB) requires moving beyond the search for a perfect vaccine." Discuss the challenges in TB elimination and evaluate the role of innovative strategies in achieving India's TB-free target.

Source: The Hindu

Urban Fire Safety in India

Source: The post **"Urban Fire safety in India"** has been created based on **"South Delhi blaze: Why residential areas in India's cities are so vulnerable to fire",** published in "Indian Express" on 06th June 2026.

UPSC Syllabus: GS-2- Governance

Context: The recent fire incident in Malviya Nagar, South Delhi, which claimed 21 lives, has once again highlighted the serious gaps in urban fire safety in India. According to NCRB 2024 data, nearly 60% of all fire-related deaths in the country occurred in residential buildings, making them the most vulnerable category of structures.

Reasons behind residential areas being highly vulnerable to fires

1. Lack of fire safety infrastructure

a. Most residential buildings in India do not have essential fire safety mechanisms such as smoke alarms, fire suppression systems, and emergency evacuation plans.
b. As a result, residents often receive no early warning when a fire breaks out, reducing their chances of escape.

2. Violation of building by-laws and planning norms

a. Many residential buildings are modified or expanded without adhering to approved building regulations.
b. In several urban areas, residential properties are converted into commercial establishments such as guest houses and bed-and-breakfast facilities without adequate fire safety provisions.

3. Poor implementation of fire safety regulations

a. Although the National Building Code (NBC) 2016 contains detailed provisions regarding fire prevention, smoke management, periodic audits, and firefighting systems, its implementation remains weak.
b. Poor monitoring and enforcement allow unsafe structures to continue operating.

4. Electrical faults as a major trigger

a. Electrical short circuits are among the most common causes of urban fires.
b. The increasing use of electrical appliances, equipment, and wiring in densely populated urban areas raises the likelihood of electrical failures and fire accidents.

5. LPG-related accidents

a. Gas leaks from domestic LPG cylinders frequently cause residential fires.
b. Such accidents occur due to the use of non-standard equipment, poor maintenance of hosepipes and O-rings, leakage from stoves or cylinders, and improper handling practices by consumers.

6. High population density and congested settlements

a. Urban areas are characterized by dense populations and closely packed buildings.
b. Narrow roads and restricted access routes often prevent firefighting vehicles from reaching the site quickly, thereby worsening the impact of fire incidents.

7. Lack of public awareness and preparedness

a. A culture of fire preparedness is largely absent in residential communities.
b. Most residents are unaware of basic fire safety practices, emergency evacuation procedures, and the proper use of firefighting equipment.

8. Inadequate institutional capacity

a. Fire services are primarily the responsibility of state governments and urban local bodies.
b. However, many fire departments suffer from shortages of trained personnel, modern equipment, and financial resources, which limits their response capability.

Impact of urban fires

1. Loss of human lives: Urban fires often result in large-scale casualties. Many victims die due to smoke inhalation and oxygen depletion rather than direct burns.

2. Health hazards from toxic gases: The burning of materials releases toxic fumes that can cause severe respiratory problems, choking, and long-term health complications.

3. Explosions and secondary disasters: The heat generated during fires can cause gases, liquids, and metals to expand, leading to explosions, structural collapse, and further damage.

4. Economic and social losses: Fires destroy homes, property, and livelihoods, causing significant economic hardship for affected families and communities.

Measures to strengthen urban fire safety

1. Ensure strict enforcement of building regulations: Authorities must ensure strict compliance with the National Building Code and prevent unauthorized construction, conversion, and expansion of buildings.

2. Make fire safety systems mandatory: All residential buildings, especially multi-storey structures, should be equipped with smoke detectors, fire alarms, sprinkler systems, and firefighting equipment.

3. Conduct regular safety audits: Periodic inspections should be carried out to assess electrical systems, LPG installations, and overall fire safety compliance.

4. Strengthen fire services: State governments should modernize fire departments by providing advanced equipment, adequate manpower, and specialized training. The funds recommended by the Fifteenth Finance Commission should be effectively utilized for this purpose.

5. Improve urban planning: Urban planning should prioritize wider roads, better access routes, and adequate open spaces to facilitate firefighting and evacuation operations.

6. Promote public awareness: Regular fire drills, awareness campaigns, and community-based training programmes should be conducted to improve preparedness among residents.

7. Procure specialized equipment for high-rise buildings: As Indian cities continue to expand vertically, fire departments must acquire modern equipment capable of handling emergencies in high-rise structures.

8. Develop integrated city-level fire management plans: Cities should adopt comprehensive fire safety plans involving municipal authorities, fire departments, building owners, and local communities to ensure accountability and preparedness.

Conclusion: The predominance of residential buildings in fire-related fatalities reflects deep structural and governance challenges in India's urban areas. Strengthening regulatory enforcement, improving fire service capabilities, enhancing public awareness, and promoting safer urban planning are essential for reducing fire risks and building resilient cities.

Question: Residential buildings account for the majority of fire-related deaths in India. Examine the factors responsible for the high vulnerability of residential areas to fires in urban India. Suggest measures to strengthen urban fire safety.

Source: **Indian Express**

Internationalisation of Higher Education

UPSC Syllabus: Gs Paper 2- Issues relating to development and management of Social Sector/Services relating to Education,

Introduction

Internationalisation of higher education refers to the integration of global and intercultural dimensions into higher education. It promotes student and faculty mobility, international academic collaborations, foreign university campuses, and recognition of degrees and credits across countries. Under **NEP 2020**, India is actively promoting internationalisation. The aim is to improve educational quality, strengthen research and innovation, expand global partnerships, attract reputed foreign institutions, and position India as an emerging global hub for higher education.

Core Pillars of Internationalisation of Higher Education

1. **Student Mobility:** Students study across borders to gain international exposure, access diverse learning environments, and develop global competencies.
2. **Faculty Mobility:** Universities attract international scholars and promote faculty exchanges to enrich teaching, research, and classroom discussions.
3. **Joint and Dual Degree Programmes:** Institutions collaborate to offer programmes that provide degrees recognized by multiple universities across countries.
4. **Branch Campuses:** Leading Foreign Higher Educational Institutions establish campuses in host countries and provide international-quality education locally.
5. **Research and Academic Collaboration:** Universities undertake joint research, shared laboratories, collaborative projects, and joint doctoral programmes to enhance innovation.
6. **Degree and Credit Recognition:** Internationalisation promotes degree equivalence, credit transfer, and wider acceptance of academic qualifications across countries.

Significance of Internationalisation of Higher Education for India

1. **Improving Quality for Domestic Students:** Nearly 97% of Indian students study within India. Internationalisation helps them access globally relevant education without leaving the country.
2. **Enhancing research and innovation:** International collaborations improve research quality, innovation, global citations, and knowledge creation.
3. **Building a knowledge economy**: Global partnerships, advanced research, and international talent networks help India build a strong knowledge-based economy.
4. **Generating Economic Benefits:** Higher education can become an export sector by attracting international students and reducing outward education-related expenditure.
5. **Enhancing Soft Power and Diplomacy:** Educational cooperation strengthens India's cultural influence and diplomatic engagement, especially with developing countries and the Global South.
6. **Utilising Demographic Advantage:** India's young population can help meet global demand in areas such as AI, healthcare, climate science, and frontier technologies when trained to global standards.

India's Strategic Initiatives for Internationalisation of Higher Education

1. **National Education Policy (NEP) 2020:** NEP 2020 provides the overall framework for internationalisation through academic collaborations, student mobility, foreign university campuses, and globally relevant education within India.

2. **UGC Regulations 2023 for Foreign Universities:** The **UGC (Setting Up and Operation of Campuses of Foreign Higher Educational Institutions in India) Regulations, 2023** allow top-ranked foreign universities to establish campuses in India.

3. **Foreign University Campuses in India:** The approval of the University of Liverpool's Bengaluru campus and the presence of institutions such as the University of Southampton in Gurugram expand access to globally recognised higher education within India.

4. **Study in India (SII) Programme:** The Study in India Initiative promotes India as an affordable and high-quality higher education destination and aims to attract more international students.

5. **Twinning, Joint and Dual Degree Regulations:** UGC regulations enable Indian and foreign universities to offer twinning programmes, joint degrees, and dual degrees through academic partnerships and credit-sharing arrangements.

6. **Global Expansion of Indian Institutions:** Indian institutions are establishing overseas campuses, including **IIT Madras in Zanzibar, IIT Delhi in Abu Dhabi, and IIM Ahmedabad in Dubai**, strengthening India's global academic presence.

7. **Internationalisation at Home:** Higher education institutions are integrating global perspectives and Indian Knowledge Systems (IKS) into curricula so that students receive international exposure without studying abroad.

8. **National Credit Framework and Degree Recognition:** The National Credit Framework (NCrF) and efforts to simplify qualification equivalence support international recognition, mobility, and transfer of academic credits.

Major Challenges of Internationalisation of Higher Education

1. **Severe Student Mobility Imbalance:** India currently receives only one international student for every 28 Indian students studying abroad, reflecting weak inbound mobility.

2. **High overseas education expenditure:** Indian students' overseas education expenditure is projected to reach ₹6.2 lakh crore by 2025, creating significant capital outflow.

3. **Persistent Brain Drain:** Many highly skilled graduates settle abroad permanently, reducing the availability of talent within India.

4. **Infrastructure gaps:** Several institutions lack adequate infrastructure, support services, and internationally experienced faculty to attract foreign students.

5. **Institutional inequality:** Foreign collaborations may benefit elite institutions more than rural and resource-constrained universities, widening disparities.

6. **Regulatory Complexity:** Overlapping roles of the University Grants Commission (UGC), All India Council for Technical Education (AICTE), and National Assessment and Accreditation Council (NAAC) increase compliance requirements and slow international collaborations.

7. **Cultural homogenisation risks:** Excessive reliance on foreign models may weaken India's educational identity and indigenous knowledge traditions.

8. **Global policy and visa uncertainties:** Changing visa rules, geopolitical tensions, immigration restrictions, and policy shifts can affect international academic mobility and cooperation.

NITI Aayog's Roadmap for Internationalisation

1. **National Strategy for Internationalisation:** Create an inter-ministerial task force led by the Ministry of Education and develop dashboards to track student mobility, collaborations, and global engagement.

2. **Develop Global Higher Education Hubs:** Establish regional education and research hubs on the lines of the GIFT City model and align them with initiatives such as Digital India, Startup India, and Make in India.

3. **Simplify Regulation and Mobility:** Ease visa, FRRO, and documentation procedures to facilitate the movement of students, faculty, and researchers across borders.

4. **National Foreign Degree Equivalence Portal:** Create a dedicated portal for faster recognition and equivalence of foreign qualifications to improve academic mobility.

5. **Promote Foreign University Campuses in India:** Allow foreign institutions to establish onshore campuses through single-window clearances and introduce a "Campus within a Campus" model with a 10-year sunset clause.

6. **Strengthen Research Financing:** Establish the Bharat Vidya Kosh, a proposed USD 10 billion research impact fund, supported by the government and Indian diaspora to promote global research collaboration.

7. **Attract Global Talent through Scholarships:** Launch the Vishwa Bandhu Fellowship to attract world-class faculty members, researchers, and academic leaders to Indian institutions.

8. **Strengthen Global Branding and Outreach:** Revamp the Study in India initiative as a one-stop global platform and create the Bharat ki AAN (Alumni Ambassador Network) to leverage the Indian diaspora.

9. **Integrate Indian Knowledge Systems (IKS):** Combine Indian Knowledge Systems with global teaching and research practices to ensure internationalisation without losing India's intellectual traditions.

Conclusion

Internationalisation of higher education has become a central component of India's higher education reforms under **NEP 2020**. Initiatives such as foreign university campuses, global academic partnerships, student mobility, and research collaboration can strengthen India's position in the global knowledge ecosystem. Effective implementation of the **NITI Aayog roadmap**, supported by stronger institutions, simplified regulations, and greater global engagement, can help India emerge as a leading international education destination.

Question for practice:

Examine the significance of internationalisation of higher education for India and discuss the major initiatives, challenges, and policy measures needed to make India a global education hub.
Source: PIB

4 Years of Jan Samarth Portal

UPSC Syllabus: Gs Paper 2- Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes
Introduction

Launched on **6 June 2022**, the **Jan Samarth Portal** is India's first unified digital platform for credit-linked government schemes. It was introduced to simplify access to institutional finance by connecting beneficiaries directly with lending institutions through a technology-driven process. By integrating multiple schemes on a single platform, it aims to expand the reach of government-supported credit, improve financial inclusion, and make loan delivery more efficient, transparent, and accessible across sectors.

Jan Samarth Portal: Vision and Objectives

1. **Addressing Credit Access Barriers:** Many entrepreneurs, women-led enterprises, farmers, and young agri-business professionals faced difficulties in navigating multiple schemes and procedures. Jan Samarth was introduced to simplify access to financial assistance.

2. **Single-Window Credit Platform:** The portal acts as a unified platform where beneficiaries can access multiple government-supported credit schemes through a single digital interface.

3. **Expanding Scheme Outreach:** A key objective is to increase the reach of government-sponsored credit schemes among eligible citizens across sectors and regions.

4. **Simplifying Credit Delivery:** The portal aims to reduce procedural complexity and make the loan application process more efficient and user-friendly.

5. **Strengthening Financial Inclusion:** The platform seeks to bring more individuals and enterprises into the formal credit system through easier access to institutional finance.

6. **Connecting Lenders and Beneficiaries:** It directly links applicants with lending institutions, reducing the gap between credit seekers and credit providers.

Key Features of the Jan Samarth Portal

1. Unified Access to Government Schemes: The portal covers 16 credit-linked Central Government schemes that address different financial needs of citizens and enterprises.

- **Credit Guarantee Support:** Emergency Credit Line Guarantee Scheme 5.0 (ECLGS).
- **Warehouse Receipt Financing:** e-Kisan Upaj Nidhi (EKUN).
- **Housing Finance:** Home Loans for EWS, LIG and MIG households in urban areas.
- **Agricultural Credit:** Kisan Credit Card (KCC) and Kisan Credit Card Fisheries (KCCFIM).
- **Renewable Energy Finance:** Roof Top Solar Installation Financing (SOLAR).
- **Agri-Infrastructure Support:** Agri Clinics and Agri Business Centres (ACABC) and Agriculture Infrastructure Fund (AIF).
- **Business and Enterprise Loans:** Prime Minister's Employment Generation Programme (PMEGP), Weaver Mudra Scheme (WMS), Pradhan Mantri Mudra Yojana (PMMY), Pradhan Mantri Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi), National Action for Mechanized Sanitation Ecosystem (NAMASTE), Loan for Startups (START), and Credit Card for Micro Enterprises (CCME).
- **Livelihood Promotion:** DAY-NRLM livelihood loans.

2. Coverage Across Diverse Sectors: It supports credit needs related to agriculture, agri-infrastructure, housing, renewable energy, business activities, credit guarantees, and livelihood generation.

3. **Multi-Language Accessibility:** The portal is available in **8 languages—English, Hindi, Gujarati, Telugu, Tamil, Marathi, Bengali, and Kannada**, making it accessible to a wider population.

4. **Large Lending Institution Network:** Applicants can choose from 269 Member Lending Institutions, including public sector banks, private banks, NBFCs, regional rural banks, cooperative banks, and small finance banks.

5. **Continuous Digital Availability:** The portal remains available 24×7, allowing users to apply for loans at any time without location-based restrictions.

6. **Assisted Application Support:** Business correspondents and assisted partners can help applicants submit loan applications through the portal.

Technology-Driven Credit Delivery Ecosystem

1. **Automated Digital Application Process:** Applicants answer a few questions, after which the portal identifies suitable schemes, checks eligibility, auto-fills details, and generates in-principle approval through an automated business rule engine.

2. **End-to-End Online Processing:** Applications and supporting documents are digitally forwarded to the selected bank branch, while applicants receive updates at every stage without frequent branch visits.

3. Integration with Government Databases: Real-time verification is enabled through linkages with the **Local Government Directory (LGD), Unique Identification Authority of India (UIDAI), UDYAM,**

AgriStack, Department for Promotion of Industry and Internal Trade (DPIIT) Startup Portal, LOKoS, Central Board of Direct Taxes (CBDT), and Goods and Services Tax (GST) systems.

4. **Linkages with Financial and Regulatory Institutions:** The portal is connected with **National Securities Depository Limited (NSDL), National E-Governance Services Limited (NeSL), Credit Information Bureau (India) Limited (CIBIL), National Credit Guarantee Trustee Company (NCGTC), and Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)** to support credit assessment and guarantee coverage.

5. **Multiple Access Channels:** Users can access the portal through its website, Android and iOS mobile applications, while a separate mobile application provides real-time reporting facilities.

Achievements and Impact of Jan Samarth

1. Large-Scale Credit Facilitation: As of 1 June 2026, the portal processed 54.10 lakh applications , reflecting its growing role in digital credit delivery.

2. **Strong Approval Performance:** Banks granted digital approvals to 49.55 lakh beneficiaries involving ₹2,76,493.78 crore, indicating significant credit outreach.

3. **Strengthening Financial Inclusion:** By reducing procedural barriers, the portal has expanded access to institutional credit for entrepreneurs, farmers, women, small businesses, and livelihood seekers across the country.

4. **Supporting Business Expansion:** The portal has enabled small entrepreneurs to access timely financial support for business growth through simplified digital procedures.

5. **Promoting Rural Entrepreneurship:** Easy access to institutional finance has helped rural individuals establish and expand income-generating activities.

6. **Empowering Women Entrepreneurs:** Credit support through the platform has enabled women to start and sustain livelihood-based enterprises in different regions.

7. **Encouraging Agri-Business Development:** The portal has supported agri-entrepreneurs through schemes linked to agriculture and agri-business infrastructure.

Limitations of the Jan Samarth Portal

1. Rigid Automated Eligibility Assessment: The portal's eligibility engine follows predefined criteria. Applicants whose CIBIL score, banking history, or demographic details do not match scheme requirements may face rejection without clear identification of the failed parameter.

2. **Limited Scheme Coverage:** The platform currently focuses on 16 Central Government credit-linked schemes. Many state-level subsidy programmes, Direct Benefit Transfer (DBT) grants, and private-sector lending products remain outside its coverage.

3. **Dependence on Bank Branches:** Final loan disbursal remains dependent on the concerned bank branch even after digital approvals are generated through the portal.

4. **Physical Verification Requirements:** Applicants may still need to complete documentation or branch-level formalities, reducing complete end-to-end digital convenience.

5. **Challenges for Complex Businesses:** Standardized forms and predefined categories may not fully capture the requirements of unconventional or highly specialized business models.

Conclusion

After four years, the **Jan Samarth Portal** has emerged as a key platform for digital credit delivery and financial inclusion. Through a single-window system, technology-based processing, and integration of government schemes and lenders, it has improved access to institutional finance. Despite some operational limitations, it continues to support entrepreneurship, livelihoods, and inclusive economic empowerment.

Question for practice:

Discuss the role of the Jan Samarth Portal in improving digital credit delivery and promoting financial inclusion in India over the last four years.

Source: **PIB**