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Land pooling for infrastructure and roads

Source: The post “Land pooling for infrastructure and roads” has been created based on “Land pooling for infrastructure and roads” published in “Business Line” on 1st July 2026.

UPSC Syllabus: GS 3- Economy

Context: The government is planning to develop bypasses and ring roads around major cities to reduce traffic congestion and improve mobility. However, the availability of land and challenges in land acquisition remain significant obstacles, highlighting the need for innovative approaches such as land pooling to facilitate infrastructure development.

Challenges in the Existing Land Acquisition Process

1. Landowners lose their productive and income-generating asset when their land is acquired for infrastructure projects.
2. Compensation is often considered inadequate because it is based on guideline values rather than prevailing market prices.
3. Landowners feel disadvantaged because neighbouring lands appreciate significantly due to the new infrastructure, while they do not receive similar benefits.
4. Opposition from landowners frequently leads to protests, political interference, litigation, and delays in project implementation.
5. Demands for repeated changes in road alignments to protect private lands often result in inefficient planning and stalled projects.
6. Unplanned development along highways encourages linear urbanisation, traffic congestion, garbage accumulation, and inadequate civic amenities.

How Land Pooling Addresses These Challenges

1. Under land pooling, the government acquires a wider corridor for the highway and returns a portion of the developed land along the road margins to the original owners.
2. This approach makes landowners active partners in the development process rather than mere recipients of compensation.
3. The model is similar to land pooling schemes used for town planning and industrial development.
4. The land pooling model adopted for the Amaravati Township project demonstrates its potential for large-scale infrastructure development.

Advantages of Land Pooling

1. Landowners receive developed land with road access, and its value may become several times higher than the value of their original undeveloped land.
2. Every landowner shares both the losses and the gains equally, which reduces disputes and perceptions of unfairness.
3. The approach enables planned area-wide development with systematic provision of utilities, open spaces, and supporting infrastructure.
4. Highway alignments can be decided based on technical and planning considerations instead of vested interests.
5. The approach reduces litigation and delays, thereby facilitating faster execution of infrastructure projects.

6. Governments can recover a part of the land acquisition costs through betterment levies imposed on the beneficiaries.
7. Planned road grids improve access to more land parcels and help moderate land prices.
8. Fragmented government lands can be consolidated into larger and more productive parcels.
9. Landowners may voluntarily contribute land for infrastructure projects after recognising the long-term benefits of enhanced land values.

Challenges of Land Pooling

1. Landowners may be reluctant to participate because they may fear losing ownership or may not trust the implementation process.
2. The process requires coordination among multiple departments such as Revenue, Housing, Industries, and Urban Development, which can delay implementation.
3. Legal and administrative reforms are necessary to amend existing laws and rules before land pooling can be implemented effectively.
4. Delays in developing infrastructure or returning the developed land may reduce the confidence of landowners in the scheme.
5. Differences in land quality, location, and future market value may lead to disputes regarding equitable redistribution of developed land.
6. The success of land pooling depends on transparent planning and efficient execution, which may not be uniform across all States.

Way Forward

1. Governments should establish a transparent and time-bound framework for land pooling to build the confidence of landowners.
2. Landowners should be treated as partners in development by ensuring fair and equitable redistribution of developed land.
3. Strong coordination among Revenue, Housing, Industries, and infrastructure departments should be ensured for seamless implementation.
4. States should undertake the necessary legal and administrative reforms to facilitate land pooling.
5. Proper area-wide planning should be integrated with road projects to ensure systematic provision of utilities, open spaces, and civic infrastructure.
6. Successful land pooling models should be replicated across States to promote faster, inclusive, and sustainable infrastructure development.

Conclusion: Land pooling promotes inclusive infrastructure development by ensuring that landowners directly benefit from the increase in land value created by public investment. It can reduce conflicts, improve planning, and accelerate infrastructure creation while making landowners equal partners in the development process.

Question: Discuss the concept of land pooling for infrastructure and road development. How can it address the challenges of land acquisition while ensuring inclusive and planned development?

Source: [BusinessLine](#)

Passports, citizenship and the high cost of confusion

Source: The post “Passports, citizenship and the high cost of confusion” has been created based on “Passports, citizenship and the high cost of confusion” published in “Financial Express” on 1st July 2026.

UPSC Syllabus: GS 2 -Governance

Context: A seemingly technical clarification by the Ministry of External Affairs (MEA) has sparked a nationwide debate over citizenship, identity documents, and the legal status of millions of Indians. The controversy began after government officials stated that, although a passport is issued by the Government of India and identifies its holder as an Indian national, it is legally regarded as a travel document and does not constitute definitive proof of citizenship.

Issues Arising from Poor Government Communication

1. Governments often communicate policies using legal and technical language that is difficult for ordinary citizens to understand.
2. Citizens interact with the government through practical experiences rather than constitutional or legal interpretations.
3. Technical distinctions, such as those between passports and citizenship, may be legally valid but can create widespread public confusion.
4. Social media, television debates, and messaging platforms amplify confusion and misinformation at a very rapid pace.
5. Delayed clarifications allow false narratives and misinformation to spread before the official explanation reaches the public.
6. Repeated clarifications shift public attention from the policy itself to confusion over government communication.
7. Persistent ambiguity can gradually erode institutional trust and affect the country's global reputation.

Measures to Improve Government Communication

1. Governments should test major policy announcements to ensure that they are easily understood by ordinary citizens.
2. Legal precision should be balanced with clarity so that public communication remains both accurate and accessible.
3. Legal experts and communication professionals should work together while framing important public announcements.
4. Ministries should issue timely clarifications to prevent misinformation from spreading.
5. Governments should explain policies from the perspective of citizens' everyday experiences rather than using only legal terminology.
6. Public communication should prioritise transparency, simplicity, and consistency to strengthen institutional trust.

Conclusion: Clear, timely, and citizen-centric communication is an essential pillar of good governance. By combining legal accuracy with simplicity and transparency, governments can strengthen public trust, reduce misinformation, and protect both domestic credibility and international reputation.

Question: Effective public communication is essential for maintaining institutional trust in governance. Discuss in the context of the recent debate on passports and citizenship.

Source: [Financial Express](#)

Reimagining Sovereign AI for India's Strategic Future

UPSC Syllabus: Gs Paper 3- Indian economy and Infrastructure

Introduction

Artificial Intelligence (AI) is becoming a major driver of economic growth, technological leadership and national security. Countries are increasingly treating AI as a strategic national asset and reshaping policies to secure technological advantage. As a major IT services economy without its own frontier AI models, India must balance the benefits of global AI integration with the need to reduce long-term technological dependence. A sovereign AI strategy is therefore essential for sustained growth and strategic resilience.

Changing Global AI Landscape and the Rise of AI Geopolitics

1. **AI as a Strategic National Asset:** AI is no longer viewed only as a commercial technology. Governments are increasingly using AI policies to secure economic and national advantages.
2. **United States' Sovereign AI Measures:** The United States restricted foreign access to Anthropic's advanced AI models on national security grounds. It also created a mechanism to give the U.S. government early access to advanced AI models and is considering equity stakes in leading AI companies.
3. **Europe's Changing AI Strategy:** Europe is moving beyond a regulation-first approach by investing in AI computing capacity and encouraging "Buy European" public procurement.
4. **Argentina's Investment-Oriented Policy:** Argentina is trying to attract AI investment by providing a regulatory safe harbour for AI companies.
5. **AI Geopolitics Becoming the New Normal:** Countries are increasingly shaping AI policies around national interests. India must therefore respond to these changing global developments with a clear long-term strategy.

India's AI Opportunity

1. **AI as the Next Growth Opportunity:** Just as the **1991 economic liberalisation** transformed India's economy, AI can become the next major structural reform and support India's economy growth .
2. **Strong Digital Public Infrastructure:** India's success with **Aadhaar, UPI** and affordable mobile internet demonstrates its ability to build large-scale digital infrastructure that can support AI adoption.
3. **Large Technology Ecosystem:** India's IT services and app industries are well placed to expand the everyday use of AI across businesses and public services.

4. **Higher Productivity and Competitiveness:** Wider AI adoption can improve productivity, strengthen businesses and increase India's global competitiveness.
5. **Using Frontier AI for Present Growth:** Indian businesses should use the best available frontier AI models to remain globally competitive. The economic gains from using these models today can help build stronger domestic AI capabilities in the future.
6. **Research and Innovation Potential:** Affordable AI access can support scientists, students and research institutions, making AI an important tool for innovation and knowledge creation.
7. **Expanding Global Market Opportunities:** Strong AI adoption can help India strengthen its position in global technology products and digital services.

India's Strategic AI Challenges

1. **Dependence on Foreign Frontier AI Models:** India currently relies on foreign frontier AI systems because it does not possess its own advanced frontier models.
2. **Limited Frontier AI Capability:** Training frontier AI requires enormous computing power, making independent development extremely difficult for India.
3. **Low Research Investment:** India spends only about **0.6–0.65% of GDP** on research and development, while the private sector contributes only about one-third of this spending.
4. **India Cannot Match Frontier AI Investments:** OpenAI's projected compute spending of **\$50 billion** is more than six times India's annual private R&D spending. India cannot outspend global AI leaders and should instead strengthen strategic partnerships and technological linkages.
5. **Geopolitical Risks of Dependence:** Businesses can manage commercial risks through contracts, but they cannot protect themselves from geopolitical risks arising from dependence on foreign AI technologies.
6. **Balancing Globalisation and Industrial Policy:** India should not treat global integration and industrial policy as competing approaches. Both are needed to strengthen the country's AI ecosystem.
7. **Lessons from the Pharmaceutical Sector:** India still imports about **65% of its critical pharmaceutical ingredients from China** despite Production-Linked Incentive support. This shows that industrial policies create long-term capabilities but cannot deliver immediate strategic resilience.
8. **Weak Global Presence of Indian Apps:** Despite a strong domestic technology sector, no Indian app ranks among the global top ten in downloads, in-app purchase revenue or monthly active users.

Why India Needs a Sovereign AI Strategy

1. **Reducing Strategic Dependence:** India should steadily reduce long-term dependence on foreign AI technologies while remaining connected to global AI ecosystems.

2. **Strengthening Backward Linkages:** India should deepen its access to frontier AI technologies through government support instead of attempting to outspend global AI leaders.
3. **Expanding Forward Linkages:** India should strengthen exports of AI-enabled products and services to increase its global economic presence.
4. **Managing Geopolitical Risks:** Businesses can manage commercial risks through contracts and diversified supply chains, but they cannot manage geopolitical risks arising from dependence on foreign AI technologies. The government should therefore help reduce such strategic risks.
5. **Promoting Open Models:** Open-source AI models can reduce dependence on foreign APIs, lower costs, improve transparency and support Indian languages and local needs.
6. **Hosting AI Models in India:** India should develop the capability to host and operate large language models within the country to strengthen strategic control and technical expertise.
7. **Need for Resilient Compute Capacity:** A diversified AI hardware ecosystem can lower costs, improve reliability and reduce dependence on any single technology provider.

Way Forward for Building India's Sovereign AI Ecosystem

1. **Whole-of-Government Coordination:** Ministries dealing with external affairs, commerce, IT, defence, energy and telecommunications should work together to support India's AI ecosystem.
2. **Adopt a National AI Token Policy:** India should launch a National AI Token Policy and implement it over the next **24 months** to expand AI access in a phased manner.
3. **Provide Free AI Access for Research and Education:** Free AI tokens should be provided to the **top 20 IITs, IISc, top 100 universities, national R&D institutions and 5,000 high schools** to promote learning and innovation.
4. **Build Public-Private Partnerships:** India should collaborate with **Amazon Web Services (AWS), Google, and Microsoft** to develop a multi-vendor sovereign compute framework by offering data centre support and data sovereignty assurances.
5. **Use Smarter Financing Models:** AI access can be financed by slowing subsidy growth for one year while using enterprise services to cross-subsidise educational and research institutions.
6. **Create Competitive Market Conditions:** Instead of directly funding AI services, supportive regulations should encourage competition and reduce AI costs, similar to India's mobile data revolution.
7. **Expand AI Access in Phases:** India should create an Application Programming Interface (API) sandbox for **500 startups**, extend AI access to **100 universities** and launch AI literacy programmes in **500 high schools across 10 States**.
8. **Deploy AI Across Priority Sectors:** Fine-tuned AI models should be expanded across healthcare, agriculture, judiciary and education while supporting all **22 Indian languages**.

9. **Promote Innovation and Global Competitiveness:** Indian technology firms should improve product quality, innovation and global ambition rather than relying mainly on traditional IT services.
10. **Build a Unified Strategic Vision:** Established IT companies and startups should work towards the common goal of strengthening India's connection with global AI ecosystems while expanding domestic capabilities.
11. **Strengthen India's Global AI Position:** Wider AI adoption can help India become one of the world's leading AI economies, support **10,000+ AI-native startups**, and improve the global competitiveness of India-trained AI models.

Conclusion

Artificial Intelligence can become India's next major structural reform by strengthening productivity, innovation and competitiveness. India should remain deeply connected to global AI ecosystems while steadily building sovereign AI capabilities through stronger infrastructure, strategic partnerships and domestic innovation. This balanced approach can reduce strategic vulnerabilities and support long-term economic growth.

Question for practice:

Discuss the need for a sovereign AI strategy to strengthen India's technological resilience, global competitiveness, and long-term economic growth in the emerging era of AI geopolitics.

Source: [The Hindu](#)

The Fiscal Tightrope for State Governments

UPSC Syllabus: Gs Paper 2 - Issues and challenges pertaining to the federal structure

Introduction

Many Indian States are facing growing fiscal stress despite achieving significant social and economic progress. While taxation powers largely rest with the **Union government**, States carry a larger share of public expenditure on welfare and development. Kerala and Tamil Nadu show that rising debt is not always a sign of fiscal mismanagement. Instead, it often reflects the gap between expanding development responsibilities and the limited fiscal capacity available to State governments.

Fiscal Position of State Governments

1. **Rising Debt from Persistent Deficits:** State debt increases when government expenditure remains higher than tax and other receipts for many years. These deficits are mainly financed through market borrowings, which also increase interest payments.
2. **Reliance on Limited Revenue Sources:** Tamil Nadu depends heavily on **liquor sales and property registrations** for revenue. Heavy dependence on a few revenue sources can reduce fiscal flexibility and increase financial pressure if these revenues decline.

3. **States Carry Larger Spending Responsibility:** While the **Union government** holds most taxation powers, State governments undertake a larger share of public expenditure. They spend heavily on **health, education, agriculture, and irrigation**, which directly affect people's lives.
4. **Dependence on Multiple Revenue Sources:** States finance expenditure through **State Goods and Services Tax (SGST), sales tax, Union tax devolution, grants, loans, and market borrowings**. Their financial position depends on both their own revenues and fiscal support from the Union government.
5. **Kerala's Revenue Position:** Kerala mobilises strong own-tax revenues, with per capita collections about **1.5 times the all-India average**. However, it received only **1.92% of Union tax devolution**, lower than its **2.6% share of India's population in 2023-24**.

Why Do States Need Higher Public Expenditure?

1. **Investment in Human Development:** Higher public spending has supported better social outcomes in Kerala and Tamil Nadu for decades. During **2020-23**, their per capita social expenditure remained **30% and 20% higher**, respectively, than the all-State average.
2. **Essential Public Services:** A large share of State expenditure goes towards salaries of teachers, doctors, nurses, police personnel and other public employees. These services cannot be maintained without adequate public spending.
3. **Support for Welfare Commitments:** In Kerala, around **20%** of total expenditure goes towards salaries, **15.3%** towards pensions, and **16.5%** towards interest payments.
4. **Need for Future-Oriented Investment:** States require greater investment in infrastructure, higher education, research and public transport to build future productive capacity and support long-term development.

Structural Causes of Fiscal Stress

1. **Limited Fiscal Space for Capital Investment:** Kerala could allocate only **10%** of its financial resources towards capital expenditure. Most spending was absorbed by day-to-day revenue expenditure, reducing investment in future productive capacity.
2. **Balancing Welfare and Fiscal Stability:** Reducing salaries, pensions or other revenue expenditure may create fiscal space, but it can weaken the social achievements built over several decades.
3. **Weak Revenue Mobilisation:** Fiscal stress is not caused only by rising debt. Tamil Nadu shows that weak growth in **State Own Tax Revenue (SOTR)**, tax leakages and poor tax collection can also weaken State finances even when the economy grows rapidly.
4. **High Cost of Borrowing:** Indian States borrow through **State Development Loans (SDLs)** at **6.5-7.5%**, which is **0.25-0.75 percentage points** higher than Union government borrowing. This raises interest costs and increases fiscal pressure.

Developmental Consequences of Fiscal Constraints

1. **Pressure on Economic Transformation:** Kerala requires greater investment to develop knowledge-intensive sectors. Limited public investment reduces its ability to generate quality jobs for educated youth.
2. **Growing Outmigration:** Many educated young people leave Kerala because the State cannot provide sufficient educational and employment opportunities that match their aspirations.
3. **Private Wealth but Limited Public Investment:** Kerala shows visible signs of private prosperity, including expensive houses, cars and gold shops. However, weak public finances limit investment and may increase inequalities.
4. **Idle Domestic Savings:** Kerala's credit-deposit ratio is only around 66%, compared to the national average of 76%. If even part of these surplus savings had been invested, the State's capital expenditure between 2016 and 2026 could have been at least doubled.
5. **Pressure on Growth Aspirations:** Fiscal stress makes it difficult for States to invest enough to achieve ambitious economic and development goals despite strong economic potential.

Lessons from China's Local Government Financing

1. **Local Governments Drive Investments:** In China, provinces and lower-level governments undertake a major share of public investment. Their borrowing is supported by central planning and large domestic savings.
2. **Multiple Financing Channels:** Chinese local governments raise resources through **Local Government Bonds (LGBs)**, **land sales**, **Local Government Financing Vehicles (LGFVs)** and central fiscal transfers.
3. **Lower Borrowing Costs:** Chinese local governments borrow from their banking system at around 2%, much lower than borrowing costs faced by Indian States. Lower interest costs support larger public investment.
4. **Public Savings Can Support Development:** Government securities in India are largely purchased by domestic banks and insurance companies using public savings. Better fiscal structures can help States access these savings more easily and at lower cost for development projects.

Way Forward

1. **Strengthen State Revenue Mobilisation:** States should improve tax administration, plug revenue leakages and identify new revenue sources so that State Own Tax Revenue (SOTR) grows in line with economic growth.
2. **Improve Union-State Fiscal Cooperation:** States should work more closely with the Union government to make better use of central schemes and available fiscal support.

3. **Restructure Public Debt:** Existing debt should be restructured to reduce interest costs, as committed expenditure leaves States with limited spending flexibility.
4. **Reform Loss-making Public Sector Undertakings:** Power and transport public sector undertakings should be restructured to reduce the long-term fiscal burden. Public-Private Partnership (PPP) models can also be considered while protecting workers' welfare.
5. **Rationalise Welfare Expenditure:** Welfare programmes should be reviewed to remove duplication. New cash transfer schemes should not be added without restructuring existing schemes.
6. **Target Welfare Benefits Better:** Welfare schemes should reach the intended beneficiaries so that public spending remains fiscally sustainable over the long term.
7. **Mobilise Domestic Savings for Development:** Fiscal structures should allow States to access domestic savings more easily and at lower borrowing costs to finance carefully planned development projects.
8. **Strengthen Stable Revenue Sources:** States should improve existing revenue sources, such as property registrations and other sustainable tax avenues, to reduce long-term fiscal pressure.

Conclusion

State government debt should be viewed in the context of growing development responsibilities and limited fiscal capacity rather than simply as fiscal mismanagement. Stronger revenue mobilisation, efficient expenditure and lower borrowing costs can improve the financial position of States. Fiscal structures should also enable States to access domestic savings more easily to finance long-term development and economic growth

Question for practice:

Examine the major causes of fiscal stress faced by State governments and suggest measures to strengthen their fiscal capacity while sustaining development and welfare expenditure.

Source: [The Hindu](#)

On curbing young adults on social media

Source: The post "On curbing young adults on social media" has been created based on "On curbing young adults on social media" published in "The Hindu" on 2nd July 2026.

UPSC Syllabus: GS 2- Governance

Context: The governments of several countries, including the **United Kingdom, Australia, Indonesia, Malaysia, France and Canada**, are considering or introducing measures to restrict social media access for children below 16 years due to concerns over addiction, online harms and mental well-being. The announcement by Keir Starmer to ban social media for under-16s has also sparked similar policy debates in India, particularly at the State level, on balancing child safety, privacy and platform accountability.

Issues with banning social media for children under 16 years

1. **Limited educational value:** Social media is not necessarily an effective learning space, and its educational value for children remains debatable.

2. **Lack of conclusive evidence:** Scientific studies do not establish a uniform relationship between social media use and harm, as children respond differently to similar online experiences.
3. **Diverse vulnerability:** Children's vulnerability varies according to social, economic and digital backgrounds, particularly in a diverse country like India.
4. **Weak age verification:** Effective implementation requires robust age-verification mechanisms, which remain inadequate.
5. **Privacy concerns:** Age verification enables platforms to collect sensitive identity data of children, raising serious privacy issues.
6. **Easy circumvention:** Children can bypass bans by using family members' credentials or technological workarounds.
7. **Culture of rule evasion:** Frequent circumvention may normalise bypassing rules, potentially influencing future legal compliance.
8. **Migration to riskier platforms:** Australia's experience shows that age-gating may push children to lesser-known platforms whose safety is uncertain.

Need for platform governance

1. **Shift regulatory focus:** Regulation should move from restricting children to holding platforms accountable for creating conditions of online risk.
2. **Transparency in platform design:** Platforms should be legally required to disclose their design practices and child safety measures.
3. **Address addictive design:** Since attention-based platforms depend on user engagement, regulations should curb addictive design features.
4. **Create safer digital spaces:** Platform accountability can ensure safer online environments without relying solely on access restrictions.

Challenges in regulating platforms

1. **Government dependence:** Governments may hesitate to regulate social media companies because they also rely on these platforms for communication and outreach.
2. **Complex enforcement:** Monitoring compliance with platform design standards is technically difficult and resource-intensive.
3. **Selective enforcement concerns:** Regulatory actions may face allegations of bias or inconsistent implementation.

Way Forward

1. **Evidence-based regulation:** Identify the most vulnerable categories of children instead of adopting a uniform approach.
2. **Comprehensive regulatory framework:** Combine platform accountability, transparency and child safety measures.
3. **Privacy safeguards:** Ensure that any age-verification mechanism protects children's personal data.
4. **Strengthen institutions:** Enhance the capacity of regulatory and judicial bodies for effective platform oversight.

Conclusion: Banning or limiting children's access to social media is not a standalone solution. A balanced strategy based on platform accountability, evidence-based regulation and strong privacy safeguards is essential for ensuring children's online safety.

Question: Banning social media for children below 16 years is not a comprehensive solution to online safety challenges. Discuss in the context of platform governance and privacy concerns.

Source: The Hindu

Fixing the rot: On the subversion of public examinations and recruitment

Source: The post “Fixing the rot: On the subversion of public examinations and recruitment” has been created based on “Fixing the rot: On the subversion of public examinations and recruitment” published in “The Hindu” on 2nd July 2026.

UPSC Syllabus: GS –2- Governance

Context: Recurring paper leaks in public examinations and recruitment tests have exposed systemic weaknesses in India's examination system. They undermine merit-based selection, erode public trust, and adversely affect India's efforts to harness its demographic dividend.

Impact of recurring paper leaks

1. **Erosion of meritocracy:** Paper leaks compromise fair competition by allowing undeserving candidates to gain an unfair advantage.
2. **Threat to demographic dividend:** Corruption in examinations and recruitment weakens skill development and reduces the quality of human resources.
3. **Loss of public trust:** Repeated cancellations and re-examinations reduce confidence in public institutions.
4. **Growth of organised crime:** A well-established network involving paper leaks has evolved into a profitable illegal industry.

Causes of recurring paper leaks

1. **Insider networks:** Employees in printing presses, security personnel, government officials and teachers have repeatedly been involved in leaking question papers.
2. **Coaching ecosystem linkages:** Leaked papers are often sold to coaching centres for financial gain.
3. **Closed pool of examiners:** The repeated use of the same group of paper setters increases the risk of information leakage.
4. **Lack of conflict-of-interest checks:** Authorities often fail to verify the antecedents and commercial links of examiners.
5. **Weak institutional safeguards:** Vulnerabilities exist in both question paper preparation and distribution processes.
6. **Focus on individuals rather than systems:** Investigations generally target “kingpins” without addressing structural weaknesses.

Challenges in addressing paper leaks

1. **Deep-rooted insider nexus:** Organised networks operate across multiple States and institutions.
2. **Recurring pattern of leaks:** Similar methods are repeatedly used despite investigations.
3. **Weak accountability:** Responsibility is rarely fixed on senior administrative or political authorities.
4. **Limited systemic reforms:** Corrective actions often remain reactive, focusing on arrests instead of institutional changes.

Way Forward

1. **Diversify paper setters:** Expand and regularly rotate the pool of examiners to reduce insider risks.
2. **Strengthen background verification:** Conduct thorough antecedent and conflict-of-interest checks for all paper setters and officials involved.
3. **Secure examination processes:** Strengthen safeguards in question paper preparation, printing, storage and distribution.
4. **Address the coaching-exam nexus:** Monitor and regulate links between examination officials and coaching institutions.
5. **Ensure political accountability:** Education Ministers at both the Centre and States should accept responsibility for repeated failures and ensure institutional reforms.

Conclusion: Recurring paper leaks cannot be addressed through arrests alone. Restoring the credibility of public examinations requires systemic reforms, stronger institutional safeguards, transparent recruitment processes and clear political accountability to protect meritocracy and public trust.

Question: Recurring question paper leaks in public examinations undermine meritocracy and governance. Examine the causes, challenges and suggest measures to restore the credibility of the examination system.

Source: [The Hindu](#)

The Case for Building India's Coal Chemistry Capability

UPSC Syllabus: Gs Paper 3- Infrastructure

Introduction

India successfully managed the **2026 Strait of Hormuz** energy disruption through refinery flexibility, diversified crude sourcing and strong indigenous technical capability. However, the crisis also exposed India's continued dependence on imported LPG. The experience showed that lasting **energy security** requires reducing import dependence through indigenous science, technology and domestic resources. Building a strong **coal chemistry** ecosystem offers an important opportunity to strengthen India's long-term energy resilience.

India's Response to the Strait of Hormuz Crisis

1. **Diversified crude sourcing:** India nearly tripled its crude supplier base over the last two decades. This enabled refineries to quickly switch to crude supplies from the **Americas, Atlantic Basin, West Africa, Russia and West Asia** after the Strait of Hormuz disruption.
2. **Indigenous refinery capability:** Continuous investment in **research, metallurgy, process innovation and workforce training** enabled refineries to process crude with different density, sulphur and viscosity levels. This reduced dependence on any single crude source and strengthened operational flexibility.
3. **Rapid operational response:** Within weeks of the disruption, **non-Hormuz crude sourcing increased from 55% to 70%** of India's total crude intake. Public and private refineries adjusted

operating conditions, modified fractionation patterns and processed different crude grades while maintaining product quality and safety.

4. **Institutional knowledge and engineering strength:** Years of investment in process understanding, operator training and technical expertise enabled refinery systems to absorb sudden supply disruptions. Engineers managed complex industrial processes instead of treating refineries as fixed machines.
5. **Managing the LPG supply disruption:** Under the **LPG Control Order**, domestic LPG production increased from **35 Thousand Metric Tonnes (TMT) per day to 54 TMT per day within five days** by optimising fractionation and cracking units. This engineering capability helped manage the immediate supply shortage, but it did not reduce India's long-term dependence on imported LPG.

From Refinery Flexibility to Coal Chemistry

1. **Refinery flexibility has structural limits:** Refinery flexibility solved the immediate problem of processing crude from different suppliers. However, it could not solve India's deeper dependence on imported **LPG**, which remains concentrated among a few producers in the **Gulf and Atlantic Basin**.
2. **Need for a domestic fuel alternative:** Long-term energy security requires producing a domestic fuel that can replace imported LPG. Reducing dependence on imported molecules is more durable than simply improving the processing of imported fuels.
3. **DME as a practical substitute: Dimethyl Ether (DME)** is a clean-burning fuel that is chemically similar to LPG. It can be blended directly with LPG and used through the existing cylinders and pipeline network without creating new distribution infrastructure.
4. **Coal gasification strengthens energy security:** DME can be produced through **coal gasification**, which converts coal into syngas and then into DME. Since India possesses **some of the world's largest coal reserves**, it has a strong domestic resource base for producing this alternative fuel.
5. **Economic and strategic gains:** The **Bureau of Indian Standards** has approved blending up to **20% DME with LPG**. According to an industry assessment, this blend can replace about **6.3 million tonnes of LPG imports annually** and save nearly **₹34,000 crore** in foreign exchange every year, making it a significant step towards long-term energy security.

Government Initiatives

1. **Indigenous technology development:** Scientists at **CSIR's National Chemical Laboratory (NCL)** developed an indigenous technology to convert methanol into **Dimethyl Ether (DME)**. This created a domestic technological base for producing an alternative to LPG.
2. **Scaling up innovation:** During the crisis, the **Centre for High Technology** under the Ministry of Petroleum and Natural Gas approved the scaling up of this indigenous pilot technology. This showed how earlier investments in science can become strategic assets during national emergencies.
3. **Innovation ecosystem:** Strong coordination among research laboratories, government institutions and industry helps convert scientific knowledge into practical technologies. This approach strengthens national resilience and supports long-term technological self-reliance.

4. **Policy support for coal gasification:** The Union Cabinet approved a ₹37,500 crore scheme to promote surface coal and lignite gasification. The scheme aims to achieve **100 million tonnes of coal gasification annually by 2030** and cites the West Asia crisis as one of its key reasons.
5. **Long-term investment incentives:** The scheme provides financial support of up to **20% of plant and machinery costs** and extends coal linkage tenure to **30 years**. These measures provide greater certainty for investment in capital-intensive industries.

Opportunities and Implementation Challenges

1. **Abundant domestic coal resources:** India possesses some of the world's largest coal reserves. This provides a strong resource base for expanding coal-based chemical production and reducing fuel imports.
2. **Strategic and economic opportunities:** Coal-based DME can reduce dependence on imported LPG, improve energy security and lower foreign exchange outflow. It also makes the energy system less vulnerable to external supply disruptions.
3. **High ash content of Indian coal:** Indian coal contains more ash than the cleaner coal used in China's coal-to-chemicals industry. This creates technical challenges for efficient coal gasification.
4. **Limited gasification capacity:** India's present coal gasification capacity is much lower than the government's target. Expanding this capacity will require sustained industrial investment and technological development.
5. **Execution is the remaining challenge:** Policy intent has already been established. The next step is to build the same industrial discipline, engineering capability and technical depth that transformed India's refinery sector.

Way Forward

1. **Strengthen indigenous technological capability:** Continue investing in research, process engineering, metallurgy and skilled manpower to build long-term industrial capability.
2. **Expand coal gasification capacity:** Scale up coal gasification plants to support large-scale domestic production of DME and reduce dependence on imported LPG.
3. **Promote institutional collaboration:** Strengthen cooperation among research institutions, government agencies and industry to accelerate technology development and commercial adoption.
4. **Focus on effective implementation:** Ensure timely execution of the coal gasification programme so that policy support is converted into industrial capability and energy security.
5. **Follow the refinery model:** Apply the same long-term commitment to innovation, technical learning and engineering excellence that enabled India's refineries to respond successfully during the Hormuz crisis.

Conclusion

The **Strait of Hormuz crisis** showed that **indigenous scientific capability** is India's strongest safeguard against energy disruptions. Refinery flexibility helped manage the immediate crisis, but long-term energy security requires reducing import dependence. Building a strong **coal chemistry ecosystem** through sustained innovation, industrial capability and effective implementation can create a permanent strategic asset and strengthen India's future energy resilience.

Question for practice:

Examine how India's response to the Strait of Hormuz crisis highlights the need to build coal chemistry capability for achieving long-term energy security.

Source: [The Hindu](#)

A Unified Policy Architecture for India's Energy Future

UPSC Syllabus: Gs Paper 3- Infrastructure

Introduction

India has made significant progress in expanding energy access through near-universal household electrification, wider clean cooking fuel coverage and rapid growth in renewable energy. As energy demand rises and the energy mix becomes more diverse, the next phase of the transition requires better coordination across different fuels, technologies and institutions. A unified policy framework can support India's goals of energy self-reliance by 2047, net-zero emissions by 2070, and long-term energy security, affordability and sustainability.

Why India Needs a Unified Energy Policy Framework

- 1. Growing Energy Demand:** India's energy demand will continue to rise with **economic development, industrialisation and urbanisation**. This will increase pressure on the country's energy system.
- 2. Dependence on Energy Imports:** Although domestic energy production is expanding, India still depends on imports for a significant share of its **oil and natural gas** requirements. This creates long-term energy security concerns.
- 3. Complex Energy System:** India's energy system now includes conventional fuels, renewable energy and emerging technologies. Managing such a diverse system requires better planning across different sectors.
- 4. Balancing Multiple Priorities:** India has to ensure **energy security, affordability, sustainability and economic growth** at the same time. These objectives need to be pursued together instead of separately.
- 5. Long-Term National Goals:** Achieving **energy self-reliance by 2047** and **net-zero emissions by 2070** requires an integrated approach to energy planning and governance.

Existing Progress in India's Energy Sector

- 1. Improved Energy Access:** India has achieved **near-universal household electrification** and expanded access to **clean cooking fuel** through initiatives such as the **Saubhagya Scheme** and **Pradhan Mantri Ujjwala Yojana**. These programmes have strengthened energy access across the country.

2. Renewable Energy Expansion: Renewable energy installed capacity increased from about **40 GW in 2015** to nearly **260 GW by 2025**. This reflects steady progress in diversifying India's energy mix.

3. Growth in Solar and Wind Power: India crossed **157 GW of solar capacity** and **56 GW of wind capacity**. It also became the **world's fourth-largest clean electricity generator**.

4. Expanding Electricity System: India became the **third-largest producer and consumer of electricity** with an installed capacity of **513.79 GW by December 2025**. This reflects the rapid expansion of the country's power sector.

5. Improving Energy Security: India has diversified its energy import sources and promoted **coal gasification** to reduce dependence on imported LPG. These efforts strengthen long-term energy security.

6. Modernising Energy Infrastructure: The country is integrating renewable energy through **13 GWh Battery Energy Storage Systems (BESS)** and **Pumped Storage Projects (PSPs)**. These technologies improve grid stability and support the integration of renewable power

7. Transition: Despite these achievements, the growing complexity of India's energy system requires a more integrated approach to energy planning and governance. This creates the need for a common framework to guide the next phase of India's energy transition.

The Proposed Unified Energy Framework

1. Unified National Planning:

- The framework proposed by the **Indian National Science Academy (INSA)** seeks to align different energy resources, technologies and institutions under a common national strategy.
- It promotes coordinated planning across the energy sector and is built around **four mutually reinforcing pillars: Adequacy, Access, Affordability and Appropriate Sustainability**.

2. Adequacy

- **Reliable Energy Supply:** The framework seeks to ensure a reliable and diversified energy supply by using a balanced mix of conventional and emerging energy sources.
- **Modern Energy Infrastructure:** It supports modern infrastructure, **energy storage** and **digital technologies** to strengthen energy resilience and reduce long-term vulnerabilities.

3. Access

- **Universal and Equitable Services:** Every citizen should have reliable and equitable access to energy services. The framework builds on India's progress in electrification and clean cooking fuel.
- **Better Service Delivery:** It focuses on strengthening **last-mile delivery**, improving service quality and expanding **decentralised energy solutions** where suitable.

4. Affordability

- **Affordable Energy Transition:** The transition should remain economically viable for **households, businesses and industries** so that clean energy remains accessible to all.
- **Inclusive Market Support:** The framework encourages **innovative financing mechanisms**, efficient markets and **consumer safeguards** to support an inclusive energy transition.

5. Appropriate Sustainability

- **Development-Oriented Sustainability:** Sustainability should match India's development priorities and resource endowments instead of following a uniform approach.
- **People-Centred Transition:** The framework supports **local communities, workforce development** and **region-specific transition pathways** to ensure that the transition benefits different parts of the country.

Key Enablers of the Energy Transition

1. **Circular Economy and CCUS:** Circular economy practices and Carbon Capture, Utilisation and Storage (CCUS) can complement renewable energy and help reduce emissions from industrial sectors. These measures support cleaner production while improving resource efficiency.

2. Green Hydrogen and Emerging Technologies:

- The framework identifies **green hydrogen** as an important emerging technology for the next phase of the energy transition.
- Under the **National Green Hydrogen Mission**, India aims to produce **5 million metric tonnes of green hydrogen annually by 2030**, strengthening domestic clean energy production.

3. **Energy Storage and Modern Infrastructure:** A reliable energy system requires stronger infrastructure, **energy storage** and digital technologies. Battery Energy Storage Systems and Pumped Storage Projects can improve grid stability and support the large-scale integration of renewable energy.

4. **Clean Energy Expansion:** Coal, renewables, biomass, natural gas, waste-to-energy systems and other emerging clean technologies all have a role in India's energy future. Better coordination among these energy sources can improve overall system efficiency and resilience.

5. **Institutional Coordination:** A successful transition requires institutions to work together over the long term. Coordinated planning across generation, transmission, storage and distribution can help different parts of the energy sector function as one integrated system.

Way Forward

1. **Adopt a Phased Transition:** The energy transition should follow a phased approach because such transformations take decades. Near-term priorities include strengthening infrastructure, accelerating renewable energy deployment and supporting emerging technologies.

2. **Strengthen Long-Term Coordination:** Institutional mechanisms should improve coordination among different energy resources and technologies. This can support better planning and reduce gaps across sectors.

3. Expand Low-Carbon Energy Systems: Over time, greater emphasis should be placed on **low-carbon technologies**, wider use of **bio-resources** and a more interconnected energy ecosystem. This will improve resilience while reducing emissions.

4. Support Future Energy Investments: India has announced a **₹9.15 lakh crore** plan to strengthen power infrastructure and meet a projected demand of **458 GW by 2032**.

5. Build a Future-Ready Energy Sector: Policy support such as **100% FDI in the power sector**, expansion of **off-grid solar electrification**, the **SHANTI Act** for nuclear energy and the target of **100 GW nuclear capacity by 2047** can strengthen energy security while supporting long-term economic growth.

Conclusion

India's energy transition now requires an integrated approach rather than separate policies for different energy sources. A unified policy framework can improve coordination across technologies and institutions while strengthening energy security, affordability and sustainability. With phased implementation and continued investment, it can support economic growth and help India achieve energy self-reliance by 2047 and net-zero emissions by 2070.

Question for practice:

Examine the need for a unified policy architecture to support India's energy transition and achieve long-term energy security, affordability and sustainability.

Source: [The Hindu](#)

Delhi-Tokyo ties face the future

Source: The post “**Delhi-Tokyo ties face the future**” has been created based on “**Delhi-Tokyo ties face the future**” published in “Indian Express” on 3rd July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: Japanese Prime Minister Sanae Takaichi's visit to India comes at a time of growing geopolitical uncertainty in the Indo-Pacific, particularly due to the evolving United States approach towards China. Against this backdrop, the visit highlights the importance of the India-Japan Special Strategic and Global Partnership in strengthening regional security, economic resilience, technological cooperation, and maintaining a stable, rules-based Indo-Pacific.

Significance of the India-Japan Strategic Partnership

1. Addressing China's Growing Assertiveness

- Shared strategic concerns:** India and Japan are increasingly concerned about China's assertive behaviour in the Indo-Pacific.
- Common security challenges:** India continues to face an unresolved border dispute with China, while Japan faces maritime and territorial disputes in the East China Sea.
- Maintaining regional stability:** Stronger bilateral cooperation helps preserve a stable and rules-based Indo-Pacific.

- d. **Balancing regional power:** The partnership contributes to maintaining a favourable balance of power in Asia.

2. Strengthening Economic and Technological Cooperation

- a. **Leveraging complementary strengths:** Japan brings advanced technology, investment capacity, semiconductor expertise, and manufacturing capabilities.
- b. **India's comparative advantage:** India offers a vast market, skilled software professionals, and economies of scale.
- c. **Reducing strategic dependence:** Both countries seek to diversify away from Chinese technology and rare earth supply chains.
- d. **Building resilient value chains:** Coordinated cooperation can create secure and future-ready global supply chains.

3. Enhancing Defence and Security Cooperation

- a. **Complementary defence capabilities:** Japan's growing military strength complements India's strategic objectives.
- b. **Responding to Indo-Pacific uncertainties:** Both countries aim to strengthen regional security amid changing geopolitical dynamics.
- c. **Supporting India's modernisation:** Defence and strategic cooperation accelerates India's military and technological modernisation.

4. Ensuring a Stable Indo-Pacific Amid Global Uncertainty

- a. **Changing US approach:** The evolving United States policy towards China and the Indo-Pacific has created uncertainty regarding long-term regional security arrangements.
- b. **Need for regional leadership:** India must continue strengthening partnerships independent of shifts in US policy.
- c. **Promoting a rules-based order:** India-Japan cooperation reinforces peace, stability, and respect for international rules in the Indo-Pacific.

Challenges

1. Strategic Uncertainty in the Indo-Pacific: The evolving United States approach towards the Indo-Pacific has created strategic ambiguity for regional partners.

2. China's Expanding Influence: China's growing military and economic capabilities continue to pose security and geopolitical challenges to both India and Japan.

3. Dependence on Chinese Supply Chains: Despite diversification efforts, dependence on Chinese technology and rare earth supplies remains a strategic vulnerability.

4. Divergent National Priorities: Differences in domestic priorities and strategic approaches may affect the pace and scope of bilateral cooperation.

Way Forward

1. Deepen Defence Cooperation: Expand defence partnerships, joint exercises, and security cooperation to strengthen regional stability.

2. Enhance Technology Collaboration: Increase cooperation in semiconductors, advanced manufacturing, emerging technologies, and innovation.

3. Build Resilient Supply Chains: Develop diversified and secure supply chains by reducing dependence on Chinese technologies and critical minerals.

4. Accelerate India's Modernisation: Leverage Japanese investment, technology, and expertise to strengthen India's military and technological capabilities.

5. Sustain Strategic Engagement: Continue regular high-level political dialogue and deepen cooperation to preserve a stable, rules-based Indo-Pacific and a favourable regional balance of power.

Conclusion: India and Japan are natural strategic partners in the Indo-Pacific. As geopolitical uncertainties increase, their partnership in defence, technology, investment, and resilient supply chains will be crucial for maintaining a **stable, secure, and rules-based regional order** while advancing the long-term strategic interests of both countries.

Question: Discuss the significance of the India-Japan strategic partnership in ensuring a stable and rules-based Indo-Pacific. Examine the challenges and future prospects of Delhi-Tokyo ties.

Source: [Indian Express](#)

The right to a fair trial at the crossroads

Source: The post “**The right to a fair trial at the crossroads**” has been created based on “**The right to a fair trial at the crossroads**” published in “The Hindu” on 3rd July 2026.

UPSC Syllabus: GS 2 – Polity & Governance

Context: The Supreme Court's denial of bail to Umar Khalid and Sharjeel Imam has revived concerns over the constitutional guarantee of a fair trial under **Article 21**. The issue highlights the growing problem of prolonged pre-trial detention, particularly under stringent laws such as the **Unlawful Activities (Prevention) Act (UAPA)**.

Significance of Prolonged Pre-Trial Detention and the Right to a Fair Trial

1. Violation of the Right to Personal Liberty

- a. Article 21 guarantees the right to life and personal liberty.
- b. An extended delay in trial cannot override the constitutional right to liberty even under stringent laws like the UAPA.
- c. Individuals should not remain imprisoned for years without being found guilty.

2. Bail Cannot Depend Solely on Gravity of the Offence

- a. Bail decisions should consider multiple factors, including the reasons for delay in trial.
- b. The seriousness of allegations alone should not justify indefinite detention.
- c. At the bail stage, the offence remains an allegation and has not been judicially established.

3. Undermining the Principle of "Bail, Not Jail"

- a. The rule of law requires that individuals should not be incarcerated indefinitely without trial.
- b. Long periods of imprisonment before conviction effectively amount to punishment without due process.
- c. Many undertrial prisoners have eventually been acquitted after spending years in jail.

4. Fair Trial is a Constitutional Responsibility

- a. The judiciary has recognised that prolonged trials raise constitutional concerns.
- b. Judges have the responsibility to ensure that trials proceed within a reasonable time.
- c. Delay weakens public confidence in the criminal justice system.

Challenges

1. Delays in Judicial Proceedings: Criminal trials often remain pending for several years, resulting in prolonged incarceration of undertrials.

2. Inconsistent Bail Jurisprudence

- a. Courts have delivered contradictory bail orders in similar cases involving comparable facts.
- b. Such inconsistency creates uncertainty and undermines legal predictability.

3. Stringent Provisions of UAPA

- a. The restrictive bail provisions under the UAPA make release difficult despite prolonged detention.
- b. The law's application can blur the distinction between political dissent and terrorism.

4. Growing Undertrial Population

- a. Increasing numbers of undertrial prisoners continue to remain in custody without timely adjudication.
- b. This raises serious concerns regarding justice and individual liberty.

Way Forward

1. Ensure Time-Bound Trials: Courts should prioritise speedy disposal of cases involving long-term undertrial prisoners.

2. Strengthen the Principle of Bail: Courts should give greater weight to prolonged incarceration while deciding bail applications.

3. Promote Consistency in Bail Decisions: Judicial principles governing bail should be applied uniformly across similar cases.

4. Prevent Misuse of Stringent Laws

- a. Courts should ensure that laws like the UAPA are not used to suppress lawful political dissent.
- b. The distinction between terrorism and democratic dissent must remain clear.

5. Uphold Constitutional Values

- a. The judiciary should reaffirm that personal liberty and fair trial remain fundamental constitutional commitments.
- b. Individuals should not be punished through prolonged imprisonment before conviction.

Conclusion: The right to a fair trial is an essential component of constitutional democracy. Prolonged pre-trial detention undermines the rule of law, personal liberty, and public confidence in the justice system. Ensuring speedy trials, consistent bail jurisprudence, and protection of constitutional rights is essential to uphold the principle that **justice must not only be done but must also be seen to be done.**

Question: "The right to a fair trial is a cornerstone of Article 21." Discuss the challenges posed by prolonged pre-trial detention in India. Suggest measures to strengthen the right to a fair trial.

Source: [The Hindu](#)

A Shot at Life: Mandsaur's Model for HPV Vaccination

UPSC Syllabus: Gs Paper 3- Issues relating to development and management of Social Sector/Services relating to Health.

Introduction

Cervical cancer is the **second most common cancer among women in India** and remains a major public health challenge. Since **nearly 95% of cervical cancer cases are caused by high-risk Human Papillomavirus (HPV)**, vaccination offers an effective way to prevent the disease. India launched a **nationwide free HPV vaccination campaign for 1.15 crore girls aged 14–15 years**, while Mandsaur district demonstrated how data-driven planning and community-based implementation can achieve inclusive vaccination coverage.

What is HPV Vaccination?

1. **HPV Infection:** Human Papillomavirus (HPV) is one of the most common viral infections in the world. It spreads mainly through skin-to-skin contact and is a leading sexually transmitted infection.
2. **Link with Cervical Cancer:** Persistent infection with high-risk HPV types, particularly HPV 16 and HPV 18, is the primary cause of cervical cancer, accounting for nearly 95% of cases.
3. **Burden in India:** Cervical cancer remains a major public health concern globally and in India. It is the second most common cancer among women in India, with over 1.2 lakh new cases and nearly 80,000 deaths every year as per the WHO GLOBOCAN 2022 report.
4. **Role of HPV Vaccination:** HPV vaccination protects against the high-risk HPV types responsible for most cervical cancer cases. It is considered one of the most effective ways to prevent cervical cancer.

5. **Scientific Validation:** WHO and India's National Technical Advisory Group on Immunization (NTAGI) recommend HPV vaccination as a safe, effective and long-lasting preventive measure.

India's HPV Vaccination Initiative

1. **National Campaign:** The Government of India launched the nationwide HPV vaccination campaign on 28 February 2026. It provides free vaccination to around 1.15 crore girls aged 14 years every year.
2. **Vaccination Schedule:** India follows a single-dose schedule using Gardasil-4 under the national programme, in line with global scientific evidence.
3. **Delivery Mechanism:** Vaccination is voluntary, free of cost, requires parental or guardian consent, and is provided only at government health facilities under trained medical supervision.
4. **Digital and Logistic Support:** The U-WIN platform manages beneficiary registration, consent and reporting, while the e-VIN portal manages vaccine stocks and logistics. Vaccination sessions follow cold chain standards and systems for managing any rare adverse events.
5. **Target Population:** The campaign covers girls who have **completed 14 years but not yet 15 years**, aiming to vaccinate about **1.15 crore beneficiaries annually**.
6. **Campaign Duration:** The campaign is conducted in 90-day campaign mode, after which the vaccine becomes available through routine immunisation sessions.

Challenges in Achieving Universal HPV Vaccination

1. **Low Awareness:** Awareness about cervical cancer, HPV infection and preventive vaccination remains limited. This reduces the acceptance of preventive healthcare services.
2. **Social Stigma:** Discussions related to sexual health often face social discomfort. Gender bias and low cultural sensitivity make HPV vaccination difficult in many communities.
3. **Vaccine Hesitancy:** Many families remain uncertain about the long-term impact of the vaccine. This hesitation delays vaccination even when the vaccine is available free of cost.
4. **Spread of Misinformation:** Rumours such as vaccine-induced infertility created fear among families. These myths weakened public confidence despite scientific evidence supporting the vaccine's safety.
5. **Exclusion of Vulnerable Communities:** Girls from Banchhada communities, nomadic tribes, urban slums and school dropouts are more likely to remain outside government service delivery. Reaching these groups requires targeted efforts.
6. **Data Invisibility:** Many eligible girls remain unidentified because beneficiary information is scattered across different government records. This makes complete coverage difficult.

7. **Delay in Community Acceptance:** Resistance at the grassroots often appears as delay, doubt and discomfort rather than complete refusal. Families may postpone vaccination instead of rejecting it outright.
8. **Last-mile Implementation Challenges:** Universal coverage requires repeated counselling, community engagement and locally suitable strategies. A one-time awareness campaign is often not enough to overcome field-level barriers.

Mandsaur's Strategy for Inclusive HPV Vaccination

1. **Prioritising Vulnerable Communities:** The campaign began with girls from Banchhada communities, nomadic tribes, urban slums and school dropouts. This ensured that the most vulnerable beneficiaries were covered first.
2. **Building a Reliable Beneficiary Database:** The district combined data from Rashtriya Bal Swasthya Karyakram (RBSK), SAMAGRA MP and Ladli Laxmi Yojana to prepare hyper-local target lists. This reduced data gaps and improved identification of eligible girls.
3. **Door-to-Door Verification:** Health teams conducted household surveys and tracked beneficiaries through SAMAGRA IDs. This ensured that eligible girls did not fall through statistical gaps.
4. **Village-Level Micro-Planning:** School and anganwadi enrolment gaps were analysed to prepare Master Line Lists for every village. Low-coverage and high-resistance areas were identified for focused action.
5. **Behavioural Nudge Approach:** Health workers informed families that their daughters were "due for vaccination" instead of asking them to choose vaccination. This reduced hesitation and made vaccination the default choice.
6. **Counselling and Better Access:** Families who initially refused vaccination received repeated counselling visits. Schools and local bodies arranged transport to remove logistical barriers.
7. **Community Awareness and Trust:** Gen-Z influencers, athletes, doctors, students, religious leaders and media personalities helped counter myths. Public recognition of vaccinated families and peer champions encouraged wider acceptance.
8. **Monitoring and Accountability:** Gram panchayat and ward-level data sharing encouraged collaboration and healthy competition. Digital reminders improved monitoring by frontline workers.
9. **Integration with Existing Health Services:** HPV vaccination was linked with routine immunisation, antenatal care clinics and Pradhan Mantri Surakshit Matritva Abhiyan sessions. This increased awareness and made service delivery more convenient.
10. **Successful Implementation:** The district achieved **100% of its vaccination target in less than 40 days** by conducting **493 vaccination sessions** through **12 permanent and 27 temporary sites**, covering eligible girls across **893 villages and 190 urban**

Way Forward

1. **Use Data for Complete Coverage:** Government databases should be integrated with regular field verification to identify every eligible beneficiary. Accurate local data can reduce exclusion and improve service delivery.
2. **Promote Behavioural Interventions:** Behavioural and systemic nudges should become part of public health programmes. Counselling, positive messaging and repeated community engagement can improve vaccine acceptance.
3. **Strengthen Community Partnerships:** Local leaders, youth groups, schools, frontline workers and media should continue supporting awareness campaigns. Community participation can reduce stigma and build public confidence.
4. **Integrate Health Services:** HPV vaccination should continue to be linked with routine health programmes. Bundling multiple health services can improve awareness, convenience and overall coverage.
5. **Adapt Strategies to Local Needs:** Implementation should reflect local social and cultural conditions instead of following a uniform approach. Grassroots innovations can help bridge the gap between policy design and field realities.

Conclusion

Mandsaur showed that **data-driven planning, behavioural nudges and community participation** can make HPV vaccination more inclusive and effective. The campaign moved from **coverage to care** and from **data to impact** by reaching vulnerable groups and achieving **100% vaccination coverage**. Its experience highlights the value of locally adapted implementation for delivering preventive healthcare to every eligible beneficiary.

Question for practice:

Discuss the challenges in achieving universal HPV vaccination in India and examine how Mandsaur's model can improve inclusive vaccination coverage.

Source: [The Hindu](#)

Don't Bet on an AI Trickle-Down

UPSC Syllabus: Gs Paper 3- Indian economy and Infrastructure

Introduction

Artificial Intelligence (AI) is no longer following the traditional path where advanced technologies gradually become accessible to everyone. Instead, AI is emerging as a strategic asset shaped by geopolitics, export controls, and selective access. Since AI capabilities improve rapidly, delays in obtaining frontier technologies can create lasting technological gaps. India has made a credible beginning, but securing long-term AI sovereignty will require stronger domestic capabilities and carefully balanced international partnerships.

Why AI is Becoming a Geopolitical Weapon

1. **AI Changes the Nature of Strategic Competition:** AI is not just another technology. It is a **general-purpose technology** that strengthens innovation, economic growth, defence, and decision-making across many sectors.
2. **Control Over AI Creates Strategic Advantage:** Countries leading in frontier AI have strong incentives to restrict access instead of allowing technology to spread freely. This helps them maintain their technological advantage.
3. **Interdependence is Becoming a Tool of Power:** Modern countries increasingly use economic and technological dependence as strategic leverage instead of treating it as mutual cooperation.
4. **Earlier Examples Show the Same Trend:** Countries have increasingly used strategic resources as geopolitical tools. This was seen during **COVID-19 vaccine nationalism**, disruptions around the **Strait of Hormuz**, and export controls on **critical minerals and rare earths**.
5. **Self-Reinforcing AI Advantage:** Frontier AI improves by learning from its own outputs. This allows leading countries to widen their technological lead much faster than in earlier technologies.
6. **Rapid AI Progress Reduces the Value of Waiting:** AI capability improves within months rather than decades. Waiting for technology to naturally become cheaper may leave countries permanently behind.
7. **Technology Trickle-Down Cannot Be Assumed:** The belief that advanced technologies will automatically become available over time is becoming less reliable as strategic competition grows.

How the US is Restricting Access to Frontier AI

1. **Export Controls Extend Beyond Chips:** The **2025 AI Diffusion Framework** placed restrictions not only on advanced chips but also on **AI model weights**, bringing frontier AI under export controls.
2. **Access is Becoming Country-Specific:** Although some rules later became more flexible, access is now decided through **country-by-country discretion**, keeping strategic control intact.
3. **Temporary Model Suspension Showed Real Risks:** Washington directed **Anthropic** to suspend access to its advanced **Mythos** and **Fable** models for users outside the United States. Although access resumed from **July 1**, it demonstrated how quickly access can be withdrawn.
4. **Trusted Partnership Determines Availability:** At the **G7**, frontier AI models were presented as technologies reserved for **trusted partners**, making access dependent on political relationships.
5. **AI Access is Becoming a Strategic Privilege:** Frontier AI is no longer available simply through market demand. Governments can extend or withdraw access based on strategic interests.

6. **Control Now Covers Both Hardware and Software:** Restrictions increasingly apply to both advanced computing hardware and the AI models built on that hardware, strengthening technological control.
7. **Market Forces Alone Cannot Guarantee Access:** Commercial demand is becoming less important than geopolitical considerations in determining who receives frontier AI technologies.

India's Strategic Dilemma in the Emerging AI Order

1. **India is Not at the Frontier of AI Development:** Like Europe, India does not currently possess frontier AI capabilities and remains dependent on access provided by leading AI powers.
2. **China Offers an Alternative AI Ecosystem:** China is promoting **open-weight AI models** that are cheaper and easier to adopt, creating a strong commercial attraction for many countries.
3. **Strategic Dependence Creates New Risks:** Relying on foreign AI systems raises concerns about **data sovereignty, security**, and long-term strategic dependence.
4. **India Faces Pressure From Both Major Powers:** India risks being **restricted by the United States** in accessing frontier AI while becoming increasingly dependent on **Chinese AI ecosystems**.
5. **Commercial Contracts Cannot Remove Geopolitical Risks:** Businesses can manage commercial risks, but they cannot protect themselves when governments impose strategic restrictions on AI technologies.
6. **Limited Domestic Frontier Capability Increases Dependence:** India still relies on foreign frontier AI systems because developing such models requires enormous computing power and sustained investment.
7. **Research Investment Remains Limited:** India spends only about **0.6–0.65% of GDP on research and development**, with the private sector contributing only about one-third of this spending, limiting frontier AI development.
8. **India Cannot Win Through Spending Alone:** The projected **\$50 billion** compute spending of **OpenAI** is more than six times India's annual private R&D spending. India therefore needs strategic partnerships along with stronger domestic capabilities instead of trying to match global leaders financially.

India's Existing Strengths and Ongoing Initiatives

1. **Demographic Advantage:** India has the **world's largest population**, a **median age below 30**, and one of the world's largest software talent pools. These strengths provide a strong foundation for AI development.
2. **Hard Infrastructure is Equally Important:** India's talent must be supported by advanced semiconductors, reliable electricity, data centres, patient risk capital and strong university-industry linkages to build frontier AI.

3. **Dependence on Imported Technology:** India still imports advanced chips instead of manufacturing them domestically. This limits its ability to develop frontier AI independently.
4. **IndiaAI Mission:** The **IndiaAI Mission** has created a shared national compute facility with **more than 34,000 GPUs** and is expanding further through support for startups and universities.
5. **Progress in Indian Language AI:** At the **India AI Impact Summit**, organisations such as **Sarvam** released competitive open AI models designed for Indian languages, improving AI accessibility and local relevance.
6. **Growing AI Talent Base:** India is the **second-largest employer of enterprise AI talent globally**, with **over 250,000 AI/ML professionals** working in Global Capability Centres (GCCs), strengthening its long-term AI ecosystem.

What India Must Do to Achieve AI Sovereignty

1. **Prepare for AI Supply Disruptions:** India should prepare for a future where advanced AI models or chips may become unavailable because of geopolitical decisions rather than market forces.
2. **Secure Long-Term AI Access:** India should seek **binding guarantees** for access to advanced compute and frontier AI models instead of relying on temporary political goodwill.
3. **Diversify Strategic Partnerships:** Stronger cooperation with **Europe** and other middle powers can reduce excessive dependence on a single AI ecosystem.
4. **Build Domestic Semiconductor Capacity:** Faster development of semiconductor manufacturing will reduce India's dependence on imported silicon and strengthen technological sovereignty.
5. **Expand Compute Infrastructure:** India should accelerate investment in reliable electricity, data centres, and high-performance computing infrastructure needed for frontier AI.
6. **Strengthen Research and Innovation:** Greater investment in universities, research institutions, talent development, and patient capital is essential because frontier AI requires long-term scientific capability.
7. **Reduce Strategic Dependence:** India should steadily reduce dependence on foreign AI technologies while remaining connected to global innovation and technology networks.
8. **Promote Open AI Models:** Open models can reduce reliance on foreign APIs, lower costs, improve transparency, and better support Indian languages and local applications.
9. **Develop Sovereign AI Infrastructure:** India should build the capacity to host and operate large language models within the country to improve strategic control and technical expertise.
10. **Balance Globalisation with Industrial Policy:** International partnerships and domestic industrial policies should complement each other. Both are necessary to build a resilient AI ecosystem.

11. **Learn from Other Sectors:** India's continued dependence on imported pharmaceutical ingredients despite domestic incentives shows that industrial policy builds capability over time but cannot provide immediate strategic resilience.
12. **Act Within the Closing Opportunity Window:** AI leadership is built through continuous investment over many years. Delaying action today could make catching up much harder as technological advantages grow rapidly.

Conclusion

The global AI landscape is shifting from technology diffusion to strategic control. India possesses talent, growing capabilities, and a credible foundation, but these advantages must translate into technological self-reliance. Timely investment in research, infrastructure, and trusted partnerships will determine whether India becomes a frontier AI developer or remains dependent on external technological powers.

Question for practice:

Examine the emerging geopolitical challenges in the global AI landscape and discuss the measures required for India to achieve AI sovereignty.

Source: [Indian Express](#)

Building water security in a rapidly drying India

Source: The post “Building water security in a rapidly drying India” has been created based on “Building water security in a rapidly drying India” published in “The Hindu” on 4th July 2026.

UPSC Syllabus: GS 2-Governance

Context: India is facing an increasing water security crisis due to climate change, uneven distribution of water resources, and inadequate water management. With only **4% of the world's freshwater resources supporting 18% of the global population**, strengthening water security is essential for sustainable development, economic growth, and environmental conservation.

Major Challenges to Water Security in India

1. Rising water stress in cities

- a. Indian cities such as **Bengaluru, Mussoorie, and Delhi** are experiencing severe water shortages.
- b. A **monsoon rainfall deficit of more than 40% in June** has further intensified the water crisis.
- c. Delhi is currently receiving only about **70% of its total daily water requirement**.

2. Increasing water scarcity in river basins

- a. According to the **Council on Energy, Environment and Water (CEEW)**, **11 out of 15 major river basins** in India are experiencing water stress.
- b. River basins such as the **Krishna, Cauvery, Mahi, and Tapi** have crossed the water scarcity threshold, with annual water availability falling below **1,000 cubic metres per person**.

3. Global water insecurity is worsening

- a. The **United Nations University Institute for Water, Environment and Health (UNU-INWEH)** has warned about the possibility of global water bankruptcy.
- b. Several river basins across the world have become polluted and no longer discharge water into the sea.
- c. Aquifers are being depleted beyond sustainable limits.
- d. Nearly **four billion people** face severe water scarcity for at least one month every year.

4. Gaps in water infrastructure and governance

- a. Existing water supply infrastructure is poorly maintained in many parts of the country.
- b. Wastewater treatment facilities remain inadequate.
- c. Large quantities of water are lost during distribution because of high conveyance losses.
- d. Water pollution remains widespread, while low cost recovery affects the financial sustainability of water services.

Measures to Build Water Security in India

1. Invest in climate-resilient water infrastructure

- a. Governments should undertake detailed climate risk assessments of water infrastructure and services.
- b. Investments should be prioritised in high-risk areas, including coastal regions, flood-prone areas, and places with critical infrastructure such as schools and hospitals.
- c. Urban Local Bodies and Panchayats should utilise schemes such as the **Urban Challenge Fund** to finance these assessments.
- d. For example, **Visakhapatnam** has received **₹1,501 crore** under the Urban Challenge Fund for improving water supply and drainage systems.

2. Promote reuse of treated wastewater

- a. India should shift from a linear model of water use to a circular water economy by reusing treated wastewater.
- b. Treated wastewater should be used for non-potable purposes such as construction, landscaping, car washing, and cooling of data centres.
- c. Every city should prepare a comprehensive wastewater reuse plan.
- d. The **Thane Municipal Corporation** is using treated wastewater to reduce its freshwater deficit and generate additional revenue.
- e. According to **CEEW**, treated wastewater reuse can create an economic opportunity of about **₹3 lakh crore** and generate nearly **one lakh additional jobs by 2047**.

3. Expand micro-irrigation systems

- a. The coverage of drip and sprinkler irrigation should be increased beyond the present **20%** of the country's irrigation potential.
- b. Subsidies should be redesigned to make micro-irrigation affordable for small and marginal farmers by considering **0.4 hectares** as the base unit.
- c. Farmers should be encouraged to shift towards **low-water, high-value crops** such as horticulture and oilseeds.

- d. The **Pradhan Mantri Fasal Bima Yojana** should be strengthened by providing affordable insurance and ensuring faster settlement of claims.

4. Strengthen water data and monitoring systems

- a. India should generate reliable data on water withdrawals, losses, and consumption at the river basin level.
- b. Artificial Intelligence should be used to monitor water conveyance infrastructure and identify leakages.
- c. Smart bulk water meters and smart consumer water meters should be installed to improve water accounting and reduce losses.
- d. The successful rollout of over **4.93 crore smart electricity meters** can serve as a model for the water sector.

Conclusion: Water is a critical economic and environmental resource that supports human well-being, livelihoods, and ecosystems. India can achieve long-term water security by investing in climate-resilient infrastructure, promoting wastewater reuse, expanding efficient irrigation systems, strengthening water data systems, and ensuring political commitment, transparent governance, and public participation.

Question: India is facing a growing water security crisis due to climate change, inadequate infrastructure, and poor water governance. Discuss the major challenges and suggest measures to build a water-secure India.

Source: [The Hindu](#)

Counting cancer: On making cancer a notifiable disease in India

Source: The post “Counting cancer: On making cancer a notifiable disease in India” has been created based on “Counting cancer: On making cancer a notifiable disease in India” published in “The Hindu” on 4th July 2026.

UPSC Syllabus: GS 3-Science and Technology

Context: Cancer is emerging as a major public health challenge in India. However, it is **not a nationally notifiable disease**, resulting in incomplete and fragmented data on the disease burden. Making cancer a nationally notifiable disease can enable evidence-based policymaking and strengthen cancer control efforts.

Need to Make Cancer a Nationally Notifiable Disease

1. Rising cancer burden

- a. The **Global Cancer Observatory** projects that cancer cases in India will increase from **1.41 million in 2022 to 2.46 million by 2045**, representing a rise of over **74%**.
- b. The increase is driven by longer life expectancy, an ageing population, and changing lifestyles and dietary habits.

2. Inadequate national data

- a. Population-based and hospital-based cancer registries currently cover only **10–16% of the population**.

- b. These registries are mainly concentrated in urban areas and government healthcare institutions.

3. Poor coverage of private healthcare data

- a. A significant share of cancer treatment is provided by the private healthcare sector.
- b. Since reporting is not mandatory, many cancer cases are not captured in national databases.

4. Need for evidence-based policymaking

- a. Comprehensive data will help the government formulate effective prevention, screening, treatment, and awareness programmes.
- b. Accurate data will improve healthcare planning and resource allocation.

Challenges

1. Absence of national legal mandate: Cancer is not classified as a nationally notifiable disease because the current policy mainly restricts notification to communicable diseases.

2. Limited coverage of cancer registries: Existing registries cover only a small proportion of the population and have an urban and government hospital bias.

3. Inadequate reporting from the private sector: Private hospitals and diagnostic centres do not uniformly report cancer cases, resulting in fragmented data.

4. Initial surge in reported cases: National notification will lead to a sudden increase in recorded cases, which may create administrative and resource challenges in the short term.

Way Forward

1. Make cancer a nationally notifiable disease: The Union Government should mandate reporting of every diagnosed cancer case across all States and Union Territories.

2. Integrate public and private healthcare reporting: All public and private hospitals, laboratories, and diagnostic centres should be required to report cancer cases through a uniform national system.

3. Strengthen cancer surveillance: Existing population-based and hospital-based cancer registries should be expanded to ensure wider geographical and population coverage.

4. Adopt evidence-based cancer control measures: Reliable national data should be used to strengthen cancer prevention, screening, treatment, and rehabilitation programmes.

5. Improve Information, Education, and Communication (IEC): Disease data should be utilised to design targeted awareness campaigns for high-risk populations and encourage early diagnosis.

6. Implement ICMR recommendations: The Centre should implement the recommendation of the **ICMR–National Centre for Disease Informatics and Research (NCDIR)** to make cancer a nationally notifiable disease.

Conclusion: Making cancer a nationally notifiable disease will provide India with comprehensive and reliable data to strengthen surveillance, policy formulation, and healthcare planning. Learning from the **17 States** that have already adopted this measure, the Centre should establish a nationwide notification system to build an evidence-based and effective cancer control programme.

Question: Making cancer a nationally notifiable disease can strengthen India's cancer control strategy. Discuss the need, challenges, and the way forward

Source: [The Hindu](#)

The Iran Conundrum and the Decline of the West

UPSC Syllabus: Gs Paper 2- International Relation

Introduction

Since **1945**, the **United States and Western Europe** have largely shaped the international order through their military strength, technological leadership, and financial influence. However, the rise of **China**, the growing role of **middle powers**, and the recent **U.S.-Iran conflict** have raised fresh questions about the durability of Western dominance. The conflict has become an important geopolitical event with implications for regional stability, global power equations, and the evolving international order.

The Iran Conflict and the Erosion of Western Dominance

1. **Post-war Western dominance under pressure:** Since the Second World War, the U.S. and Western Europe have led world affairs through superior military capability, technology, and economic influence. This dominance is now being challenged by the rise of China and other emerging powers.
2. **China's rise weakened Western supremacy:** China's technological progress, innovation, and control over important strategic resources have reduced the relative influence of the U.S. Although the U.S. remains a major power, its unquestioned leadership has weakened.
3. **Iran exposed U.S. strategic vulnerabilities:** Many expected only another major power to challenge the U.S. Instead, Iran demonstrated that even a heavily sanctioned regional power could significantly affect the image of American supremacy.
4. **Resilience proved stronger than military superiority:** Iran's long experience during the **Iran-Iraq War (1980-1988)** built strong political resilience and determination. The U.S. underestimated this capacity, making it difficult to achieve its strategic objectives despite overwhelming military strength.
5. **Military prestige suffered during the conflict:** Reports that Iran successfully targeted advanced U.S. military assets, including an **F-35 stealth aircraft**, and forced American naval deployments to safer locations weakened the long-standing image of U.S. military invincibility.
6. **Conflict accelerated doubts about U.S. leadership:** The eventual need for negotiations instead of a decisive military outcome strengthened the perception that military superiority alone can no longer guarantee political success in international conflicts.

The New U.S.-Iran Understanding

1. **Initial agreement ended active hostilities:** Before formal negotiations, both countries reached an **initial agreement in mid-June 2026** to stop the conflict and reopen the **Strait of Hormuz**. This created conditions for further diplomatic engagement despite continuing disagreements.
2. **Versailles Memorandum drew criticism:** A **14-point Memorandum of Understanding**, signed on **June 17, 2026**, at the **Palace of Versailles**, was compared with the **1919 Treaty of Versailles**. Critics argued that it mainly restored the earlier situation instead of creating a meaningful breakthrough.
3. **Agreement focused on practical issues:** The framework included reopening the **Strait of Hormuz**, ending the U.S. blockade, discussing reconstruction worth nearly **\$300 billion**, and Iran's reported commitment not to develop nuclear weapons. However, the U.S. clarified that direct American funds would not be provided to Iran.
4. **Nuclear commitments remained unclear:** The U.S. claimed that Iran accepted the return of **International Atomic Energy Agency (IAEA)** inspectors. Iran, however, stated that it had made **no new commitments**, leaving uncertainty over future nuclear monitoring.
5. **Sanctions relief reflected changing realities:** The U.S. eased restrictions on Iranian oil exports by lifting some sanctions and issuing a **60-day waiver** for crude oil sales. Reports also suggested temporary relaxation of restrictions on Russian oil, showing adjustments driven by strategic and economic pressures.
6. **Deal offered limited gains for the U.S.:** Many observers viewed the agreement as a necessary truce rather than an American victory. International criticism suggested that the settlement delivered few tangible benefits while reducing the image of U.S. strategic dominance.
7. **Unresolved issues remained significant:** Questions continued over maritime safety, naval protection, emergency response mechanisms, and Iran's possible role in managing traffic through the **Strait of Hormuz**, including the possibility of charging transit fees.

Changing Geopolitical Equations in West Asia

1. **U.S.-Israel relations entered a difficult phase:** The agreement created visible differences between Washington and Tel Aviv. Israel's objective of decisively weakening Iran was not achieved, creating tensions in the strategic partnership between the two countries.
2. **Regional power balance began to shift:** Iran emerged from the conflict with greater political confidence despite suffering heavy damage. This altered regional calculations and strengthened its position in West Asian politics.
3. **Iran's internal power structure changed:** The growing influence of the **Islamic Revolutionary Guard Corps (IRGC)**, along with the rise of **Mojtaba Khamenei** after the death of **Ayatollah Ali Khamenei**, could shape a more assertive political and security approach within Iran.

4. **Energy routes gained greater strategic importance:** Iran demonstrated its ability to influence the global energy market through the **Strait of Hormuz**. Temporary disruption of shipping contributed to oil prices rising above **USD 110 per barrel**, highlighting the region's importance for global energy security.
5. **Gulf countries reassessed security partnerships:** As American influence appeared to weaken, Gulf nations began questioning their long-term dependence on U.S. security guarantees against regional threats, including a stronger Iran.
6. **External powers gained limited strategic advantage:** Although **Russia** and **China** expressed support for Iran, neither secured major geopolitical gains from the conflict. The main outcome was a more uncertain regional balance rather than the emergence of a clear new leader.
7. **Growing uncertainty reshaped regional diplomacy:** The conflict demonstrated that future stability in West Asia will depend less on military dominance and more on political negotiations, regional balancing, and strategic adaptability.

Emerging Regional and Global Security Challenges

1. **Rise of hardliners in Iran:** The agreement may strengthen Iranian hardliners who believe they forced the U.S. to compromise. This could encourage a more aggressive approach towards **Israel**, the **U.S.**, neighbouring Arab countries, and even domestic political opponents.
2. **Expanding role of the IRGC:** The growing influence of the **Islamic Revolutionary Guard Corps (IRGC)** could increase its role in shaping Iran's security and foreign policy. A leadership closely linked with the IRGC may make regional tensions more difficult to manage.
3. **Risk of renewed regional conflicts:** Iran may become more confident after the conflict and adopt a more assertive regional policy. This could increase the chances of fresh confrontations with **Israel** and several Arab countries.
4. **Israel's response may deepen instability:** Israel may react more aggressively after failing to achieve its strategic objectives against Iran. Such actions could increase military tensions and weaken the fragile peace created after the **Abraham Accords**.
5. **Growing sectarian tensions:** A stronger Iran could influence countries with large **Shia** populations, including **India**. This raises concerns over the possible rise of **Shia-Sunni** tensions in different regions.
6. **Energy security remains vulnerable:** Although the **Strait of Hormuz** reopened, concerns continue over shipping safety, naval protection, emergency response, and uninterrupted energy supplies. Any future disruption could again affect global oil markets.
7. **Questions over U.S. security commitments:** The conflict has encouraged Gulf countries to reconsider their dependence on American military protection. There could also be increasing demands to reduce the presence of U.S. troops in West Asia.

8. **Possibility of extremist revival:** Continued instability may create space for organised terrorist groups such as **al Qaeda** to regain strength. Such groups could expand their activities across **West Asia, Africa, Europe, and parts of Asia**, creating wider international security challenges.

Lessons for the Emerging Multipolar Order

1. **Military superiority alone is no longer enough:** The conflict showed that advanced military technology does not always ensure political success. Strategic resilience, economic pressure, and sustained resistance can influence the final outcome of a conflict.
2. **Negotiations remain essential:** Despite military confrontation, both sides eventually returned to dialogue. The agreement highlighted that diplomacy remains necessary even after intense conflict.
3. **Regional powers now shape global politics:** The conflict demonstrated that countries such as **Iran** can influence international politics beyond their military or economic size. Regional powers are becoming more important in a changing global order.
4. **Energy security has become a strategic tool:** Iran's ability to affect the **Strait of Hormuz** showed how control over key energy routes can influence global markets and international decision-making.
5. **Global power is becoming more dispersed:** The conflict reflected the gradual movement from a largely U.S.-led international system towards a more contested and multipolar order. No single country can now shape global outcomes without considering regional powers.
6. **Future conflicts may become more complex:** The interaction of military competition, economic sanctions, energy security, and regional rivalries shows that future geopolitical crises will involve multiple dimensions rather than conventional warfare alone.

Conclusion

The **U.S.-Iran conflict** reflects the gradual decline of unquestioned Western dominance and the emergence of a more contested global order. It shows that military superiority alone cannot always achieve political objectives. The conflict has reshaped strategic calculations in **West Asia**, while increasing uncertainty over regional security, energy supplies, and global stability. Future peace will depend on sustained diplomacy, regional dialogue, and responsible management of geopolitical rivalries.

Question for practice:

Examine how the recent U.S.-Iran conflict reflects the changing global order and its implications for West Asian geopolitics and international security

Source: [The Hindu](#)

How the American Revolution Led to the Making of the United States

UPSC Syllabus: Gs Paper 1- World History

Introduction

The **American Revolution (1775–1783)** transformed the **13 British colonies** into the **independent United States of America**. It began as resistance to growing British taxation and tighter imperial control after decades of colonial self-government. Over time, the movement developed into a struggle for **liberty, representative government, and natural rights**. The **Declaration of Independence (1776)** gave this struggle a clear political vision and laid the foundation for a new democratic nation.

Colonial Background and Growing British Control

1. **Formation of the British Colonies:** From the **1600s**, people from England and other European countries settled in North America. They established colonies on land where Indigenous communities had lived for centuries.
2. **Growth of the Thirteen Colonies:** By **1763**, Britain controlled **13 colonies** along the Atlantic coast. These colonies became economically important and developed their own local society.
3. **Colonial Self-Government:** Before the **1760s**, Britain exercised limited control because the colonies were over **3,000 miles (5,000 km)** away. The colonies managed many of their own affairs through local assemblies and leaders.
4. **Strategic Importance of North America:** North America became a region of competition among European powers. Britain therefore tried to strengthen its political and economic control over the colonies.
5. **Seven Years' War and Its Impact:** The **Seven Years' War (1756–1763)** was fought mainly between **Britain and France** for control over colonies and trade. Although Britain won, the war created huge debts, leading it to collect more revenue from the American colonies.
6. **Expansion of Parliamentary Authority:** To recover war expenses and tighten imperial control, Parliament passed measures such as the **Sugar Act (1764)** and later the **Tea Act (1773)**. These laws increased British interference in colonial affairs.
7. **Growing Colonial Discontent:** Many colonists believed Britain was reducing the freedoms they had enjoyed for decades. They increasingly viewed these policies as a threat to their liberty.

Causes of the American Revolution

1. **Taxation without Representation:** The colonists argued that Parliament could not tax them because they had **no representatives** in it. "**No taxation without representation**" became the central slogan of the movement.
2. **Stamp Act (1765):** The **Stamp Act** imposed taxes on newspapers, legal documents, licences, and other printed material. It became Parliament's first attempt to raise revenue through direct taxation in the colonies.
3. **Challenge to Colonial Authority:** The Stamp Act reduced the financial authority of colonial leaders. It also deepened the dispute over who had the right to govern the colonies.
4. **Townshend Acts (1767):** Parliament imposed new taxes on imported goods such as **tea, glass, paper, paint, and lead**. These taxes encouraged widespread protests and boycotts of British goods.

5. **Tea Act (1773):** The **Tea Act** allowed the **East India Company** to sell tea cheaply in the colonies through tax benefits. Colonists believed purchasing this tea would recognise Parliament's right to tax them.
6. **Different Views of the British Empire:** Many American leaders believed the colonies were equal partners within the British Empire and deserved the same rights as people in Britain. The British government maintained that Parliament had complete authority over the colonies.
7. **Rise of the Liberty Movement:** **Liberty** became the main idea behind colonial resistance. Protesters used symbols such as the **Liberty Tree**, while organisations like the **Sons of Liberty** gained support from craftsmen, labourers, and sailors.
8. **Role of Women in Resistance:** Women supported the movement by spinning cloth at home and encouraging the boycott of British goods. They became known as the **Daughters of Liberty**.

Major Events that Escalated the Conflict

1. **Stamp Act Protests:** Colonists organised widespread protests against the Stamp Act, forcing Britain to repeal it in **1766**. However, disagreements over taxation continued.
2. **Boston Massacre Increased Anger:** On **March 5, 1770**, British soldiers fired into a crowd in Boston, killing several people, including **Crispus Attucks, a dockworker of African and Native American ancestry who is widely regarded as the first martyr of the American Revolution**. The incident deepened hostility towards British rule.
3. **Boston Tea Party Became the Turning Point:** The **Tea Act (1773)** gave the **East India Company** special benefits to sell cheap tea. On **December 16, 1773**, colonists threw **more than 300 chests of tea** into Boston Harbour, causing a loss of about **£10,000 (equivalent to over US\$4 million today)**.
4. **Intolerable Acts (1774):** Britain punished the colonies by passing the **Intolerable Acts**, closing **Boston Port** and placing **Massachusetts under military rule**. Instead of weakening resistance, these measures united the colonies.
5. **First Continental Congress:** In **September 1774**, leaders from **12 colonies** met in **Philadelphia** to coordinate resistance against British policies. **Georgia** did not participate.
6. **Second Continental Congress:** In **May 1775**, the Congress created a continental army and appointed **George Washington** as its commander to lead the colonial forces.
7. **Olive Branch Petition:** The Congress made one final attempt to restore peace through the **Olive Branch Petition** in **July 1775**. Britain rejected the proposal, making armed conflict unavoidable.

Declaration of Independence and Birth of the United States

1. **Decision to Become Independent:** On **2 July 1776**, the Continental Congress formally declared the colonies independent from Britain. Two days later, on **4 July 1776**, it approved the **Declaration of Independence**.
2. **Adoption of the Declaration:** The Declaration was signed by **56 delegates**, who later became known as the **Founding Fathers** of the United States.

3. **Role of Thomas Jefferson:** Thomas Jefferson prepared the main draft, which was revised and approved by the Continental Congress. It became one of the most influential political documents in history.
4. **Justification for Independence:** The Declaration listed several grievances against King George III to explain why the colonies were separating from Britain.
5. **Natural Rights:** It declared that all men are created equal and possess unalienable rights, including Life, Liberty, and the pursuit of Happiness.
6. **Government by Consent:** The Declaration stated that governments receive their authority from the consent of the governed. If a government destroys people's rights, citizens have the right to change or abolish it.
7. **Foundation of the United States:** The Declaration gave the new nation a clear political and ideological foundation. It transformed the colonial struggle into the birth of the United States of America.

Victory and International Recognition

1. **Continuation of the Revolutionary War:** After the Declaration of Independence (1776), the conflict continued as the American colonies fought Britain to secure complete independence. The struggle lasted until 1783.
2. **George Washington's Leadership:** George Washington was appointed Commander-in-Chief of the Continental Army in 1775 and led the colonial forces throughout the Revolutionary War. His leadership helped unite the colonies during a difficult military campaign.
3. **Support from France:** France provided military, financial, and naval assistance to the American colonies. Its support greatly strengthened the revolutionary cause.
4. **Support from Spain and the Dutch Republic:** Spain and the Dutch Republic, both rivals of Britain, also supported the American struggle. Their assistance weakened Britain's position during the war.
5. **Treaty of Paris (1783):** The Treaty of Paris (1783) officially ended the American Revolutionary War. Britain formally recognised the independence of the United States through this treaty.
6. **Emergence of a Sovereign Nation:** International recognition completed the transition from 13 British colonies to an independent country. The United States entered the international system as a sovereign nation.

Impact and Historical Significance

1. **Birth of a New Republic:** The Revolution created the United States of America, ending British colonial rule. It established an independent republic based on representative government.
2. **Natural Rights Became a Political Principle:** The ideas of Life, Liberty, and the pursuit of Happiness became central to the country's political identity. These principles shaped future democratic institutions.

3. **Popular Sovereignty:** The Revolution established that governments derive their authority from the **consent of the governed**. Political power was seen as belonging to the people rather than the ruler.
4. **Right to Resist Oppression:** The Declaration recognised the people's right to replace governments that violate their rights. This became an important democratic principle.
5. **Global Influence of the Revolution:** The American Revolution inspired later struggles for **national independence** and **social equality** across many parts of the world.
6. **Lasting Influence of Liberty:** The Revolution made liberty the defining value of the new nation. Its ideas continued to influence American political life and constitutional development.

Limits and Contradictions of the Revolution

1. **Loss of Native American Lands:** American independence resulted in the expansion of settlement into Indigenous territories. Many Native American communities lost their land after the Revolution.
2. **Slavery Continued:** The promise of liberty existed alongside slavery. **Thomas Jefferson** himself owned **more than 100 slaves**.
3. **Freedom for Some Enslaved People:** Some enslaved people gained freedom by joining the conflict, especially those who escaped to British forces.
4. **Language of Liberty Inspired Resistance:** Enslaved communities later used the Revolution's ideas to demand equal rights.
5. **Women Remained Excluded:** Women did not receive political rights despite the Revolution's language of equality.
6. **Delayed End of Slavery:** Slavery continued, especially in the South, until the **13th Amendment (1865)** abolished it.

Conclusion

The American Revolution transformed **13 British colonies** into the **United States of America** through the struggle against British rule. It established the ideals of **liberty, natural rights, representative government, popular sovereignty, and government by consent** as the foundation of the new nation. However, these rights did not immediately extend to **Native Americans, enslaved people, and women**. Despite these limitations, the Revolution inspired democratic governance and later movements for national independence and social justice across the world.

Question for practice:

Evaluate how the American Revolution transformed the thirteen British colonies into the independent United States while shaping the ideals of liberty, representative government, and popular sovereignty.

Source: [Indian Express](#)

AI is reshaping warfare: How India can keep pace

Source: The post “AI is reshaping warfare: How India can keep pace” has been created based on “AI is reshaping warfare: How India can keep pace” published in “Indian Express” on 6th July 2026.

UPSC Syllabus: GS 3 -Science & Technology

Context: Artificial Intelligence (AI), military autonomy and algorithmic warfare are redefining modern warfare by integrating software, autonomous systems and data-driven decision-making into combat operations. These technologies are increasing battlefield speed, precision and lethality, making them central to future warfare and deterrence.

How AI, autonomy and algorithmic warfare are reshaping warfare

1. AI-enabled systems integrate data from multiple sources to provide commanders with real-time battlefield awareness and faster decision-making.
2. AI-driven "kill webs" compress the time between target detection and engagement from hours to a few minutes.
3. Drone warfare has emerged as a major technological revolution, with drones performing surveillance, target acquisition, logistics support and casualty evacuation.
4. Autonomous platforms are increasingly replacing humans in combat roles across land, air and sea domains.
5. AI-powered collaborative combat aircraft indicate a shift towards man-machine teaming in future air warfare.
6. Software innovations are occurring much faster than hardware development, making software a decisive factor in military capability.
7. Defence innovation is increasingly driven by agile technology startups alongside traditional defence industries.

Global examples highlighting the transformation

1. **Ukraine:** AI-enabled Delta platform integrates radar, imagery and social media inputs to create an intelligent battlefield network linked with drones.
2. **Russia-Ukraine conflict:** Drone-dominated battlefields have reduced the role of tanks and artillery, creating heavily contested "death zones."
3. **Venezuela:** AI tools provided intelligence on leadership movements and supported synchronised electronic, cyber and special forces operations.
4. **Iran:** AI-enabled targeting packages enabled machine-speed identification and precision strikes against leadership targets.

Challenges for India

1. India lacks an indigenous AI-enabled battlefield data integration platform comparable to Delta.
2. Limited integration of AI, autonomous systems and software into military operations.
3. Insufficient domestic capability in autonomous drone swarm technologies.
4. Need to rapidly scale indigenous drone manufacturing and deployment.
5. Inadequate deployment of advanced counter-drone systems against evolving drone threats.
6. Limited Low Earth Orbit (LEO) surveillance infrastructure for persistent offensive ISR.

7. Defence procurement remains platform-centric, whereas future warfare increasingly depends on software-driven capabilities.
8. Slow institutional adaptation to the rapid pace of technological innovation compared to global competitors.

Measures India should adopt

1. Develop an indigenous AI-enabled battlefield data analytics platform similar to Delta.
2. Create autonomous software for drone swarm coordination, target identification and engagement.
3. Build a large inventory of drones with a target of five million drones by 2028.
4. Deploy counter-drone systems, including laser and microwave weapons, supported by dedicated drone-hunting teams.
5. Establish AI-enabled drone "kill webs" along the Line of Control (LoC) and Line of Actual Control (LAC).
6. Expand India's Low Earth Orbit (LEO) satellite presence for offensive intelligence, surveillance and reconnaissance (ISR).
7. Allocate a significant share of defence modernisation expenditure towards technological and software-based capabilities.
8. Transform the Ministry of Defence from primarily a platform and weapons organisation into a software-driven enterprise.

Conclusion: India is witnessing a transformative phase in military affairs comparable to a "Manhattan Project" moment in warfare. Timely adoption of sovereign AI capabilities, autonomous systems and algorithmic warfare will strengthen India's combat effectiveness, enhance deterrence against adversaries and ensure technological self-reliance in future conflicts.

Question: Artificial Intelligence (AI), military autonomy and algorithmic warfare are transforming the nature of modern warfare. Discuss the implications of this transformation and suggest the measures India should adopt to keep pace.

Source: [Indian Express](#)

Two together: on the Japanese Prime Minister's visit to India

Source: The post "Two together: on the Japanese Prime Minister's visit to India" has been created based on "Two together: on the Japanese Prime Minister's visit to India" published in "The Hindu" on 6th July 2026.

UPSC Syllabus: GS 2 -International Relations

Context: India and Japan have strengthened their strategic partnership in response to evolving geopolitical uncertainties in the Indo-Pacific. Their focus is increasingly on deepening bilateral cooperation while insulating their partnership from uncertainties surrounding multilateral groupings.

Recent developments in India-Japan relations

1. India and Japan reaffirmed their commitment to an updated **Free and Open Indo-Pacific (FOIP)** vision.

2. Both countries signed **16 agreements**, including cooperation on **energy resilience**.
3. Agreed to strengthen cooperation across the **maritime energy transport value chain**.
4. Decided to develop **naval platforms** to improve maritime domain awareness and surveillance.
5. Expressed shared concerns over developments in the **South China Sea** and **East China Sea**.
6. Reaffirmed the importance of maintaining peace and stability in the **Taiwan Strait**.
7. Japan highlighted greater engagement with **India's North-East** through regional connectivity.
8. Recognised **BIMSTEC** as an important platform for regional cooperation.
9. Proposed linking Japan's investments in **Bangladesh** and **Thailand** with India's North-East through industrial value chains.

Significance of the partnership

1. Strengthens maritime security and ensures secure sea lanes in the Indo-Pacific.
2. Enhances energy security by safeguarding access to Gulf energy supplies.
3. Promotes regional connectivity and economic integration in the Bay of Bengal region.
4. Expands strategic cooperation beyond defence into technology, infrastructure and energy.
5. Supports a rules-based and inclusive Indo-Pacific order.

Challenges

1. Uncertainty regarding the future role of the **Quad** and evolving U.S. Indo-Pacific strategy.
2. Rising geopolitical tensions involving China in the South China Sea and East China Sea.
3. Need to balance relations with both the **United States** and **China** while protecting strategic interests.
4. Regional security risks affecting maritime trade and energy supply chains.
5. Managing multiple bilateral and multilateral partnerships simultaneously.

Way forward

1. Deepen bilateral cooperation independent of changing multilateral dynamics.
2. Expand collaboration in maritime security, energy resilience and emerging technologies.
3. Strengthen connectivity through India's North-East and the Bay of Bengal region.
4. Enhance cooperation through **BIMSTEC** and other regional mechanisms.
5. Continue strategic dialogue to maintain a stable, secure and rules-based **Indo-Pacific**.

Conclusion: India and Japan have emerged as key strategic partners in promoting stability, connectivity and prosperity in the Indo-Pacific. By strengthening bilateral cooperation while effectively managing relations with major powers, both countries can contribute to a secure and resilient regional order.

Question: India-Japan relations have acquired greater strategic significance amid changing geopolitical realities in the Indo-Pacific. Discuss the recent developments, challenges and the way forward.

Source: [The Hindu](#)

Hormuz to Home, India's Resilience in Uncertain Times

UPSC Syllabus: Gs Paper 3- Indian economy and infrastructure

Introduction

The Strait of Hormuz is one of the world's most critical maritime routes, carrying nearly one-fifth of global oil consumption. Any disruption affects energy supplies, shipping, freight and international trade. As India imports nearly 90% of its crude oil, tensions in West Asia exposed its vulnerability to external shocks. The crisis also demonstrated how coordinated institutions, sound policies and long-term investments can strengthen national resilience while sustaining economic stability and energy security.

Immediate Response to the Maritime Crisis

1. **Strategic Importance of Hormuz:** The Strait of Hormuz is a vital global energy corridor. Any disruption immediately affects international shipping, commodity markets and energy security.
2. **Impact on Maritime Trade:** Rising tensions created uncertainty in navigation, delayed commercial operations and increased freight and insurance costs.
3. **Safe Movement of Indian Vessels:** Indian authorities continuously coordinated with shipping companies, maritime authorities, diplomatic channels and international partners to ensure the safe passage of Indian-flagged vessels.
4. **Protection of Indian Seafarers:** The government remained focused on the safety and welfare of Indian crew members working in one of the world's most challenging shipping environments.
5. **Confidence Through Coordination:** Timely government intervention reduced uncertainty and restored confidence among shipping operators despite rapidly changing conditions.
6. **Improved Institutional Response:** India's handling of the crisis reflected greater coordination, agility and strategic planning in responding to external shocks.
7. **Experience from Earlier Crises:** Institutional capacity developed during the **COVID-19 pandemic**, global supply chain disruptions and earlier geopolitical crises strengthened India's response mechanism.

Managing Energy Security and Economic Stability

1. **High Dependence on Imported Crude:** India imports **nearly 90% of its crude oil**, making it highly vulnerable to disruptions in energy-producing regions.
2. **Economic Risks from Global Disruptions:** Rising crude oil prices, higher freight charges and shipping delays had the potential to increase inflation and create economic uncertainty.
3. **Macroeconomic Resilience:** Despite these pressures, inflation broadly remained within the **Reserve Bank of India's (RBI) target band**, while India continued to remain the **fastest-growing major economy**.
4. **Balanced Energy Management:** The government adopted a calibrated strategy that protected consumers while maintaining overall macroeconomic stability.
5. **Diversified Crude Supplies:** Supply diversification reduced dependence on a single region and improved India's ability to manage external disruptions.

6. **Inventory Management:** Strategic inventory planning and coordination with public sector energy companies ensured uninterrupted availability of petroleum products.
7. **Prudent Fuel Price Management:** Retail fuel prices were managed carefully, preventing sudden price shocks and helping moderate inflationary pressure.
8. **Domestic Growth Drivers:** Strong domestic demand, public investment and expanding manufacturing supported economic growth despite global uncertainty.

Government Initiatives and Institutional Coordination

1. **Whole-of-Government Approach:** Ministries, State governments, municipal authorities, oil marketing companies and industry associations worked together to minimise disruptions and ensure continuous energy supplies.
2. **Expansion of Gas Infrastructure:** Sustained investment expanded India's **City Gas Distribution** network from **55 geographical areas in 2014 to over 300**, improving access to cleaner fuels.
3. **Promotion of Piped Natural Gas:** The government encouraged the use of **Piped Natural Gas (PNG)** wherever infrastructure was available, improving flexibility during the crisis.
4. **Support for Exporters:** Exporters affected by higher freight charges, insurance costs and shipping delays received liquidity support, logistics facilitation and simplified customs procedures.
5. **Strong Export Performance:** These measures helped businesses continue serving global markets, contributing to **16% merchandise export growth during April-May FY27**.
6. **RBI's Financial Measures:** Comfortable liquidity, forex swap facilities, support for foreign currency deposits from **Non-Resident Indians (NRIs)** and tax rationalisation for **Foreign Portfolio Investors (FPIs)** strengthened financial stability and the external sector.
7. **Coal Gasification Programme:** The Union Cabinet approved a **₹37,500 crore** scheme to promote surface coal and lignite gasification, targeting **100 million tonnes annually by 2030** to improve long-term energy security.
8. **Investment Incentives:** The scheme provides financial support of up to **20% of plant and machinery costs** and extends coal linkage tenure to **30 years**, encouraging long-term industrial investment.
9. **Scaling Indigenous Innovation:** The **Centre for High Technology** approved scaling up indigenous **Dimethyl Ether (DME)** technology, showing how earlier scientific investments can support national resilience.

Building Industrial and Technological Resilience

1. **Diversified Crude Sourcing:** India nearly **tripled its crude supplier base** over the last two decades. This enabled refineries to quickly shift imports to the Americas, Atlantic Basin, West Africa, Russia and West Asia after the Hormuz disruption.

2. **Indigenous Refinery Capability:** Continuous investment in research, metallurgy, process innovation and workforce training enabled Indian refineries to process crude with different density, sulphur and viscosity levels without affecting product quality.
3. **Rapid Operational Flexibility:** Within weeks of the disruption, the share of non-Hormuz crude increased from **55% to 70%** of India's total crude intake. Public and private refineries quickly adjusted operating conditions and processed different crude grades safely.
4. **Engineering and Technical Expertise:** Years of investment in process understanding and operator training enabled engineers to manage complex refinery systems efficiently instead of treating them as fixed industrial units.
5. **Managing LPG Supply:** Under the **LPG Control Order**, domestic LPG production increased from **35 Thousand Metric Tonnes (TMT) per day to 54 TMT per day within five days** by optimising fractionation and cracking units. This reduced the immediate supply shortage, although long-term import dependence continued.
6. **Scaling Indigenous Innovation:** During the crisis, the Centre for High Technology approved scaling up the indigenous **CSIR's National Chemical Laboratory (NCL)** technology to produce **Dimethyl Ether (DME)**, demonstrating how earlier scientific investments became strategic assets.

Way Forward

1. **Strengthen Indigenous Research:** Continue investing in refinery science, metallurgy, process engineering and skilled manpower to build future industrial capability.
2. **Expand Coal Chemistry:** Scale up coal gasification and **Dimethyl Ether (DME)** production to reduce long-term dependence on imported LPG.
3. **Accelerate Technology Commercialisation:** Speed up the transition from laboratory innovation to commercial deployment through stronger industry participation.
4. **Deepen Institutional Collaboration:** Strengthen cooperation among research institutions, industry and government for faster technology development.
5. **Ensure Effective Policy Implementation:** Timely implementation of approved schemes is essential to convert policy support into industrial capability.
6. **Replicate the Refinery Model:** Apply the same long-term commitment to innovation, engineering excellence and technological learning in other strategic sectors.
7. **Institutional Preparedness:** Continue strengthening coordination, infrastructure and policy readiness so that future geopolitical shocks can be managed with minimum disruption.

Conclusion

The Hormuz crisis highlighted that national resilience depends on sustained preparation rather than emergency action alone. India's coordinated governance, energy diversification, technological capability and industrial strength helped limit the impact of a major external shock. As India advances towards Viksit Bharat 2047, continued investment in infrastructure, innovation, institutional capacity and energy security will remain essential for sustaining long-term economic growth and strategic resilience.

Question for practice:

Examine how India's response to the Strait of Hormuz crisis strengthened its energy security, economic resilience and long-term strategic preparedness.

Source: [The Hindu](#)

India needs a second home for Asiatic lions

UPSC Syllabus: Gs Paper 3- Ecology and Environment

Introduction

India has increased the **Asiatic lion population from only a few dozen in the early twentieth century to about 891 today**, making it one of the country's greatest wildlife conservation successes. However, the entire wild population remains concentrated in the **Gir landscape**, leaving the species vulnerable to disease, natural disasters and other ecological threats. The challenge now is to strengthen conservation by creating a geographically separate second free-ranging population.

Need for a Second Home for Asiatic Lions

1. **Conservation Success with Ecological Risk:** India has successfully increased the Asiatic lion population to **about 891**, but the entire wild population remains concentrated in one landscape. This makes the species vulnerable despite its growing numbers.
2. **Scientific Basis for a Second Population:** Reports of the **Wildlife Institute of India** and government-backed studies since the **1980s** have consistently shown that a single population faces a high risk from epidemics, forest fires and other disasters.
3. **Threat of a Single Catastrophic Event:** Conservation science considers one-location populations as a **single point of failure**. If Gir faces a major disaster, the entire wild Asiatic lion population could be lost.
4. **Need for Long-Term Species Survival:** Scientists support the **metapopulation approach**, where populations are spread across different habitats. This improves resilience and lowers extinction risk.
5. **Growing Pressure on Gir Landscape:** Gir covers only **1,412 sq km**, while **over 507 lions now live outside the protected area**, moving through farms, railway tracks and open wells. This increases risks for both lions and people.

Scientific, Legal and Policy Support for Translocation

1. **Wildlife Institute of India Recommendations:** Multiple reports of the **Wildlife Institute of India** have repeatedly recommended creating a second free-ranging population to ensure the species' long-term survival.
2. **Supreme Court Directive:** On **15 April 2013**, the Supreme Court ordered the translocation of Asiatic lions from Gir to **Kuno National Park**. It stated that conservation decisions must follow ecological principles rather than regional interests.

3. **Kuno Prepared for Lion Introduction:** Villages were relocated and habitats restored to prepare Kuno for lions. However, no lions have been shifted despite these preparations.
4. **National Heritage Principle:** The Supreme Court recognised that Asiatic lions are **India's national heritage** and not the property of any one State. Wildlife conservation should therefore serve national ecological interests.
5. **Policy Backing Continues: Project Lion (2020)** revived efforts to expand lion habitats and strengthen long-term conservation planning through additional protected populations.

Challenges in Establishing a Second Population

1. **State-Level Resistance:** Gujarat has opposed shifting lions outside the State. It has cited its conservation success and questioned habitat suitability elsewhere.
2. **Policy Deadlock:** Scientific advice, judicial directions and State-level interests have remained unresolved for over a decade, delaying implementation.
3. **Disease Vulnerability:** The **2018 Canine Distemper Virus (CDV)** outbreak killed **28 lions** and infected several others, showing the danger of keeping all lions together.
4. **Environmental Risks:** A single population remains exposed to droughts, forest fires, sudden prey decline and other unexpected events that could affect the entire species.
5. **Limited Genetic Diversity:** Hunting reduced Asiatic lions to fewer than **50** individuals in the early twentieth century. This created low genetic diversity and increased disease and reproductive risks.
6. **Conflict Between Ecology and Politics:** Wildlife is a shared constitutional responsibility, yet conservation decisions continue to be influenced by regional identity and political considerations.

Barda Wildlife Sanctuary: An Emerging Conservation Model

1. **A New Satellite Population:** Barda Wildlife Sanctuary, located about **100 km west of Gir**, is being developed as an ecological insurance population under **Project Lion**.
2. **Early Conservation Success:** After habitat restoration, a male lion naturally entered Barda in **2023**. Five relocated lionesses later produced **11 cubs**, increasing the population to **17 lions** by the **2025 census**.
3. **Project Lion Strengthens Conservation:** **Project Lion (2020)** promotes expansion of lion habitats. Barda has been recognised as **Satellite Population 8** under the **₹2,927 crore** programme.
4. **Improving the Prey Base:** Initial surveys found only **119 spotted deer** across **192.31 sq km**. The Forest Department relocated deer from Gir using the **Boma technique**, which safely moves animals without causing capture-related injuries.
5. **Strengthening Genetic Health:** Scientists are using **satellite telemetry** and planned relocations to improve genetic mixing within Barda's growing lion population and increase long-term resilience.

Way Forward for Long-Term Species Survival

1. **Create a Geographically Separate Population:** A second population should be located far enough from Gir so that disease or disasters cannot affect both populations at the same time.
2. **Follow Scientific Conservation Principles:** Conservation decisions should continue to follow scientific evidence supporting the **metapopulation approach**, which spreads populations across multiple habitats.
3. **Implement Existing Institutional Decisions:** The long-pending Supreme Court directive and national conservation plans require effective implementation to reduce long-term ecological risks.
4. **Balance National and State Interests:** Wildlife is a shared constitutional responsibility. Conservation decisions should prioritise national ecological security over regional identity.
5. **Strengthen Habitat Readiness:** Alternative habitats should have adequate prey, scientific monitoring and habitat restoration before supporting sustainable lion populations.

Conclusion

India has demonstrated that dedicated conservation can successfully restore the **Asiatic lion** population. Yet **numbers alone cannot ensure long-term survival** when every wild lion remains concentrated in one landscape. Creating a geographically separate second population is essential to reduce disease, disaster and genetic risks. Timely implementation of scientific recommendations will help transform conservation success into lasting ecological security.

Question for practice:

Examine the need for establishing a second free-ranging population of Asiatic lions in India for ensuring their long-term conservation and ecological security.

Source: [The Hindu](#)

Will El Niño weaken India's economy?

Source: The post “Will El Niño weaken India's economy?” has been created based on “Will El Niño weaken India's economy?” published in “The Hindu” on 7th July 2026.

UPSC Syllabus: GS 3– Indian Economy

Context: El Niño is a climate phenomenon that weakens the southwest monsoon and adversely affects India's agriculture-based economy. In 2026, the IMD reported a **40% rainfall deficit in June** and forecast **below-normal rainfall in July**, raising concerns about economic growth and food security.

Impact of a Poor Monsoon on India's Economy

1. **Decline in Agricultural Production:** A poor monsoon reduces agricultural production and lowers the contribution of agriculture to the economy.

2. **Fall in Rural Income and Demand:** A weak monsoon reduces farm incomes, which may decline by up to **10%**, and weakens consumer demand in rural areas.
3. **Rise in Food Inflation:** Lower agricultural output increases food prices and leads to higher food inflation.
4. **Impact on Livelihoods:** Agriculture contributes about **20% of Gross Value Added (GVA)**, employs **46% of the workforce**, and supports nearly **55% of India's population**. Therefore, a weak monsoon directly affects livelihoods.
5. **Slowdown in Rural Economy:** Reduced rural demand negatively affects sectors such as construction, automobile sales, tractors, and real estate.
6. **Lower Economic Growth:** A combined El Niño and drought may reduce India's GDP growth by **20–65 basis points**.
7. **Pressure on External Sector:** Lower agricultural production may increase imports, widen the **Current Account Deficit (CAD)**, put pressure on the rupee, and reduce agricultural exports despite their strong growth in recent years.

Impact of El Niño on Agriculture and Inflation

1. Several major droughts, including **1972, 1982, 2009, and 2015**, occurred during El Niño years.
2. Since 2000, five out of six El Niño years experienced deficient rainfall.
3. In **2009 and 2010**, poor rainfall caused crop GVA to contract by **2.5% and 3.2%**, respectively.
4. Food inflation reached double digits in 2009 because of lower agricultural output.
5. In 2015, inflation remained moderate due to effective food management, restrained MSP hikes, and low global commodity prices.

Is India Prepared for Another Weak Monsoon?

1. Around **315 districts** are vulnerable to poor monsoons.
2. Out of these, **111 districts across 12 States** face high risk due to poor irrigation facilities.
3. Reservoir storage is lower than last year and slightly below the normal level.
4. Another consecutive weak monsoon could severely strain water resources.

Measures to Drought-Proof India's Economy

1. The government should expand irrigation facilities to reduce dependence on rainfall.
2. It should increase public investment in climate-resilient agriculture.
3. Drought-resistant and high-yielding crop varieties should be developed and promoted.
4. Farmers should be provided easy access to improved seeds and modern technologies.
5. Policies should focus on reducing disaster risks before they occur rather than relying only on crop insurance.

Conclusion: El Niño poses a major challenge to India's agriculture, inflation, rural livelihoods, and overall economic growth. Strengthening irrigation, improving climate resilience, and investing in long-term risk reduction are essential to protect the economy from future droughts.

Question: Why does El Niño remain a major risk to India's economy? Discuss its impact on agriculture, inflation, and economic growth. Also suggest measures to drought-proof the Indian economy.

Source: The Hindu

India can become product nation of the world

Source: The post “India can become product nation of the world” has been created based on “India can become product nation of the world” published in “Business Line” on 6th July 2026.

UPSC Syllabus: GS 3– Indian Economy

Context: India must shift from being an assembly hub to becoming a **product nation** that designs, develops, manufactures, and brands products for global markets. This requires greater investment in innovation, intellectual property (IP), research, and globally competitive manufacturing.

Steps need to be taken to become a global product nation

1. Need to Move Beyond Assembly-Led Manufacturing

- a. India should move beyond assembling products designed abroad because most of the value is captured overseas.
- b. The country should focus on **inventing, designing, manufacturing, and branding** products within India.
- c. Higher value addition comes from research, patents, advanced engineering, branding, and global distribution.

2. Increase Public Investment in Research and Innovation

- a. The government should invest more in research and innovation to support high-risk technologies.
- b. Public funding has driven innovation in countries such as the United States through institutions like **DARPA**.
- c. India has already launched initiatives such as the **Production Linked Incentive (PLI) Scheme, Research, Development and Innovation (RDI) Scheme**, and **Anusandhan National Research Foundation (ANRF)**.
- d. These initiatives require sustained funding, faster implementation, and stronger private-sector participation.

3. Government as the First Customer

- a. The government should become the first and anchor customer for high-quality indigenous products.
- b. Public procurement can help domestic companies scale up and become globally competitive.
- c. Indigenous technologies should receive preference whenever quality standards are met.

4. Promote Intellectual Property (IP) Creation

- a. India should encourage the development of patents and intellectual property instead of relying only on manufacturing.
- b. Greater emphasis should be placed on product design, engineering, and innovation.
- c. Strong IP creation increases competitiveness and long-term economic value.

Challenges in Making India a Global Product Nation

1. **Assembly-led manufacturing:** India continues to assemble products designed abroad, resulting in most of the value addition and profits accruing to other countries.
2. **Low investment in research and innovation:** Public investment in research and innovation is still inadequate to support the development of globally competitive products.
3. **Limited intellectual property (IP) creation:** India generates relatively fewer patents and proprietary technologies, limiting its competitiveness in high-value industries.
4. **Weak government procurement support:** Government procurement has not been fully leveraged to promote and scale indigenous technologies and products.
5. **Slow implementation of policy initiatives:** Schemes such as the **PLI Scheme, RDI Scheme,** and **ANRF** require sustained funding, faster execution, and stronger private-sector participation.
6. **Intense global competition:** Countries such as China, Japan, South Korea, the United States, and Vietnam provide stronger financial support, R&D investment, and policy backing to their domestic industries.
7. **Limited global branding:** Although India has several successful companies, it still has relatively few globally recognized product brands across different sectors.
8. **Dependence on cost-based competitiveness:** India continues to rely heavily on low-cost manufacturing instead of competing through innovation, product design, advanced engineering, and branding.

Learn from Global Best Practices

1. Countries such as **Japan, South Korea, the United States, and the United Kingdom** supported industries through funding, affordable credit, and government procurement.
2. China promoted exports through **Special Economic Zones (SEZs)** and built globally recognized brands such as **Huawei** and **Xiaomi**.
3. South Korea invested heavily in R&D and created global brands such as **LG** and **Samsung**.
4. Japan encouraged domestic consumption of local products, helping its companies become global leaders.
5. Vietnam improved industrial competitiveness through incentives and lower financing costs.

Learn from Successful Indian Companies

1. **Titan** demonstrated how Indian companies can build globally competitive products through innovation and persistence.
2. **Nocca Robotics** developed a world-class ventilator during the COVID-19 pandemic within 90 days, showcasing India's engineering capability.
3. The **Vaccine Maitri** initiative enhanced India's global credibility by supplying vaccines to over 90 countries.
4. Companies such as **Serum Institute of India, Dr. Reddy's, Sun Pharma, Biocon, and Wockhardt** have established India's global presence in pharmaceuticals.
5. **Bajaj Auto** and **Mahindra & Mahindra** have expanded successfully into international markets.
6. **Tata Group, TCS, Infosys, Wipro, HCL, Asian Paints, Aarti Industries, Godrej, The Oberoi Group,** and **IHCL** have built globally recognized brands through quality and innovation.

Way Forward

1. India should strengthen collaboration between government, industry, and research institutions.
2. Investment in research, innovation, and product development should be increased.

3. Policies should encourage patent creation, advanced manufacturing, and global branding.
4. India should pursue the vision of "**Invent in India, Design in India, Build in India, and Brand India to the World.**"

Conclusion: India has the talent, entrepreneurial capacity, and policy support to become a global product nation. By investing in innovation, intellectual property, quality manufacturing, and strong global brands, India can move beyond cost-based competitiveness and emerge as a leading producer of world-class products.

Question: India must move beyond assembly-led manufacturing to become a global product nation." Discuss the steps required to achieve this goal with suitable examples.

Source: Business Line

AI Governance and a Voice for the Global South

UPSC Syllabus: Gs Paper 3- Science and Technology And Gs Paper 2- Governance

India hosted the **India AI Impact Summit 2026** to bring the **Global South's** needs into the centre of AI governance. The summit initially focused on **real-world harms, equity and inclusion**, but India's AI approach later shifted towards investment, domestic AI adoption and strategic partnerships. This created a debate on whether India should continue leading the **Global South** or move towards a **middle power** strategy while protecting its own strategic interests.

India's AI Governance Vision at the India AI Impact Summit 2026

1. **Global South at the Centre:** The summit placed the **needs and challenges of the Global South** at the centre of AI discussions instead of treating them as secondary concerns.
2. **Focus on Present-Day Harms:** India's approach gave priority to **real-world harms, equity and inclusion**, unlike earlier AI summits that mainly focused on catastrophic and existential AI risks.
3. **Different Policy Direction:** This marked a clear shift from the approaches followed at **Bletchley Park (2023)**, **Seoul (2024)** and **Paris (2025)** by addressing immediate concerns faced by developing countries.
4. **Context-Based AI Governance:** India's vision recognised that AI policies should reflect the **social and economic realities of the Global South** rather than applying one common approach for every country.

Shift in India's AI Strategy

1. **Move Towards AI Investment:** The policy focus gradually shifted from AI governance to **raising capital for AI development** and promoting AI adoption through domestic use cases.
2. **Middle Power Positioning:** India increasingly projected itself as a **middle power**, reducing the emphasis on **Global South solidarity** that had shaped the summit's original vision.
3. **Strategic Alignment with the U.S.:** India joined **Pax Silica**, signalling closer alignment with the **U.S.-led semiconductor supply chain** and adopting a **pro-innovation regulatory approach**.

4. **Concerns for Strategic Autonomy:** This shift raised concerns that India's growing strategic partnership could weaken its pursuit of **strategic autonomy** in AI governance.
5. **Mismatch with Ground Reality:** India's ambition to stand with countries such as **Japan** does not fully match its technological capacity, economic development, colonial history and **low per capita realities**, which continue to place it within the Global South.

Challenges Facing India's AI Ecosystem

1. **Dependence on Foreign AI Technology:** Questions remain whether India will mainly become a **consumer of U.S. AI technologies**, while Indian users bear a larger share of AI-related harms.
2. **Resource and Data Extraction:** India may increasingly supply **data, data-labelling labour, minerals, land, water and electricity** that mainly support the growth of American Big Tech.
3. **Limited Community Protection:** Land has been approved for **data centres**, leading to community displacement and protests, while meaningful safeguards for affected communities remain weak.
4. **Indigenous Knowledge Risks:** American companies continue scraping **public content** to build language and indigenous knowledge datasets without adequate protective guardrails.
5. **Weak Domestic Innovation:** India still cannot compete with **global foundation models**, semiconductor development remains focused on **low-value assembly**, and adequate investment for a strong national AI ecosystem remains uncertain.
6. **Slow Technology Growth:** Although non-profit organisations are signing agreements to expand AI use cases, this has not significantly strengthened **fundamental AI innovation**.

Why AI Governance Matters for the Global South

1. **Concentration of Economic Power:** The growing concentration of AI infrastructure and economic power in the **United States** raises concerns for developing countries.
2. **Uncertain Global Governance:** The U.S. has shown little interest in **global multilateral and multistakeholder AI governance**, creating uncertainty for international AI regulation.
3. **Lessons from Social Media:** There are concerns that AI may follow the same path as social media, where platform interests received greater protection than user safety.
4. **Unequal Distribution of Benefits:** Economic gains may largely remain with American companies, while business activities, users and AI-related harms spread across many countries.
5. **Need for Fair AI Development:** The Global South requires AI governance that protects users and ensures that economic value also remains within national markets.

India's Opportunity to Lead Global AI Governance

1. **Geneva Dialogue as an Opportunity:** The UN Global Dialogue on AI (July 6–7, 2026) provides an opportunity to develop collective rules for AI governance through multilateral and multistakeholder cooperation.
2. **Bridging a Leadership Gap:** India has the **political influence, technical capacity and diverse market** needed to help bring together a fragmented global AI policy agenda.
3. **Public Interest-Based AI Vision:** India can promote AI development based on **public purpose, user safety, strategic autonomy and international cooperation**, instead of acting only as an AI investment destination.
4. **Supporting Global South Priorities:** India can advocate international norms that help developing countries build **local AI ecosystems, strengthen regulation, improve skills and develop domestic infrastructure**.
5. **Promoting Fair Digital Markets:** India can also encourage stronger discussions on **competition, consumer protection and fair distribution of AI-generated economic value**.

Way Forward

1. **Strengthen Global South Cooperation:** India should create stronger partnerships among Global South countries to improve **agency and strategic autonomy** in AI governance.
2. **Pool AI Resources:** Countries should cooperate in **data, computing capacity, interoperable standards, shared governance protocols and technical resources**.
3. **Build Institutional Capacity:** Greater investment is needed to strengthen both **regulatory and technical institutions** across Global South countries.
4. **Develop Shared Governance Norms:** Common governance principles should ensure that AI benefits are shared fairly while protecting people from harm.
5. **Balance Innovation and Sovereignty:** India should support AI innovation while protecting **strategic autonomy, user interests and domestic economic value**.

Conclusion

India's AI journey now stands between **strategic partnerships** and **Global South leadership**. It has the capacity to shape AI governance that promotes **equity, user protection, strategic autonomy and international cooperation**. By strengthening cooperation among Global South countries and developing shared governance norms, India can help build an AI ecosystem where **both the benefits and responsibilities are distributed more fairly**.

Question for practice:

Discuss the challenges and opportunities before India in balancing strategic autonomy, AI governance, and leadership of the Global South in the evolving global AI landscape.

Source: [The Hindu](#)

How the Right to Walk is Integral to Modernity

UPSC Syllabus: Gs Paper 2- Constitution of India —historical underpinnings, evolution, features, amendments, significant provisions and basic structure.

Introduction

Walking is more than a way of travelling. It represents **freedom, dignity, equality and participation in public life**. In a landmark judgment, the Supreme Court recognised the **Right to Walk safely on demarcated footpaths** as a **fundamental right** under **Articles 19(1)(d)** and **21**, following the death of a child caused by the absence of pedestrian infrastructure. The ruling restores walking as a constitutional right and an essential element of India's cultural and modern identity.

Constitutional Recognition of the Right to Walk

1. **Recognition as a Fundamental Right:** The Supreme Court, in *Maniyar Iliyaz @ Shaik Riyaz v. P. Ayyappan*, held that the Right to Walk on safe footpaths is protected under Article 19(1)(d) (freedom of movement) and Article 21 (right to life). This gives pedestrians an equal constitutional claim over public roads.
2. **Judgment Triggered by Preventable Tragedy:** The ruling followed the death of a five-year-old child who was hit by a tanker while walking to school because there was no footpath or pedestrian crossing. The Court observed that such accidents will continue unless access to roads is restructured.
3. **Limits of Existing Law:** The Court noted that the Motor Vehicles Act, 1988 neither recognises nor protects a fundamental right to walk. Instead, it has weakened pedestrian rights by focusing mainly on motor vehicles.
4. **Shift from Vehicle-Centric Planning:** The Court observed that cities have celebrated flyovers, expressways and large road projects while ignoring pedestrians. It stressed that footpaths should be continuous, safe, accessible, walkable and free from obstruction.
5. **Pedestrians Have Equal Rights on Roads:** The judgment rejected the idea that roads belong mainly to motor vehicles. It affirmed that walking is not a privilege granted by the State but a constitutional right owed to every citizen.
6. **Need for Effective Enforcement:** Constitutional recognition alone is not enough. State governments and municipal bodies must frame enforceable laws and ensure that citizens can walk safely without fear or inconvenience.

How the Right to Walk is Integral to Modernity

1. **Walking as a Basic Human Freedom:** Human freedom is often limited by laws and public regulations, but walking remains one of the simplest ways to exercise personal liberty. The judgment restores this overlooked freedom in everyday life.

2. **Walking Encourages Reflection:** Walking without a fixed purpose allows the mind to reflect, imagine and organise thoughts. This makes it an important feature of modern life.
3. **Walking Challenges Elitist Thinking:** The belief that roads mainly belong to vehicle owners reflects an elitist view of public spaces. The judgment rejects this and gives pedestrians an equal constitutional claim over roads.
4. **Walking Expands the Meaning of Modern Development:** Development should not be measured only by highways and flyovers. Safe footpaths and pedestrian-friendly streets are equally important indicators of a modern and inclusive society.
5. **Walking Strengthens Democratic Public Spaces:** Roads are shared public spaces where citizens exercise their freedom. Recognising the right to walk connects constitutional rights with everyday life.

Walking in India's Cultural, Historical and Political Tradition

1. **Walking in Indian Literature:** Indian literature has long celebrated walking as a symbol of freedom, courage and exploration. Works such as Rabindranath Tagore's "Ekla Chalo Re" and Jibanananda Das's "Banalata Sen" reflect this enduring tradition.
2. **Walking in Art and National Imagination:** Images such as Nandalal Bose's "Bapuji" and the Gyarah Murti sculpture have shaped the public memory of Mahatma Gandhi as a leader whose ideas were expressed through walking.
3. **Walking in India's Freedom Movement:** Walking became a powerful tool of political action through movements such as Gandhi's Dandi March, Subhash Chandra Bose's "Delhi Chalo", and many protest marches before and after Independence. It represented resistance, participation and collective action.
4. **Walking in Spiritual Traditions:** Walking has deep roots in India's spiritual history through figures such as Siddhartha, Guru Nanak, Chaitanya and other wandering seekers. It symbolised learning, meditation and the search for truth.
5. **Walking in Cultural Traditions:** Walking also appears in religious practices and language. Goddess Lakshmi's footprints in folk rituals and the use of "pada" as a poetic and knowledge unit show that walking has long been part of India's cultural imagination.
6. **Walking as a Shared Civilisational Value:** The Court recognised that walking has always influenced India's culture, society, religion, politics and reform movements. It has represented struggle for the disadvantaged, meditation for seekers, resistance for reformers and discovery for curious minds.

Significance of the Right to Walk

1. **Protection of Life and Human Dignity:** Safe footpaths reduce the risk of accidents and allow people to move with dignity. The judgment makes pedestrian safety a constitutional responsibility rather than only a traffic issue.

2. **Safer and More Inclusive Cities:** Functional footpaths benefit children, elderly persons and persons with disabilities, who depend more on safe walking spaces. They make public infrastructure accessible to all sections of society.
3. **Environmental and Public Health Benefits:** A 2019 study in Chennai found that 9% to 27% of people shifted from motorised transport to walking after new footpaths were built. This reduced greenhouse gas emissions and particulate pollution while encouraging healthier lifestyles.
4. **Economic and Social Benefits:** Better footpaths created savings and new opportunities for women and lower-income groups. Well-designed pedestrian spaces can support daily mobility without increasing transport costs.
5. **Strengthening Public Spaces:** Footpaths are more than walking paths. When properly planned and maintained, they can function as vibrant public spaces similar to parks or libraries, making cities more people-friendly.

Challenges in Realising the Right to Walk

1. **Poor Pedestrian Infrastructure:** Many footpaths are broken, dug up, blocked or end abruptly, forcing pedestrians onto busy roads. The absence of safe crossings further increases the risk of accidents.
2. **High Pedestrian Fatalities:** More than 1.8 lakh pedestrians died in road crashes between 2019 and 2024, averaging about 30,500 deaths annually. National Highways accounted for nearly 31% of these deaths, while 54% involved collisions with cars and two-wheelers.
3. **Uneven Availability of Footpaths:** According to the India Status Report on Road Safety, footpath availability ranges from 3% in Jammu and Kashmir to 73% in Maharashtra. States such as Bihar, Haryana and Puducherry continue to have very limited usable pavements.
4. **Vehicle-Centric Urban Planning:** Urban development has focused mainly on roads for motor vehicles. The Court observed that this approach has pushed pedestrians aside and treated them as obstacles instead of rightful road users.
5. **Encroachments and Conflicting Uses:** Footpaths are often occupied by street vendors, parked motorcycles, vegetable stalls and other activities. At the same time, many homeless people use pavements for shelter because they feel safer there than in night shelters, creating competing claims over limited public space.
6. **Accessibility and Enforcement Gaps:** Footpaths often contain poles, trees, potholes and other barriers, making movement difficult for persons with disabilities. Constitutional recognition will have little impact unless municipal bodies enforce standards and maintain pedestrian infrastructure.

Way Forward

1. **Develop Continuous and Safe Footpaths:** Every road should include continuous, obstruction-free and well-maintained footpaths along with safe pedestrian crossings.
2. **Adopt Pedestrian-First Urban Planning:** Road projects should give equal importance to pedestrians instead of focusing only on flyovers and expressways.
3. **Strengthen Enforcement and Municipal Accountability:** State governments and local bodies should frame effective rules and regularly monitor compliance with pedestrian safety standards.
4. **Ensure Universal Accessibility:** Footpaths should be designed to meet the needs of children, elderly persons and persons with disabilities by removing physical barriers.
5. **Balance Walking Rights with Livelihood Needs:** Urban planning should protect the right to walkwhile addressing the livelihood concerns of street vendors and the shelter needs of homeless people through better management of public spaces.
6. **Recognise Walking as a Public Right:** Public policy should treat walking as an essential part of mobility, health, sustainability and constitutional governance rather than as a secondary mode of transport.

Conclusion

The Supreme Court's judgment recognises that **walking is a constitutional right, not a privilege**. It connects **freedom, dignity, safety and equality** with everyday mobility. Protecting this right requires **safe infrastructure, effective enforcement and people-centred urban planning**, so that every citizen can move freely and securely in public spaces, making cities more **inclusive, humane and truly modern**.

Question for practice:

Discuss the significance of recognising the Right to Walk as a fundamental right and explain how it is integral to modernity in the Indian context.

Source: [The Hindu](#)

Grand ambitions: On India's cooperative sector

Source: The post "Grand ambitions: On India's cooperative sector" has been created based on "Grand ambitions: On India's cooperative sector" published in "The Hindu" on 8th July 2026.

UPSC Syllabus: GS 3- Indian Economy

Context: India established the Ministry of Cooperation in 2021 to strengthen and modernise the cooperative movement as a people-centric and inclusive model of economic development. As the Ministry completed five years on 6 July 2026, it has focused on expanding cooperatives beyond agriculture into sectors such as dairy, fisheries, housing, banking, consumer services, and exports.

Role of the Ministry of Cooperation and Opportunities for the Cooperative Sector

1. Promoting a Worker-Centric Development Model

- a. The cooperative model provides an alternative to hypercompetitive capitalism by prioritising the welfare and participation of members.
- b. It promotes inclusive economic development while reducing the undesirable social consequences associated with purely profit-driven business models.

2. Expanding Cooperatives Beyond Agriculture

- a. Traditionally, cooperatives have been largely confined to agriculture.
- b. The Ministry seeks to expand cooperatives into **other sectors, particularly services**, thereby increasing their contribution to the economy.

3. Bringing Policy Coherence

- a. The Ministry aims to provide **policy coherence** across agriculture, dairy, fisheries, banking, housing, consumer cooperatives, and exports.
- b. A coordinated policy framework can strengthen the overall cooperative ecosystem.

4. Integrating Fragmented Cooperatives

- a. Since cooperatives are relatively **small-scale and fragmented**, the Ministry seeks to organise them and connect them with the broader economy.
- b. This balancing intervention is an **economic, political, and social imperative** in an economy that increasingly rewards large-scale enterprises.

5. Strengthening Primary Agricultural Credit Societies (PACS)

- a. Through a reformed legal framework, **Primary Agricultural Credit Societies (PACS)** have been empowered to undertake **more than 25 business activities**.
- b. This has transformed PACS into **multifunctional institutions** capable of delivering a wide range of economic services in rural India.

6. Expanding Market Access

- a. The Ministry has facilitated the establishment of **new national-level multi-State cooperative societies**.
- b. These institutions expand market access for cooperative members and strengthen cooperative value chains from **production to global markets**.

7. Encouraging Competitive Cooperative Enterprises

- a. Cooperative enterprises are being encouraged to **grow and compete** while retaining their cooperative character.
- b. A **National Cooperation Policy** is also being prepared to provide long-term policy direction for the sector.

8. Diversifying Cooperative Activities

- a. The Ministry is encouraging cooperatives to expand into **production and marketing**, in addition to agricultural credit and input facilitation.
- b. Such diversification can help address the **endemic crisis in the agricultural sector**.

9. Building a Sustainable Economic Alternative

- a. A well-coordinated yet federated cooperative sector can offset the **social, environmental, and political costs of global capitalism**, which currently dominates the economy.
- b. As governments and business leaders across the world show renewed interest in cooperatives, India has the opportunity to develop its cooperative sector as a **global model**.

Challenges Before the Cooperative Sector

1. Legacy of Corruption and Inefficiency: Corruption and inefficiency have historically weakened the functioning of India's cooperative sector and limited its potential.

2. Concerns of States and Local Communities: States and local communities fear losing control over cooperatives to a **national-level mechanism**. Addressing these concerns is essential for ensuring wider acceptance of reforms.

3. Balancing Centralisation and Decentralisation: The key challenge lies in finding the **right balance between consolidation and decentralisation** so that cooperatives become stronger without weakening local autonomy.

4. Balancing Localisation and Nationalisation: The cooperative movement must strike a balance between **local participation and national-level coordination** to ensure both efficiency and democratic functioning.

5. Balancing Technology and Human Labour: While technology can improve efficiency, the cooperative model should continue to remain **people-centric** by maintaining an appropriate balance between technology and human labour.

Way Forward

1. Strengthen Cooperative Federalism: The Ministry should continue working in close collaboration with **States and national federations** to ensure cooperative reforms are implemented in a consensual and effective manner.

2. Enhance Institutional Capacity: Greater emphasis should be placed on **capacity building** so that cooperative societies can improve governance, professionalism, and service delivery.

3. Promote Digital Transformation: **Digital technology** should be used wisely to improve transparency, efficiency, and market access without compromising the participatory nature of cooperatives.

4. Improve Market Linkages: Cooperatives should be connected to **national and global markets** through stronger value chains and better marketing support, enabling members to receive higher returns.

5. Ensure Balanced Growth: Reforms should strike the **right balance between consolidation and decentralisation, localisation and nationalisation, and technology and human labour**, so that cooperatives remain both competitive and democratic.

6. Finalise the National Cooperation Policy: The proposed **National Cooperation Policy** should provide a clear roadmap for expanding cooperatives into production, marketing, services, and exports while preserving their cooperative ethos.

Conclusion: The Ministry of Cooperation has created an opportunity to transform India's cooperative sector into a **strong, diversified, and worker-centric model of development**. By ensuring policy coordination, strengthening institutions, respecting the federal structure, and promoting balanced reforms, India can build a cooperative movement that combines **economic competitiveness with social inclusion** and emerges as a **global model of cooperative development**.

Question: India's cooperative sector can serve as a worker-centric model of development. Discuss the role of the Ministry of Cooperation in strengthening the cooperative sector. Also examine the challenges associated with this approach.

Source: [The Hindu](#)

India's engineering education needs a reset in the AI era

Source: The post "**India's engineering education needs a reset in the AI era**" has been created based on "**India's engineering education needs a reset in the AI era**" published in "**Indian Express**" on 8th July 2026.

UPSC Syllabus: GS 2- Governance

Context: Engineering education is the foundation of India's ambitions in Artificial Intelligence (AI), semiconductors, advanced manufacturing, clean energy, and the digital economy. However, despite the growing demand for skilled engineers, a large number of engineering institutions are facing declining admissions, poor employability, and weak academic standards. Therefore, India must reform its engineering education ecosystem to produce globally competitive engineers.

Challenges Faced by Engineering Education

1. Declining Quality of Institutions

- a. A large number of engineering colleges suffer from weak faculty, outdated curricula, inadequate infrastructure, and poor academic standards.
- b. As a result, the AICTE has placed several engineering colleges under progressive closure due to persistent non-compliance with regulatory norms.

2. Poor Employability of Graduates

- a. Many engineering graduates do not possess the practical and technical skills required by modern industries.

- b. Consequently, there is a significant gap between industry expectations and the capabilities of engineering graduates.

3. Outdated Curriculum

- a. The curriculum in many institutions has not been updated to reflect emerging technologies such as Artificial Intelligence, data science, cybersecurity, robotics, and semiconductor design.
- b. Furthermore, excessive reliance on rote learning limits innovation and problem-solving skills among students.

4. Demand-Supply Imbalance

- a. Student preference has shifted towards Computer Science and AI-related disciplines, while traditional branches such as Mechanical and Electrical Engineering have witnessed declining enrolments.
- b. Consequently, many seats in traditional engineering programmes remain vacant every year.

5. Financial Unsustainability of Colleges

- a. Declining admissions have reduced the financial viability of many engineering institutions.
- b. Therefore, several colleges have been forced to undergo progressive closure to protect students' interests.

Reforms Required

1. Modernise the Curriculum

- a. Engineering curricula should be updated regularly to include emerging technologies such as Artificial Intelligence, data science, cybersecurity, semiconductor design, robotics, and sustainability.
- b. At the same time, institutions should continue to provide strong foundations in mathematics, science, and core engineering subjects.

2. Promote Competency-Based Education

- a. Institutions should shift from rote learning to competency-based education through project-based learning, interdisciplinary problem-solving, research, and design thinking.
- b. This approach will improve innovation, creativity, and practical skills among students.

3. Strengthen Industry-Academia Collaboration

- a. Engineering institutions should increase internships, industry projects, and collaborative research programmes with industries.
- b. Such collaboration will ensure that graduates acquire industry-relevant skills and improve their employability.

4. Adopt Outcome-Based Regulation

- a. Regulatory authorities should evaluate institutions based on graduate employability, research output, innovation, patents, startups, and industry engagement rather than only infrastructure and faculty strength.

- b. This will improve the overall quality and accountability of engineering education.

5. Improve Faculty Quality and Research

- a. Institutions should invest in faculty development programmes and promote research, innovation, and entrepreneurship.
- b. Better faculty and stronger research ecosystems will enhance the global competitiveness of engineering education.

Conclusion: India's engineering education system must shift from **quantity to quality, compliance to outcomes, and capacity expansion to global competitiveness**. A future-ready engineering ecosystem that is aligned with industry needs and emerging technologies will enable India to achieve its ambition of becoming a global technology and innovation leader in the AI era.

Question: India's aspiration to become a global technology powerhouse depends on transforming its engineering education ecosystem." Discuss the challenges faced by engineering education in India and suggest reforms required to make it future-ready in the AI era.

Source: [Indian Express](#)

India's Economic Prospects after the West Asian Crisis

UPSC Syllabus: Gs Paper 3- Indian Economy

Introduction

The easing of the West Asian crisis after the US-Iran preliminary 14-point MoU and the reopening of the Strait of Hormuz have improved India's economic outlook for 2026-27. Lower crude oil prices have eased pressure on inflation, fiscal management and the external sector. However, weak monsoon conditions, fertilizer shortages and continuing geopolitical uncertainties remain major risks. India now needs balanced policies to strengthen growth and improve long-term economic resilience.

Improving Global Environment and India's Economic Outlook

1. **West Asian ceasefire improves global stability:** The **US-Iran preliminary 14-point MoU** and the reopening of the **Strait of Hormuz** have reduced risks to global trade and energy markets. If peace continues, crude oil supplies are expected to remain stable.
2. **Crude oil prices have declined sharply:** The Indian crude oil basket fell from **\$114.5 per barrel in April 2026** to **\$106.2 in May** and **\$86.3 by June 24, 2026**. Brent crude also declined to around **\$70 per barrel**, reducing inflationary pressure.
3. **Global outlook has become more favourable:** Lower geopolitical tensions have improved global growth prospects and eased pressure on central banks and emerging market currencies. However, war-risk premiums still remain due to occasional skirmishes.

4. **India enters FY27 with a strong growth base: GDP grew by 7.7% and real Gross Value Added (GVA) by 7.9% in 2025-26**, with manufacturing, trade, transport, financial services and real estate recording growth of more than **10%**.
5. **Growth is expected to remain resilient in 2026-27**: The **RBI** has projected **6.6% real GDP growth** despite the impact of higher crude prices during the first quarter and weak monsoon conditions.
6. **High-frequency indicators support economic resilience: Purchasing Managers' Index (PMI), automobile sales, fuel consumption (excluding LPG), UPI transactions, electricity demand and credit growth** remained strong. Industries such as airlines, ceramics and fertilisers are expected to recover as supply chains normalise.

Key Risks to India's Economic Recovery

1. **Weak monsoon remains the biggest domestic risk**: The **India Meteorological Department** estimated a **10% rainfall shortfall** against the Long Period Average, while the shortfall reached nearly **43% up to June 24, 2026**. As of **July 2**, all-India rainfall remained **33.5% below normal**.
2. **Agricultural production faces pressure**: The combination of **El Niño** and fertilizer shortages may reduce agricultural output during **2026-27**. Both **kharif** and **rabi** crops may be affected.
3. **Delayed sowing may weaken rural demand**: Lower rainfall has slowed the sowing of **paddy, oilseeds and pulses**. This could reduce rural demand during the second half of the financial year.
4. **Fertilizer availability needs attention**: Limited natural gas supplies increased the cost of urea imports and created concerns over fertilizer availability. Building fertilizer reserves and addressing shortages for key crops has become important.
5. **Crop trade policies may require review**: Possible shortages of important crops may require reconsideration of crop-specific import and export policies. This can help reduce supply pressures if production weakens.
6. **Peace in West Asia remains an important assumption**: India's economic outlook depends on continued stability in West Asia. If the conflict resumes, India and many other countries may face serious economic difficulties once again.

Inflation, Fiscal Position and External Sector

1. **Inflation pressures are expected to moderate**: Lower crude oil prices are likely to keep **Wholesale Price Index (WPI)** around **6%** and **Consumer Price Index (CPI)** around **4.5%**, resulting in an estimated **Implicit Price Deflator (IPD)** inflation of **5.4%**.
2. **Higher nominal GDP supports revenue growth**: With **6.6% real GDP growth** and **5.4% IPD inflation**, nominal GDP growth may reach about **12.4%**, exceeding the Budget estimate of **10.1%** and supporting tax collections.
3. **Fiscal position remains manageable despite pressures**: Excise duty cuts and higher fertilizer subsidies have increased expenditure, but the **RBI dividend of ₹2.69 lakh crore** will support government finances. The fiscal deficit is expected to remain close to the budgeted **4.3% of GDP**.

4. **Tax collections remain encouraging:** Gross GST collections recorded their strongest growth since **September 2025**, while net direct tax collections reached **₹5.21 lakh crore** by **June 15**, growing **15% year-on-year**.
5. **External sector has improved:** The **current account deficit** is expected to remain around **1.5% of GDP**, lower than the earlier estimate of **2.1%**, while the rupee and bond markets have recovered after the ceasefire.

Sector-wise Impact on the Indian Economy

1. **Petroleum economy remains import-dependent:** India's crude oil import dependence has increased to **more than 90% in 2025-26** from **54.9% in 1998-99**. Domestic crude production has fallen to **26 MMT** from its peak of **35.9 MMT in 2011-12**.
2. **Demand for petroleum products continues to rise:** Domestic consumption of petroleum products increased from **90.6 MMT in 1998-99** to **243.2 MMT in 2025-26**. This has increased the need for larger crude imports.
3. **Refining capacity supports energy security:** India has steadily expanded its crude oil refining capacity. This reduces refining costs compared with directly importing refined petroleum products.
4. **Manufacturing and industrial activity stayed strong:** The Manufacturing Purchasing Managers' Index (PMI) remained among the strongest globally. The revised **Index of Industrial Production (IIP)** methodology better reflected strong industrial production and supported healthy **GVA** growth.
5. **Consumption recovered after supply disruptions:** Petrol and diesel consumption improved in June as restrictions eased, while **LPG** demand remained weak because of supply disruptions. Vehicle sales also remained healthy during the month.
6. **Some service sectors faced temporary stress:** The aviation sector experienced lower passenger traffic because of higher **ATF** prices, leading to route cancellations. Corporate bond markets recovered in June as credit spreads narrowed and competitiveness improved.
7. **Government spending gained momentum:** Revenue expenditure increased due to higher fertilizer subsidies and a **23% rise in interest payments**. Capital expenditure also strengthened, with spending by the **Railways** and **Defence** ministries increasing by **34%** and **28%**, respectively.

Way Forward

1. **Build strategic reserves:** Lower crude prices provide an opportunity to increase reserves of crude oil, fertilizers and other critical primary commodities. A long-term policy should define reserve levels and the required infrastructure.
2. **Diversify crude import sources:** India should reduce its dependence on imports passing through the **Strait of Hormuz**. Expanding the number of supplier countries can improve energy security.
3. **Strengthen domestic energy capacity:** Greater focus is needed on domestic crude oil exploration as import dependence continues to rise. India should also accelerate the shift towards greener energy sources, including **nuclear power**.

4. **Protect agriculture from supply risks:** Fertilizer reserves should be strengthened and shortages should be addressed quickly. Crop-specific import and export policies may need adjustment if production declines.
5. **Maintain fiscal stability:** Corporate tax collections, import-related GST, disinvestment and asset monetisation will remain important while excise duty collections recover. This can help balance higher subsidy expenditure.
6. **Promote energy-efficient growth:** The declining energy intensity of output and petroleum use in GDP should be sustained. This will support long-term economic growth with lower energy dependence.

Conclusion

The easing of the West Asian crisis has improved India's economic outlook through lower crude prices, easing inflation and stronger fiscal and external conditions. However, this outlook depends on continued peace in West Asia. India should strengthen energy security, build strategic reserves, protect agriculture from climate-related risks and maintain fiscal discipline to sustain stable and resilient economic growth in the coming years.

Question for practice

Examine the impact of the easing of the West Asian crisis on India's economic prospects, and discuss the key risks and policy measures needed to sustain long-term economic resilience.

Source: [The Hindu](#)

Linking Women's Incomes and Healthcare

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

Introduction

India is experiencing both rising **female labour force participation** and an increasing burden of **non-communicable diseases (NCDs)**. While healthcare policy has traditionally focused on expanding medical services, growing evidence shows that **women's economic empowerment can also influence household health decisions**. Higher incomes earned by women encourage greater investment in nutrition, preventive care and healthier lifestyles, making economic empowerment an important factor in improving long-term public health.

India's Twin Transformations

1. **Rising Women's Workforce Participation:** Female labour force participation has increased sharply in recent years. Greater formalisation, digital payments and government initiatives have supported women's entry into the workforce.

2. **Changing Disease Burden:** India is no longer dealing mainly with infectious diseases. Diabetes, hypertension, cardiovascular diseases, obesity and mental health disorders now account for most deaths and increase pressure on households and public finances.
3. **A Hidden Link Between Two Changes:** Economic and health transitions are often treated separately. New research shows that both developments may be closely connected through household decision-making.
4. **Importance of Women's Economic Role:** Higher incomes for women can reshape household decision-making. This suggests that women's economic participation is closely linked with better household health outcomes.

Beyond Healthcare Spending: Creating Better Health

1. **Healthcare Is More Than Medical Treatment:** Progress in healthcare is usually measured through hospitals, doctors, insurance and healthcare spending. These remain important for improving access and saving lives.
2. **Role of Preventive Investments:** Good health also depends on better nutrition, healthier lifestyles, preventive care, education, sanitation and informed household decisions. These factors reduce the chances of illness before treatment becomes necessary.
3. **Ayushman Bharat and Primary Healthcare:** Ayushman Bharat has expanded financial protection for millions of households. Improvements in primary healthcare infrastructure have also contributed to better health outcomes.
4. **Lower Spending Can Mean Better Health:** A fall in healthcare expenditure does not always indicate poor healthcare access. It may show that families are preventing diseases and therefore need less medical treatment.

Evidence Linking Women's Income and Household Health Decisions

1. **Natural Experiment Through EPF Reform:** The 2018 Employees' Provident Fund (EPF) reform reduced mandatory provident fund contributions for newly employed women in the formal sector from 12% to 8% during their first three years of employment. This increased women's take-home salary without changing their gross wages.
2. **Shift in Household Spending:** Female-led households benefiting from the reform reduced overall healthcare expenditure by about 11.6%. Spending on medicines and doctors' consultations declined, while spending on nutrition and physical fitness increased.
3. **Medical Evidence Supports Preventive Spending:** Electronic medical records from one of India's largest eye hospital systems also showed lower healthcare expenditure among women receiving the income increase. This reflected greater investment in prevention and healthier living rather than lower value placed on healthcare.

4. **Women's Income Changes Household Priorities:** Earlier studies show that income received by women increases household investment in education, nutrition and children's wellbeing. The new findings show a similar pattern in healthcare, where women invest early to reduce future health risks instead of waiting for illness.

Policy Implications for India's Development

1. **Women's Employment Supports Better Health:** India's demographic dividend depends on creating jobs for women and improving family health together. Higher female incomes can increase spending on nutrition, preventive care and healthier lifestyles.
2. **Employment Policy Becomes Health Policy:** Policies that strengthen women's economic agency can improve public health along with labour market outcomes. Their benefits go beyond employment alone.
3. **Reducing Pressure on Healthcare Financing:** Better preventive health practices can reduce future illness and lower dependence on healthcare services. This can also reduce pressure on India's healthcare system, where out-of-pocket expenditure remains a significant source of healthcare financing.
4. **Creating Health Instead of Buying Healthcare:** Households can improve health by investing in nutrition, healthier lifestyles and preventive care instead of depending mainly on medical treatment.
5. **Healthcare Spending Is Not a Complete Measure:** Lower expenditure on healthcare should not always be seen as neglect. It may reflect fewer illnesses because households have invested more in prevention.

Conclusion

India's focus on **preventive healthcare** and healthier lifestyles should also promote **women's economic empowerment**. Higher women's incomes encourage greater investment in long-term health instead of only medical treatment. These different household spending decisions can improve family wellbeing, reduce pressure on the healthcare system and become an important investment in India's public health.

Question for practice:

Evaluate the role of women's economic empowerment in improving household health outcomes and promoting preventive healthcare in India.

Source: [The Hindu](#)

India and Japan must build Asia's defining partnership

Source: The post "India and Japan must build Asia's defining partnership" has been created based on "Shashi Tharoor writes: India and Japan must build Asia's defining partnership" published in "Indian Express" on 9th July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: India and Japan share a **Special Strategic and Global Partnership** based on common democratic values, respect for the rule of law, and a shared vision of a free, open, and inclusive Indo-Pacific. In the present era of geopolitical uncertainty, supply chain disruptions, and technological competition, the India–Japan partnership has become increasingly significant for regional stability and sustainable development.

Significance of the India–Japan Partnership

1. Strengthening Economic Cooperation

- a. The 16th India–Japan Annual Summit resulted in **\$12.5 billion** of fresh Japanese investment in India's infrastructure and manufacturing sectors.
- b. The signing of **129 Memoranda of Understanding (MoUs)** with participation from more than **150 Japanese companies** reflects the growing economic partnership between the two countries.
- c. These investments will strengthen India's manufacturing ecosystem and promote long-term industrial growth.

2. Building Resilient Supply Chains

- a. India and Japan are collaborating to develop resilient supply chains in sectors such as semiconductors, telecommunications, and critical minerals.
- b. This cooperation will reduce dependence on single-source supply chains and improve economic security against global disruptions.

3. Enhancing Defence and Strategic Cooperation

- a. The partnership includes joint manufacturing and co-development of advanced defence equipment.
- b. Both countries have initiated their first military hardware co-development project focusing on **Unified Complex Radio Antenna (UNICORN) masts** for naval platforms.
- c. Discussions on the future co-production of **Mogami-class stealth frigates** demonstrate the growing defence partnership.
- d. Through the Quad, India and Japan are promoting a free, open, and rules-based Indo-Pacific while respecting national sovereignty.

4. Promoting Technology and Clean Energy Cooperation

- a. Both countries are cooperating in areas such as Artificial Intelligence safety standards, digital governance, and technological innovation.
- b. They have also agreed to work together on green ammonia production and the establishment of **1,000 regional biogas plants**, thereby supporting clean energy transition.

5. Leveraging Demographic Complementarity

- a. Japan is facing a shrinking workforce due to an ageing population, whereas India has a large and youthful workforce.
- b. A structured talent mobility framework can help Indian professionals address Japan's labour shortages while generating employment opportunities for Indian youth.
- c. Such cooperation should include cultural orientation and institutional mechanisms to protect migrant workers.

6. Developing a Joint Care Economy

- a. Japan has developed advanced expertise in eldercare, rehabilitative robotics, and age-friendly infrastructure.
- b. India can benefit from Japan's experience through joint research, technology transfer, and collaborative projects to prepare for its own ageing population in the future.

7. Promoting Women's Economic Participation

- a. India and Japan can create structured employment opportunities for Indian women in Japan's care sector.
- b. Safe housing, career progression, skill certification, and harassment-free workplaces will improve female labour force participation while addressing Japan's care-sector workforce shortages.

8. Supporting Inclusive Economic Development

- a. Japan's post-war development model demonstrates that sustainable prosperity depends on expanding a strong middle class.
- b. India can replicate this approach by promoting manufacturing hubs, logistics networks, and technological infrastructure in Tier-2 and Tier-3 cities.
- c. Such cooperation will promote balanced regional development and increase upward social mobility.

Challenges

- 1. Demographic and Cultural Differences:** Differences in language, work culture, and social integration continue to limit the movement of Indian professionals to Japan.
- 2. Slow Project Implementation:** Infrastructure and investment projects often face delays due to administrative procedures and regulatory bottlenecks.
- 3. Skill Gap:** Many Indian workers require specialised technical training and Japanese language proficiency to meet Japan's labour market requirements.
- 4. Geopolitical Uncertainty:** Rising regional tensions and strategic competition in the Indo-Pacific may create challenges for deeper cooperation.
- 5. Limited Trade Potential:** Despite strong political relations, bilateral trade remains below its full potential and requires greater diversification.

Way Forward

- 1. Strengthen Economic Integration:** India and Japan should accelerate investments in manufacturing, logistics, and industrial corridors to deepen economic cooperation.
- 2. Expand Talent Mobility:** Both countries should establish structured migration pathways with language training, skill development, and strong worker protection mechanisms.

3. Deepen Defence Cooperation: The two countries should increase defence co-production, technology transfer, and regular military exercises to strengthen regional security.

4. Promote Technology and Innovation: Greater collaboration in semiconductors, Artificial Intelligence, digital public infrastructure, robotics, and clean energy should be encouraged.

5. Improve Ease of Doing Business: India should simplify regulatory procedures and ensure timely implementation of Japanese investment projects.

6. Promote Inclusive Development: Both countries should focus investments on Tier-2 and Tier-3 cities to create employment opportunities and strengthen India's middle class.

Conclusion: India and Japan have transformed their relationship into a comprehensive strategic partnership based on shared democratic values, economic cooperation, technological innovation, and regional security. By addressing existing challenges and expanding cooperation in critical sectors, both countries can build a resilient, inclusive, and rules-based Indo-Pacific while contributing to long-term peace, prosperity, and sustainable development in Asia.

Question: India-Japan relations have evolved beyond economic cooperation into a comprehensive strategic partnership. Discuss the significance of this partnership in the changing Indo-Pacific geopolitical landscape. Also examine the challenges and suggest a way forward.

Source: Indian Express

What is the right to be forgotten?

Source: The post “What is the right to be forgotten? | Explained” has been created based on “What is the right to be forgotten?” published in “The Hindu” on 9th July 2026.

UPSC Syllabus: GS 2 – Polity & Governance

Context: The **Right to be Forgotten (RTBF)** is the right of an individual to have personal information erased or de-indexed from the public digital space when its continued availability causes harm and no longer serves a legitimate public interest. The recent **Delhi High Court judgment (Laksh Vir Singh Yadav v. Union of India, 2026)** has laid down a structured framework for balancing privacy with open justice and freedom of expression.

About the Right to be Forgotten

1. The Right to be Forgotten allows individuals to seek the removal or de-indexing of personal information from digital platforms when its continued accessibility violates their privacy and dignity.
2. The concept gained global recognition after the **2014 European Court of Justice judgment in the Mario Costeja González case**, which later became part of **Article 17 of the EU's General Data Protection Regulation (GDPR)**.

Evolution in India

1. The **Supreme Court in K.S. Puttaswamy v. Union of India (2017)** recognised privacy as a fundamental right under **Article 21**, including the right to informational privacy.

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2. Different High Courts adopted varying approaches regarding anonymisation and removal of personal information due to the absence of a uniform legal framework.
3. The recent Delhi High Court judgment attempts to provide such a framework.

Key Features of the Delhi High Court Judgment

1. The Court held that the Right to be Forgotten flows from **Article 21**, which guarantees dignity and informational privacy.
2. The Court introduced a **proportionality test**, requiring that retention of information must serve a legitimate purpose and that privacy harm must be balanced against public interest.
3. The Court preferred **masking or redaction of parties' names** instead of deleting entire judicial records.
4. The Court directed legal databases to comply with such orders within **two weeks**.
5. The judgment clarified that judicial records would remain accessible through case numbers or keyword searches, while restricting name-based searches.

Significance of the Judgment

1. The judgment strengthens the constitutional right to privacy and protects individuals from long-term digital harm.
2. It balances privacy with the principles of open justice and freedom of speech.
3. It protects individuals who have been acquitted or whose disputes have been settled from continuing social stigma.
4. It establishes a structured legal framework for handling future RTBF cases.

Challenges

- 1. Balancing Fundamental Rights:** The Right to be Forgotten may conflict with **Article 19(1)(a)**, which guarantees freedom of speech and the public's right to know.
- 2. Enforcement Difficulties:** Information may continue to appear through mirror websites, archives, cached pages, and social media despite court orders.
- 3. Search Engine Limitations:** De-indexing removes search results but does not permanently erase the original content from the internet.
- 4. Inadequate Legal Framework:** The **Digital Personal Data Protection (DPDP) Act, 2023** provides only a limited right to erasure based on consent and does not specifically address judicial records or public archives.
- 5. Institutional Gaps:** The Data Protection Board is not fully operational, and the DPDP Rules are yet to be notified, limiting effective implementation.

Way Forward

1. A comprehensive legal framework should clearly define the scope and limits of the Right to be Forgotten.
2. The DPDP Act should be strengthened to explicitly cover judicial records and digital archives where appropriate.

3. The Data Protection Board should be made fully functional to ensure timely and transparent decision-making.
4. A tiered mechanism should be adopted, where routine requests are handled by digital platforms, disputed cases by the Data Protection Board, and judicial matters by courts.
5. Stronger coordination among courts, search engines, legal databases, and social media platforms should be established to ensure effective compliance.
6. The Supreme Court should provide authoritative guidelines to ensure uniform implementation across the country.

Conclusion: The Delhi High Court judgment marks a significant step in protecting informational privacy while preserving open justice and freedom of expression. However, effective implementation will require a robust legal framework, operational institutions, technological cooperation, and clear judicial guidance to ensure that the Right to be Forgotten becomes a meaningful constitutional safeguard rather than merely a declaratory right.

Question: What is the Right to be Forgotten (RTBF)? Discuss the recent Delhi High Court judgment on the Right to be Forgotten, its significance, challenges, and the way forward.

Source: The Hindu

The Indian Diaspora as Australia's Identity, Its Future

UPSC Syllabus: Gs Paper 2- Indian diaspora.

Introduction

India has become **Australia's largest overseas-born community**, overtaking the England-born population for the first time. This marks a historic change in Australia's demographic profile and national identity. The Indian diaspora has become an important pillar of Australia-India relations. At the same time, its rapid growth has raised new social, political and policy challenges. The future of this partnership depends on understanding the diaspora beyond numbers and strengthening social cohesion.

Demographic Shift in Australia

1. **India becomes the largest overseas-born community:** India has overtaken **England** as the largest source of overseas-born Australians. This is the first time a **non-British-origin** migrant community has become the country's largest diaspora.
2. **A changing national identity:** Australia was shaped by a British-derived majority for nearly two centuries. The rise of the Indian-origin community reflects a lasting shift towards a more multicultural and Indo-Pacific identity.
3. **A young diaspora with a different migration history:** Large-scale Indian migration started mainly in the **1960s and 1970s** after the end of the **White Australia Policy**. Compared to the Indian communities in the **U.S. and U.K.**, the Australian Indian diaspora is relatively young.

4. **Strong links with India:** Many recent migrants arrived after **2014** during a period of higher outward migration from India. They remain closely connected with India through **families, businesses, remittances and cultural identity**.
5. **A permanent demographic transformation:** The growth of the Indian community is not a temporary trend. It reflects a long-term change that will continue to influence Australia's society and national identity.

Evolution of India–Australia Relations

1. **From Three Cs to Four Ds:** The relationship has moved beyond **Cricket, Curry and Commonwealth** to **Democracy, Defence, Diaspora and Dosti**. This reflects deeper political and strategic cooperation.
2. **Strategic partnership in the Indo-Pacific:** India and Australia have strengthened cooperation through the **Quad** with the **United States** and **Japan**. Defence and regional security have become central to bilateral relations.
3. **Diaspora becomes a strategic pillar:** The Indian community is no longer viewed only as a cultural link. It has become an important bridge connecting both countries at the social, political and economic levels.
4. **Growing political importance of the diaspora:** Public events such as '**Melbourne Meets Modi**' show that the Indian community has become politically and diplomatically significant. It now attracts attention from both governments and the wider public.

Contributions of the Indian Diaspora

1. **Supporting Australia's multicultural society:** The Indian diaspora strengthens Australia's multicultural character. It has become an important part of the country's changing social identity.
2. **Building economic and social connections:** Close family ties, business links and remittances keep strong connections between India and Australia. These networks support long-term cooperation between the two countries.
3. **Strengthening bilateral relations:** The diaspora acts as a people-to-people bridge that supports trust and engagement. It has become an important pillar of the broader Australia–India partnership.
4. **Expanding the partnership beyond economics:** The diaspora also contributes to civic, political and strategic engagement. This broadens cooperation beyond trade and migration alone.
5. **A source of national pride and partnership:** India views the diaspora as an important cultural link with Australia. At the same time, the community has become a valuable partner in strengthening bilateral relations.

Emerging Social and Political Challenges

1. **Rise of anti-immigration politics:** Australia has witnessed a growing anti-immigration wave, with campaigns such as "March for Australia" and the growing influence of the One Nation Party. The increasing size and visibility of the Indian diaspora have made it a major target in public and political debates.
2. **Changing public perception of the diaspora:** The Indian community was once mainly recognised for its economic contribution and support to multiculturalism. It is now also portrayed by some groups as creating pressure on jobs, housing, infrastructure and public services.
3. **Stereotypes ignore the diversity of the diaspora:** Indian Australians are often seen either as a "model minority" that succeeds in every field or as "surplus actors" adding pressure to the immigration system. These views ignore that the community includes people from different class, caste, language, religion, visa status and generations, whose experiences are very different.
4. **Different settlement and identity experiences:** Temporary visa holders, permanent residents and Australian-born Indians experience Australia differently. Their sense of belonging, political views, media habits and trust in institutions are not the same.
5. **Gaps in diaspora research:** Existing studies mainly measure income, education, employment and integration. They pay much less attention to trust, civic participation, democratic engagement and interactions with other communities.
6. **Threat to social cohesion:** Public debates based on stereotypes weaken trust between communities and reinforce social divisions. Excessive focus on communal identities can reduce the shared sense of belonging needed in a multicultural democracy.
7. **Weakening of long-term bilateral partnership:** Treating the diaspora mainly as a tool for trade, mobility or diplomacy overlooks its civic and political role. This limits the broader potential of the Australia-India partnership.
8. **Risk of division and foreign interference:** Without greater investment in inclusion and wellbeing, diaspora communities become more vulnerable to divisive campaigns and foreign interference. Better understanding and engagement are necessary to strengthen democratic resilience.

Policy Priorities for a Stronger Partnership

1. **Develop an evidence-based understanding of the diaspora:** Governments should move beyond measuring income, education, employment and trade. Research should also examine settlement experiences, trust in institutions, civic participation and the wellbeing of different diaspora groups.
2. **Recognise the diversity within the Indian diaspora:** Policies should acknowledge differences based on class, caste, language, religion, migration pathways and generations. Understanding these differences will help design more inclusive and effective policies.
3. **Strengthen social cohesion through bridging social capital:** Governments should promote interaction between different communities, not just within individual cultural groups. Stronger

intercultural ties will build trust, reduce stereotypes and strengthen Australia's multicultural democracy.

4. **Promote inclusive engagement and democratic participation:** Governments should work closely with civil society and diaspora organisations to improve public participation, strengthen trust in institutions and encourage a stronger sense of belonging.
5. **Treat the diaspora as a long-term strategic partner:** The Indian diaspora should be recognised as an active stakeholder in the Australia–India partnership, not merely as a symbol of bilateral relations. Greater investment in its inclusion will strengthen long-term cooperation and reduce the risk of social divisions and foreign interference.

Conclusion

The rise of the **Indian diaspora** marks a historic shift in Australia's demographic profile and national identity. Its growing role has strengthened the **Australia–India partnership**, but it has also exposed new social and political challenges. Building **social cohesion, trust, evidence-based policies and bridging social capital** is essential for ensuring that the diaspora remains a lasting pillar of democracy, multiculturalism and long-term strategic cooperation rather than merely a demographic or diplomatic symbol.

Source - [The Hindu](#)

How India Withstood the Crisis in West Asia

UPSC Syllabus: Gs Paper 3- Indian economy and infrastructure

Introduction

India has historically faced economic instability whenever global oil prices increased sharply because it imports nearly **90% of its crude oil** and depends heavily on the Gulf for oil, gas and fertilizers. The West Asia crisis again raised fears of inflation, fuel shortages and pressure on the economy. However, unlike previous crises, India managed the disruption effectively through strategic planning, diversified energy supplies, strong diplomacy and coordinated governance, demonstrating greater energy resilience than expected.

India's Response to the Energy Shock

1. **Managing a High-Risk Energy Crisis:** The Strait of Hormuz crisis exposed India to major risks because of its dependence on imported crude oil and LPG. Rising freight charges, shipping risks and higher crude prices increased the possibility of an energy and economic shock.
2. **Preventing Inflation and Supply Disruptions:** The government's immediate priority was to prevent higher global oil prices from causing inflation and fuel shortages within the country. Continuous monitoring and supply management ensured that essential petroleum products remained available.
3. **Containing Petrol Price Increase:** India limited the increase in petrol prices to 7.5% during the crisis. This was much lower than Germany (14%), the U.K. (19%), the U.S. (45%), Pakistan and the Philippines (over 50%), and Myanmar (almost 90%).

4. **Limiting Diesel Price Rise:** Diesel prices increased by only 8% in India, while the UAE recorded an increase of nearly 85%. This reflected India's effective retail fuel price management despite higher global crude prices.
5. **Protecting LPG Consumers:** India imports nearly 60% of its LPG requirement, yet a domestic LPG cylinder remained available at ₹942, while Ujjwala beneficiaries paid ₹642. These prices remained lower than those in Pakistan, Nepal and Sri Lanka, and much lower than in the U.S., Australia and Canada.
6. **Absorbing the Cost Instead of Passing It On:** Public sector Oil Marketing Companies (OMCs) absorbed much of the global price increase instead of transferring it to consumers. They incurred ₹74,781 crore in losses on petrol, diesel and LPG sales up to June 30, helping protect household budgets.

Managing Energy Security and Economic Stability

1. **High Dependence on Imported Energy:** India imports nearly 90% of its crude oil, making it highly sensitive to disruptions in global energy markets. Dependence on Gulf countries for oil, gas and fertilizers further increased this vulnerability.
2. **Economic Risks from Global Disruptions:** Higher crude prices, rising freight costs and shipping delays had the potential to increase inflation, widen the import bill and create uncertainty in the economy. The crisis also revived memories of the 1973 oil shock and the 1991 balance-of-payments crisis.
3. **Maintaining Macroeconomic Stability:** Despite global pressures, inflation broadly remained within the Reserve Bank of India's (RBI) target band. India also continued to remain the fastest-growing major economy, showing that external shocks did not derail overall economic stability.
4. **Balanced Energy Management:** The government followed a calibrated strategy that balanced consumer protection with macroeconomic stability. It avoided sudden fuel price increases while ensuring uninterrupted energy supplies across the country.
5. **Diversified Crude Supplies:** India reduced dependence on a single source by diversifying crude oil imports from different regions. This flexibility helped manage supply disruptions without creating major shortages.
6. **Strategic Inventory Management:** Careful inventory planning and coordination with public sector energy companies ensured continuous availability of petroleum products. This reduced the impact of temporary disruptions in global supply chains.
7. **Prudent Fuel Price Management:** Retail fuel prices were adjusted carefully instead of following every increase in international crude prices. This helped moderate inflationary pressure and protected consumers from sudden price shocks.

8. **Strong Domestic Growth Drivers:** Strong domestic demand, public investment and expanding manufacturing supported economic activity during the crisis. These factors helped the economy absorb external shocks more effectively.

Factors Behind India's Energy Resilience

1. **Strategic Diplomatic Partnerships:** India treated diplomatic relations as an important part of energy security. Decades of engagement with Iran and Gulf countries kept communication channels open even during the peak of the crisis.
2. **Support from Energy-Producing Countries:** Iran facilitated the movement of Indian ships, while Gulf producers continued supplying oil despite regional tensions. These trusted partnerships reduced the risk of supply disruptions.
3. **Diversified Energy Supplier Base:** India expanded energy partnerships beyond the Gulf to Russia, the U.S., Africa and Latin America. This reduced dependence on a single region and improved flexibility during geopolitical crises.
4. **Long-Term Energy Planning:** Investments made over the past decade strengthened India's ability to absorb external shocks. Higher ethanol blending, a growing renewable energy base, larger strategic petroleum reserves and stronger refining capacity improved energy resilience.
5. **Institutional Learning and Preparedness:** India's response reflected years of policy learning rather than short-term crisis management. Long-term planning enabled the country to respond quickly without major disruptions.
6. **Whole-of-Government Coordination:** Different ministries and national institutions worked together instead of functioning separately. This coordinated approach helped manage logistics, monitor risks and maintain uninterrupted energy supplies.
7. **Preparedness Over Panic:** The crisis showed that resilience comes from years of preparation rather than emergency decisions. Strategic foresight enabled India to handle the disruption more effectively than expected.

Government Initiatives and Institutional Coordination

1. **Integrated Government Response:** The Ministry of External Affairs, Ministry of Petroleum and Natural Gas, Ministry of Ports, Shipping and Waterways, the Indian Navy, the National Security Council Secretariat, State governments, municipal authorities, oil marketing companies and industry associations worked together to minimise disruptions and maintain energy supplies.
2. **Expansion of Gas Infrastructure:** Continuous investment expanded India's City Gas Distribution (CGD) network from 55 geographical areas in 2014 to more than 300. This increased access to cleaner fuels and improved energy security.

3. **Promotion of Piped Natural Gas (PNG):** The government encouraged the use of PNG wherever pipeline infrastructure was available. This reduced dependence on LPG and provided greater flexibility during supply disruptions.
4. **Support for Exporters:** Exporters affected by higher freight charges, insurance costs and shipping delays received liquidity support, logistics facilitation and simplified customs procedures. These measures helped businesses continue serving international markets.
5. **Strong Export Performance:** Government support enabled exporters to maintain production and shipments despite global uncertainty. As a result, merchandise exports grew by 16% during April–May FY27.
6. **Financial Stability Measures by the RBI:** The Reserve Bank of India (RBI) maintained comfortable liquidity, stable financial markets and a well-capitalised banking system during the crisis. These measures reduced financial uncertainty despite global volatility.
7. **Strengthening External Resilience:** Forex swap facilities, support for foreign currency deposits by Non-Resident Indians (NRIs) and rationalisation of taxes on Foreign Portfolio Investors (FPIs) strengthened India's external sector and improved its ability to manage external shocks.
8. **Coordinated Fiscal, Monetary and Administrative Action:** Fiscal policy, monetary policy and administrative measures complemented each other throughout the crisis. This coordinated response preserved macroeconomic stability even when many countries faced severe inflation, fuel shortages and supply-chain disruptions.
9. **Support for Indigenous Innovation:** Scientists at CSIR's National Chemical Laboratory (NCL) developed indigenous technology to produce Dimethyl Ether (DME) as an alternative to LPG. This can reduce dependence on imported cooking fuel in the long run.
10. **Expansion of Refining Capacity:** Continuous investment strengthened India's refining capacity, enabling refineries to process different grades of crude oil without affecting fuel quality. This improved supply flexibility during disruptions.

Way Forward

1. **Continue Diversifying Energy Sources:** India should further expand energy partnerships across different regions to reduce dependence on any single supplier and strengthen supply security.
2. **Strengthen Strategic Energy Capacity:** Continued investment in strategic petroleum reserves, refining capacity, renewable energy, gas infrastructure and alternative fuels will improve preparedness against future crises.
3. **Deepen Diplomatic Engagement:** Strong and stable relations with energy-producing countries should remain a priority. Active diplomacy can help secure reliable supplies during periods of global uncertainty.

4. **Promote Technological Innovation:** Greater support for indigenous technologies such as DME and cleaner energy solutions can reduce import dependence and strengthen long-term energy resilience.
5. **Maintain Institutional Coordination:** The coordinated approach among ministries, financial institutions, security agencies and industry should continue. Strong coordination can ensure faster responses to future geopolitical disruptions.

Conclusion

India's response to the West Asia crisis showed that **strategic planning, diversified energy supplies, strong diplomacy, technological capability and coordinated governance** can reduce the impact of global disruptions. Years of preparation helped India protect consumers, maintain economic stability and strengthen energy security. This resilience can become an important pillar in achieving the vision of **Viksit Bharat**.

Question for practice:

Discuss how India withstood the West Asia crisis despite its high dependence on imported energy, and examine the key factors that strengthened its energy security and economic resilience.

Source: [The Hindu](#)

Beyond childcare, four barriers to female participation in cities

Source: The post “Beyond childcare, four barriers to female participation in cities” has been created based on “Beyond childcare, four barriers to female participation in cities” published in “Indian Express” on 10th July 2026.

UPSC Syllabus: GS 2- Governance

Context: The Union Government has proposed amending the **Antyodaya Anna Yojana (AAY)** provisions under the **National Food Security Act (NFSA), 2013**. The recent proposal seeks to replace the existing **household-based entitlement** with a **per capita entitlement of 7 kg of foodgrains per person per month**, subject to a minimum of **35 kg per household**. While the Centre argues that the change will improve equity and transparency, States such as **Tamil Nadu and Kerala** have opposed it, citing adverse impacts on poor households.

Reason behind centre proposing the amendment

1. The existing household-based entitlement provides **35 kg of foodgrains per household**, irrespective of the number of family members.
2. This system creates **inequities**, as larger families receive less food per person than smaller families.
3. The proposed **per capita model** aims to ensure a more **equitable distribution** based on family size.
4. It also seeks to make foodgrain allocation **more transparent and rational**, reducing inequalities in entitlement.
5. However, the proposal retains a **minimum entitlement of 35 kg per household** to ensure that smaller families do not receive less than the existing allocation.

Reason behind Tamil Nadu and Kerala opposing the proposal

1. Reduction in allocation to many poor households

- a. Tamil Nadu and Kerala argue that many households with **fewer than five members** will receive **less than 35 kg** under the new formula.
- b. Since both States have a relatively smaller average family size, a significant number of beneficiaries would lose part of their current entitlement.

2. Wider regional disparities

- a. Southern States generally have **smaller household sizes** due to demographic transition.
- b. Consequently, they may receive **lower foodgrain allocations** compared to States with larger average family sizes.

3. Burden on State governments

- a. Tamil Nadu fears that it may have to **procure additional foodgrains from the open market** to maintain existing benefits.
- b. This would increase the **financial burden** on the State government.

4. Political and federal concerns

- a. Tamil Nadu has termed the proposal **discriminatory** and has demanded that the Centre retain the current household-based entitlement.
- b. Kerala has also expressed reservations over the proposed changes.

Issues with the existing household-based system

1. The current system benefits **small families disproportionately**, as every household receives the same quantity regardless of family size.
2. Larger households receive **less foodgrain per person**, creating inequitable outcomes.
3. According to the article, this household-based mechanism has resulted in **significant inequities depending on household size**.

Potential impact of the proposed amendment

1. Positive impacts

- a. The amendment can make foodgrain distribution **fairer on a per-person basis**.
- b. It aligns allocation more closely with the actual number of beneficiaries.
- c. It addresses long-standing inequities faced by larger households.

2. Concerns

- a. Many households with **less than five members** may receive lower monthly allocations.
- b. Southern States with **smaller family sizes** may witness a decline in their total foodgrain allocation.
- c. The proposal may deepen **regional disparities** if demographic differences are not considered.

Way Forward

1. The Centre should evolve the amendment through **consultation and consensus** with States.
2. Foodgrain allocation should balance **equity with regional demographic realities**.

3. A **middle path** can be considered by retaining the **minimum entitlement of 35 kg per family**, irrespective of family size, while gradually moving towards a fairer distribution model.
4. Cooperative federalism should guide reforms to ensure that **no State or beneficiary is disproportionately affected**.

Conclusion: The proposed revision seeks to make foodgrain allocation under NFSA more equitable by adopting a per capita approach. However, concerns regarding regional disparities, fiscal burden on States, and the impact on small households need careful consideration. A balanced, consultative approach is essential to ensure that reforms strengthen both **food security and cooperative federalism**.

Question: The proposed revision to the Antyodaya Anna Yojana (AAY) under the National Food Security Act (NFSA) has triggered concerns over equity and regional disparities. Examine the rationale behind the proposal and discuss the concerns raised by States.

Source: [Indian Express](#)

Why is the Centre revising the NFSA?

Source: The post “Why is the Centre revising the NFSA?” has been created based on “Why is the Centre revising the NFSA?” published in “The Hindu” on 10th July 2026.

UPSC Syllabus: GS 2- Governance

Context: The latest **National Statistics Office (NSO)** report shows encouraging progress in women's economic participation in urban India. Female Labour Force Participation Rate (LFPR) in million-plus cities has increased from **19.8% in 2017-18 to 27.2% in 2025**. Women are also increasingly becoming entrepreneurs, with **over 20% of unincorporated establishments** being run by women in **32 out of 46 million-plus cities**. However, female LFPR remains significantly lower than the male LFPR of **75.9%**, indicating persistent structural barriers.

Positive Trends

1. Rising Female Labour Force Participation: Female LFPR has witnessed the highest increase among all demographic groups. Cities have emerged as important centres of employment opportunities for women.

2. Growth in Women Entrepreneurship: Women are increasingly establishing and managing businesses. Cities such as **Surat, Vadodara and Pune** have nearly **40% of unincorporated establishments** run by women.

Major Barriers Beyond Childcare

1. Mobility and Safe Transportation

- a. Women's participation begins with their ability to travel safely to work.
- b. More than half of women report experiencing harassment or feeling unsafe while using public transport.
- c. Women often undertake **chained journeys**, combining work with childcare and household responsibilities.

- d. Urban transport systems remain designed primarily for simple home-to-office commutes, failing to address women's travel patterns.
- e. Unsafe and unreliable transport discourages women from entering the labour market.

2. Limited Access to Public Spaces

- a. Women often feel that they need a legitimate reason to occupy public spaces.
- b. They are less likely to use parks, cafés or streets freely compared to men.
- c. The issue extends beyond physical safety and reflects unequal social norms.
- d. Cities need to be designed with the assumption that women are equal participants in public life.

3. Barriers to Career Progression

- a. Women continue to face difficulties in reaching leadership positions despite entering the workforce.
- b. Only **5% of NSE-500 companies** are led by women.
- c. Career stagnation is not explained solely by maternity or caregiving responsibilities.
- d. Unconscious bias influences promotion decisions.
- e. Leadership traits such as assertiveness are often viewed positively in men but negatively in women.
- f. Women also tend to apply for jobs only after meeting nearly all eligibility criteria, while men often apply after meeting around **60%** of the qualifications.
- g. Supporting women in leadership expands the talent pool and strengthens merit rather than compromising it.

4. Limited Access to Finance

- a. Women-led MSMEs face a **credit gap of around 35%**.
- b. Limited collateral, lower property ownership and weaker financial literacy restrict access to institutional credit.
- c. Less than **5% of venture capital funding** in India goes to start-ups with a woman founder.
- d. Investors often ask women founders risk-focused "prevention" questions, while men receive growth-oriented "promotion" questions, creating funding biases.

Way Forward

1. Urban transport should be made **safe, reliable and gender-responsive**, keeping women's travel patterns in mind.
2. Public spaces should be designed to ensure that women can participate freely and confidently in city life.
3. Organisations should promote **gender-sensitive leadership policies**, eliminate unconscious bias and ensure equal opportunities for career advancement.
4. Financial institutions should improve women's access to **credit, collateral-free loans, venture capital and financial literacy programmes**.
5. Affordable childcare facilities should continue to be strengthened alongside broader structural reforms.
6. Urban planning should adopt a **gender-inclusive approach** so that cities become truly enabling spaces for women.

Conclusion: Urban India has created new opportunities for women through rising employment and entrepreneurship. However, mobility constraints, exclusion from public spaces, workplace bias and unequal

access to finance continue to limit women's economic participation. Addressing these structural barriers through gender-responsive governance and inclusive urban planning is essential to achieving genuine economic empowerment and inclusive growth.

Question: Despite a rise in female labour force participation in urban India, structural barriers continue to limit women's economic empowerment. Discuss the key challenges and suggest measures to improve women's participation in cities.

Source: The Hindu

Building a Durable India–Australia Partnership

UPSC Syllabus: Gs Paper 2- International Relation

Introduction

Prime Minister Narendra Modi's Australia visit (8–10 July 2026) marked another important milestone in strengthening the India–Australia Comprehensive Strategic Partnership (CSP). The visit reflected growing strategic convergence between the two countries through new initiatives in defence, maritime security, trade, technology, energy and people-to-people ties. The larger challenge now is to convert this shared strategic understanding into lasting institutional alignment through practical cooperation, stronger implementation and sustained public trust.

Why the India–Australia Partnership Matters

1. **Shared Strategic Vision:** Both countries are responding to a rapidly changing global environment by strengthening their Comprehensive Strategic Partnership. They seek to promote peace, prosperity and stability in the Indo-Pacific through closer cooperation.
2. **The Partnership is Moving Beyond Shared Interests:** India and Australia are no longer limiting cooperation to common strategic thinking. They are creating institutional mechanisms, such as the Joint Declaration on Defence and Security Cooperation, Maritime Security Collaboration Roadmap, and PACTS, to build a durable partnership.
3. **Reducing Strategic Dependence:** Australia wants to diversify beyond economic dependence on China and alliance dependence on the United States. India is also reducing dependence by diversifying energy suppliers, defence platforms and critical mineral processing.
4. **Managing an Uncertain Global Order:** The Iran and Ukraine conflicts have shown that dependence on a single partner has become risky. India and Australia recognise that cooperation with trusted partners improves their strategic resilience.
5. **Strong Political Commitment:** The bilateral relationship enjoys bipartisan support in Australia. Regular leadership meetings, ministerial engagements and economic roadmaps demonstrate sustained political commitment from both governments.

6. **A Trusted Regional Partnership:** India remains a trusted security partner rather than a military ally. This allows both countries to deepen cooperation while maintaining their independent foreign policies.

Major Developments in India–Australia Partnership

1. **Strengthened Defence Cooperation:** The two Prime Ministers announced a Joint Declaration on Defence and Security Cooperation to deepen defence ties and enhance regional security. An Annual Defence Ministers' Dialogue will further strengthen regular consultations.
2. **Expanded Maritime Security Framework:** A Memorandum of Understanding between Australia's Maritime Border Command and the Indian Coast Guard and the India–Australia Maritime Security Collaboration Roadmap will improve information sharing, operational coordination and maritime security.
3. **Operational Nuclear Cooperation:** Australian uranium exports to India became operational after reforms under the SHANTI Act enabled implementation of the earlier civil nuclear agreement. Both countries also signed arrangements for longterm peaceful uranium exports under IAEA safeguards.
4. **Launch of PACTS:** The Australia–India Partnership on Cyber, Critical Technologies and Supply Chains (PACTS) was launched to strengthen cooperation in cyber security, digital resilience, critical technologies, defence research and resilient supply chains.
5. **Technology and Innovation Partnerships:** The leaders reaffirmed the complementary role of the Australia–Canada–India Technology and Innovation Partnership (ACITI). They also agreed to explore a bilateral innovation framework linking governments, industries, universities and research institutions.
6. **Economic and Business Engagement:** Both countries reaffirmed their commitment to progressing a Comprehensive Economic Cooperation Agreement (CECA). They also encouraged stronger business partnerships through the CEO Forum, private investment and continued implementation of Australia's economic roadmap for India.
7. **Growing Defence Industry Cooperation:** Defence cooperation is expanding beyond military exercises to defence manufacturing, research, logistics, military education and industry partnerships. Efforts are also underway to strengthen collaboration through defence trade missions and institutional exchanges.

Key Areas of Cooperation in the India–Australia Partnership

1. **Maritime Security:** Both countries consider the Indian Ocean central to their strategic interests. They are expanding cooperation in maritime domain awareness, information sharing, capability development and operational coordination to ensure secure sea lanes.
2. **Defence and Security:** Defence cooperation now covers all domains through joint exercises, logistics support, military education, defence research and interoperability with trusted partners. Both countries also aim to strengthen defence industries and innovation.

3. **Trade, Investment and Economic Security:** Bilateral trade has grown under the Economic Cooperation and Trade Agreement (ECTA). Both sides are working towards CECA, reducing non-tariff barriers, increasing investment and strengthening business-to-business cooperation.
4. **Critical Minerals and Supply Chains:** India and Australia are promoting partnerships in critical minerals through government agencies, industries and research institutions. They also seek secure long-term supply arrangements and stronger processing capabilities to improve economic security.
5. **Energy and Climate Cooperation:** Both countries are strengthening cooperation in energy security, renewable energy and electrification. They also support climate action through the Paris Agreement, climate finance, technology transfer and initiatives under the India–Australia Renewable Energy Partnership.
6. **Technology, Space and Innovation:** Cooperation is expanding in cyber security, critical technologies, digital resilience, space research and innovation. Australia continues supporting India's Gaganyaan programme while both countries promote industry and research partnerships.
7. **Education, Skills and People-to-People Links:** The growing Indian community, now Australia's largest overseas-born group, remains central to bilateral relations. Cooperation is expanding through Australian university campuses in India, skill development, parliamentary exchanges and the Maitri grants for stronger people-to-people ties.
8. **Regional and Multilateral Cooperation:** India and Australia work together through the Quad, Indian Ocean Rim Association (IORA), Indo-Pacific Oceans Initiative (IPOI), Australia–India–Indonesia trilateral mechanism, Pacific Islands Forum (PIF) and ASEAN-led institutions. They also support UN Security Council reforms and stronger cooperation against terrorism.

Key Challenges

1. **Converting Convergence into Alignment:** India and Australia have developed strong strategic convergence, but long-term success depends on converting it into practical cooperation through institutions, regular mechanisms and operational partnerships.
2. **Different Strategic Priorities:** Both countries share interests in the Indian Ocean, but their broader defence priorities remain different. Australia continues to focus heavily on the Western Pacific through AUKUS, while India must balance both continental and maritime security challenges.
3. **Limited Operational Integration:** New agreements have narrowed the gap between strategic intent and practical cooperation, but deeper interoperability and sustained operational coordination are still required for durable alignment.
4. **Uneven Benefits from Trade:** Trade has expanded after the Economic Cooperation and Trade Agreement (ECTA) came into force, but many smaller exporters remain unaware of its opportunities. This operational gap limits wider business participation.

5. **Low Public Awareness of India's Strategic Role:** Public understanding of India's global importance remains limited in Australia. The Lowy Institute Poll found that only 5% of Australians expect India to become the world's most important power in the next decade, compared to 54% for China.
6. **Untapped Potential of the Indian Diaspora:** The Indian diaspora is widely recognised for its contribution, but its strengths have not been fully institutionalised to support business cooperation, public awareness and long-term strategic engagement.
7. **Migration-Related Concerns:** Greater mobility of Indian professionals should be encouraged, but it must also be managed alongside Australia's increasingly sensitive domestic migration politics.

Future Priorities

1. **Institutionalise Strategic Alignment:** Future cooperation should focus on strengthening long-term institutions, regular dialogues and practical mechanisms that make the partnership more durable than leadership-level convergence alone.
2. **Deepen Maritime Cooperation:** Both countries should fully implement the India–Australia Maritime Security Collaboration Roadmap by expanding information sharing, capacity building, operational coordination and maritime domain awareness in the Indian Ocean.
3. **Expand Economic Integration:** Completing the Comprehensive Economic Cooperation Agreement (CECA), promoting investment and increasing awareness among small businesses can unlock the full economic potential of the partnership.
4. **Strengthen Critical Technology Partnerships:** Greater cooperation in cyber security, critical technologies, defence research, innovation and resilient supply chains should remain a priority under PACTS and related technology partnerships.
5. **Build Stronger Energy and Critical Mineral Partnerships:** Long-term cooperation in uranium exports, renewable energy, critical minerals and secure supply chains can strengthen both countries' economic and energy security.
6. **Leverage the Indian Diaspora:** The Indian community should become a stronger bridge for trade, investment, education and business cooperation, especially by helping Australian and Indian SMEs understand each other's business and regulatory environment.
7. **Promote a Stable Indo-Pacific:** India and Australia should continue working through the Quad, IORA, IPOI, ASEAN-led institutions and other regional platforms to support a free, open, rules-based, peaceful and prosperous Indo-Pacific, while strengthening cooperation against terrorism and supporting multilateral reforms.

Conclusion

India and Australia have moved well beyond a traditional bilateral relationship towards a broad strategic partnership. The next phase depends on converting shared interests into lasting institutions, stronger

economic and security cooperation, deeper public engagement and effective implementation. Durable strategic alignment, rather than temporary convergence, will determine the long-term strength of this partnership.

Question for practice:

Evaluate the significance of recent developments in the India–Australia Comprehensive Strategic Partnership in transforming strategic convergence into a durable strategic alignment.

Source: [The Hindu](#)

Should India Restart Dialogue with Pakistan?

UPSC Syllabus: Gs Paper 2- International Relation

Introduction

India and Pakistan have not held government-level dialogue since **2016**, when talks collapsed after the **Pathankot** and **Uri** terror attacks. Relations further deteriorated after **Pulwama (2019)** and **Pahalgam (2025)**. Recent appeals by eminent citizens, comments from the **RSS**, and growing debate among strategic experts have revived the question of whether India should restart dialogue. The discussion reflects two clear positions—one supports engagement despite tensions, while the other insists that terrorism and present conditions in Pakistan must shape any future talks.

Evolution of India–Pakistan Dialogue

1. **Breakdown of Official Talks:** India and Pakistan have not engaged in official dialogue since **2016**. Repeated terror attacks and growing mistrust have kept diplomatic engagement suspended.
2. **Renewed Debate on Engagement:** A joint appeal by eminent citizens led by **O.P. Shah** and later comments by **RSS General Secretary Dattatreya Hosabale** reopened the debate on restarting dialogue. These remarks received support from several former officials while also triggering political criticism.
3. **Dialogue Remains Suspended:** Official talks have remained suspended since 2016 because repeated terror attacks deepened mistrust.
4. **Dialogue Beyond Governments:** Even when governments do not engage, communication between people supporting peace should continue. Such contact helps preserve trust during periods of political tension.
5. **Engagement Is With the State:** Governments and leaders change over time, but relations remain between two countries. Therefore, dialogue should not depend only on the individual currently holding power.

Arguments in Favour of Restarting Dialogue

1. **Nuclear Powers Need Communication:** India and Pakistan are **nuclear-armed neighbours**. Regular dialogue is important because misunderstanding during periods of hostility can increase risks.

2. **Long Suspension Has Not Solved Problems:** Supporters argue that twelve years without dialogue have not reduced tensions, making engagement necessary.
3. **Military Leadership Has Delivered Agreements Earlier:** Successful negotiations have previously taken place with Pakistani military rulers. **Ayub Khan** helped conclude the **Indus Waters Treaty**, **Zia-ul-Haq** eased the **Siachen** deadlock, and **Pervez Musharraf** advanced a four-point understanding on **Kashmir**.
4. **Military Rule Alone Should Not Prevent Talks:** Supporters argue that India regularly engages governments of different political systems across the world. Therefore, Pakistan's military influence alone should not become a permanent reason to avoid dialogue.
5. **Dialogue Does Not Mean Weakness:** Negotiating does not require compromising national security. A country can conduct military operations when required and still maintain diplomatic communication.
6. **Political Signals Are Emerging:** RSS General Secretary **Dattatreya Hosabale** called for keeping the door open for dialogue, and **General Manoj Naravane** also supported engagement. Some analysts believe such voices may create political space for any future government initiative.

Concerns Against Immediate Dialogue

1. **Current Leadership Creates Doubts:** The main concern is the dominant role of **Field Marshal Asim Munir**. Critics question whether the present military leadership has enough incentive to pursue lasting peace.
2. **Terrorism Remains the Biggest Obstacle:** Every major attempt at dialogue has often been followed by a terror attack. This makes it difficult for any elected government to justify restarting talks.
3. **Political Cost of Peace Initiatives:** Leaders such as **Atal Bihari Vajpayee** and **Narendra Modi** attempted diplomatic outreach towards Pakistan. However, every such effort carried significant domestic political risks.
4. **Pakistan's Internal Instability:** Frequent disturbances inside Pakistan create uncertainty about whether any commitments made during dialogue can be implemented effectively.
5. **Trust Deficit Remains High:** The **Indus Waters Treaty** remains suspended after the **Pahalgam attack**, and recent exchanges between the two militaries show that serious differences continue.
6. **Visible Action Is Needed:** Some believe dialogue should begin only after Pakistan shows clear action against terrorist camps. Without such confidence-building measures, negotiations may fail again.

Can Dialogue and Counter-Terrorism Go Together?

1. **Different Views on Preconditions:** One side believes dialogue should begin immediately because waiting has achieved nothing. The other argues that action against terrorism must come before any formal engagement.

2. **Security Cannot Be Ignored:** Any future dialogue must directly address cross-border terrorism. Ignoring this issue would weaken public confidence in the peace process.
3. **Some Military Responses Show Restraint:** During the accidental **BrahMos missile** incident, the Pakistan Army reacted calmly despite civilian criticism. This is cited as an example that military leadership can sometimes act responsibly.
4. **Negotiations Will Remain Difficult:** India is likely to demand an end to cross-border terrorism, while Pakistan may raise issues such as **Balochistan** and **Pakistan-occupied Kashmir (PoK)**. These competing positions will continue to complicate negotiations.
5. **Backchannel Contacts Continue:** **Track 1.5** and **Track 2** meetings in **Muscat, Doha, Thailand and London** have quietly continued after the **2025** conflict. These discussions serve as confidence-building mechanisms rather than substitutes for official diplomacy.

The Way Forward

1. **Begin With Functional Cooperation:** Initial engagement can focus on issues that directly affect ordinary people instead of politically sensitive disputes. This can help rebuild trust gradually.
2. **Expand Cooperation on Climate Issues:** Both countries face serious climate vulnerabilities. Climate-related discussions can provide practical cooperation without involving territorial disagreements.
3. **Work Together on Air Pollution:** Seasonal crop residue burning affects both sides of the border. Joint efforts on air pollution can deliver direct public benefits.
4. **Maintain Security Alongside Diplomacy:** Dialogue should not replace India's security policy. Diplomatic engagement and strong counter-terrorism measures should continue together.
5. **Use Informal Channels:** **Track 1.5**, **Track 2**, retired officials and civil society interactions can help reduce misunderstandings and prepare the ground for formal negotiations.
6. **Changing Regional Environment:** Some analysts believe regional diplomacy has changed after **2025**. Pakistan's growing engagement with the **United States** and changing regional equations have strengthened the case for diplomatic engagement.
7. **Political Space Will Be Essential:** Strategic discussions are increasing, but official dialogue still requires clear political will. Quiet signalling alone cannot replace government-level decisions.

Conclusion

India's Pakistan policy faces a difficult balance between **national security** and **diplomatic engagement**. Supporters believe continuous dialogue can reduce tensions between **two nuclear neighbours**, while critics insist that **credible action against terrorism** must come first. A cautious approach combining **security preparedness, confidence-building measures, informal engagement, and functional cooperation** offers the most practical path towards any future dialogue.

Question for practice:

Examine the key arguments for and against restarting dialogue between India and Pakistan, and suggest the way forward.

Source: [The Hindu](#)

Revisiting Early Warning Systems Amid Western Ghats Landslides

Source: The post “Revisiting Early Warning Systems Amid Western Ghats Landslides” has been created based on “Revisiting Early Warning Systems Amid Western Ghats Landslides” published in “Indian Express” on 11th July 2026.

UPSC Syllabus: GS 3 - Disaster Management

Context: Landslides are one of the most frequent natural disasters in India's mountainous regions, particularly in the **Western Ghats** and the **Himalayas**. Around **13% of India's land area (0.42 million sq km)** is prone to landslides, according to the **National Disaster Management Authority (NDMA)**. The recent landslides in **Wayanad** and other parts of the Western Ghats have highlighted the urgent need for robust **Early Warning Systems (EWS)** to minimise loss of life and property.

Need for Landslide Early Warning Systems

1. Early Warning Systems can predict landslides in highly vulnerable locations and provide sufficient time for evacuation.
2. Timely evacuation can significantly reduce casualties, as demonstrated by successful experiences in **Switzerland (2023 and 2025)**.
3. The evacuation before the **2024 Munnar landslides** in Kerala prevented loss of life because warnings were issued by researchers from **Amrita University**.
4. Early warning systems strengthen disaster preparedness and improve the response capacity of district administrations.

Existing Initiatives in India

1. Sensor-based Early Warning System (Amrita University Model)

- a. Researchers have installed instruments such as **tilt meters, pressure gauges and accelerometers** at vulnerable slopes.
- b. These sensors continuously monitor ground movement, vibrations and slope stability.
- c. A warning is issued when sensor readings cross predefined safety thresholds.
- d. This method is scientifically robust and provides sufficient lead time for evacuation.

2. Probabilistic Forecasting Model (IIT Mandi Model)

- a. The IIT Mandi team has developed a satellite-based landslide forecasting model.
- b. The model identifies vulnerable locations using a database of previous landslides.
- c. It combines highly localised rainfall forecasts with soil conditions, rock stability, slope characteristics and population density.
- d. Around **7–10 rainfall-derived parameters** are analysed for every location.
- e. The model has been validated against nearly **80 actual landslides** in the Himalayan region.

Challenges

1. Sensor-based systems provide information only for the specific slope where instruments are installed and cannot monitor neighbouring slopes.
2. Landslides are highly localised events, making prediction difficult across large regions.
3. High-resolution local rainfall forecasts are currently available only on the same day or one day in advance, limiting the warning period.
4. India has not yet comprehensively identified all high-risk landslide-prone zones for targeted deployment of sensors.
5. Resource constraints and inadequate institutional coordination slow down large-scale implementation.

Way Forward

1. India should comprehensively identify high-risk landslide-prone areas where frequent landslides threaten lives and property.
2. Sensor networks should be installed at the most vulnerable locations across the Western Ghats and the Himalayan region.
3. The India Meteorological Department should strengthen high-resolution local rainfall forecasting to provide longer lead times.
4. Satellite-based forecasting should be integrated with ground-based sensor networks for more accurate predictions.
5. Strong coordination among research institutions, IMD, NDMA, State Disaster Management Authorities and district administrations should be ensured.
6. Adequate financial resources and sustained policy support should be provided to establish a nationwide landslide Early Warning System within the next few years.

Conclusion: Landslides cannot be completely prevented, but their devastating impacts can be significantly reduced through scientific prediction, timely warnings and efficient evacuation. A combination of **sensor-based monitoring, satellite-based probabilistic forecasting** and **improved weather prediction** can build a reliable and comprehensive landslide Early Warning System, making India's disaster management framework more resilient.

Source: [Indian Express](#)

Question: Landslides in the Western Ghats and Himalayan region highlight the urgent need for effective Early Warning Systems (EWS). Discuss the significance, existing initiatives, challenges, and the way forward for landslide early warning systems in India.

A future of financial health for every Indian

Source: The post "A future of financial health for every Indian" has been created based on "A future of financial health for every Indian" published in "The Hindu" on 6th July 2026.

UPSC Syllabus: GS 3 – Indian Economy

Context: Financial health refers to ensuring that individuals have access to the right financial policies, products and services to manage daily expenses, remain resilient during financial shocks, save and invest for future goals, and achieve long-term financial security. As India moves towards Viksit Bharat 2047, the focus should shift from merely opening bank accounts to improving the overall financial well-being of every citizen.

About Financial Health

1. Financial health enables people to manage day-to-day expenses effectively.
2. It helps individuals remain financially resilient during unexpected shocks such as disasters or medical emergencies.
3. It encourages saving and investing for both short-term and long-term goals.
4. It provides confidence and financial security for the future.
5. Financial health goes beyond owning a bank account by ensuring access to insurance, pensions, responsible credit and investments.

Importance of Financial Health Important for India

1. India has witnessed remarkable progress in financial inclusion, with adult account ownership increasing from 56% to 89% within ten years (World Bank Global Findex).
2. Financially healthy households contribute to resilient economic growth and national prosperity.
3. It supports the vision of transforming "welfare to wealth creation" under Viksit Bharat 2047.
4. It strengthens trust in financial institutions and improves household financial stability.

Examples Highlighted in India

1. Informal workers have started saving for retirement through the National Pension System (NPS).
2. Informal workers in Delhi are benefiting from retirement accounts supported by Universal Pensions.
3. Nurses in Mumbai have improved financial stability through workplace financial products such as responsible credit, financial health scores and insurance.
4. Regulators and banks are using Artificial Intelligence (AI) to improve financial decision-making, increase savings, expand insurance coverage and tackle fraud.

Steps to Strengthen Financial Health

1. Develop Jan Dhan 2.0

- a. The Pradhan Mantri Jan Dhan Yojana (PMJDY) should evolve from a basic bank account scheme into a comprehensive household financial resilience platform.
- b. PMJDY should be integrated with Direct Benefit Transfers (DBTs), PM-KISAN, MGNREGA wage payments, e-Shram, Atal Pension Yojana (APY), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), and Pradhan Mantri Suraksha Bima Yojana (PMSBY).
- c. Linking multiple schemes through a single account will strengthen household financial security.
- d. Women, who hold the majority of PMJDY accounts, along with migrants, informal workers and gig workers, will benefit significantly.

2. Leverage Digital Public Infrastructure

- a. India should utilise its strong Digital Public Infrastructure to improve financial health.
- b. Platforms such as MahaVISTA, Account Aggregator, Unified Lending Interface (ULI), DigiLocker and AI-based applications should be expanded.
- c. These technologies can strengthen financial capability, improve access to credit and increase consumer choice.

3. Use Data for Better Policymaking

- a. Household surveys, administrative databases and digital platforms should be used to generate financial health data.
- b. This information can improve policymaking, strengthen consumer protection and enhance accountability in the financial sector.

4. Strengthen Public-Private Collaboration

- a. Government, regulators, financial institutions, employers and fintech companies should work together.
- b. Public-private partnerships can expand financial services, promote innovation and improve financial well-being.
- c. Countries such as the Netherlands and Indonesia demonstrate the benefits of such collaboration.

Conclusion: India's next leap should focus on ensuring financial health for every citizen, rather than merely financial inclusion. By strengthening Jan Dhan 2.0, digital public infrastructure, data-driven policymaking and public-private partnerships, India can build financially resilient households and achieve the vision of Viksit Bharat 2047.

Question: Financial health is emerging as the next stage of financial inclusion in India. Discuss the concept of financial health and suggest measures to strengthen it for achieving the goal of Viksit Bharat 2047.

Source: [The Hindu](#)

Fix the House: On Social Media, Social Media Access

UPSC Syllabus: Gs Paper 2- Governance

Introduction

During his visit to Australia, Prime Minister Narendra Modi praised Australia's decision to ban social media access for children below 16 years and said India was learning from the move. His remarks have strengthened the debate on introducing age-based restrictions in India. As concerns over children's online safety and mental health grow, policymakers face a larger challenge of balancing children's rights with safer and more responsible digital platforms.

Social Media and Children: Opportunities and Risks

1. **Role in children's lives:** Social media supports learning, communication, play, self-expression, friendships, and identity development. These opportunities are also important for the realisation of children's rights..
2. **Support and access to information:** Digital platforms provide **peer support, mental health information, and access to LGBTQIA+ communities**. These opportunities are important for many children who may not find similar support offline.

3. **Risks to children's well-being:** Social media can affect **sleep, expose children to cyberbullying, addictive recommendation systems, self-harm content, and eating disorder-related material**. These risks have increased concerns about children's online safety.
4. **Growing global concern:** Many countries believe that social media companies have not effectively protected children. This has led governments to consider stronger regulations instead of depending only on voluntary action by platforms.
5. **Policy debate:** Supporters view age restrictions as a way to reduce children's exposure to online harms. Critics argue that safer platform design and stronger company responsibility are more effective than access bans alone.
6. **Need for a balanced approach:** Social media offers both **important opportunities and serious risks**. The challenge is to maximise its benefits while reducing harm through effective regulation.

What Does the Evidence Say?

1. **Association is clear, causation is uncertain:** Research shows a clear association between **social media use and mental health problems**, especially among girls. However, experts still debate **how much of this relationship is directly caused by social media**.
2. **Limits of existing research:** Most studies are **observational**, making it difficult to establish cause and effect. Teenagers already facing depression may spend more time online, making the relationship more complex.
3. **Quality of use matters more than time:** Experts argue that **how children use social media** is often more important than the number of hours spent online. Active participation and supportive communities create different experiences from passive browsing or hostile online spaces.
4. **Australia's experience:** Australia became the **first country to ban social media access for children below 16 years**, making it a **real-world policy experiment**. However, there is **no clear evidence yet that the ban improves children's mental health**, and research estimates that **around 85% of children aged 12–16 still continue to use social media**, highlighting enforcement challenges.
5. **Different expert opinions:** Some psychologists believe governments should act quickly instead of waiting for perfect evidence, similar to lessons from tobacco control. Others believe policies should rely on stronger evidence before introducing nationwide bans.

India's Emerging Regulatory Framework

1. **Growing policy focus:** The Central Government is actively examining **age-based safeguards** for children. Prime Minister **Narendra Modi** praised Australia's reforms and said India was learning from that experience.
2. **Consultations with stakeholders:** The government has held discussions with **social media companies and other stakeholders** to develop safeguards for minors. Online safety has become an important policy priority.

3. **Preference for graded regulation:** Instead of a complete ban, the Centre is considering **age-based restrictions**. A separate law regulating children's access to social media may also be introduced.
4. **State-level proposals:** **Karnataka** has proposed banning social media for children below **16 years**, while **Andhra Pradesh** plans restrictions for those below **13 years**. **Goa** is also examining similar measures.
5. **Three age categories under consideration:** The proposed framework includes **8–12 years** with the strictest controls, **12–16 years** with monitored access, and **16–18 years** with comparatively flexible safeguards.
6. **Possible regulatory measures:** The proposals include **time-based restrictions, daily usage limits, mandatory parental consent for account creation, and age-verification systems** on digital platforms.
7. **Constitutional jurisdiction:** **Entry 31 of the Union List (List I) of the Seventh Schedule** gives **Parliament exclusive power** to regulate **telecommunications and the internet**. Therefore, state-level social media bans may face jurisdictional challenges.
8. **Legal framework:** India's digital ecosystem is mainly governed through the **Information Technology Act, 2000** and the **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, which regulate digital intermediaries and online platforms.
9. **Economic Survey recommendation:** The **Economic Survey 2025–26** recommended **age-based limits on children's social media use and digital advertisements**. It also suggested promoting **basic phones or education-only tablets with usage limits and content filters** to reduce children's exposure to harmful material.

Global Approaches

1. **Australia's model:** Australia became the **first country** to enforce a nationwide **minimum age of 16 years** for social media accounts. Platforms are required to deactivate accounts held by underage users.
2. **Indonesia's proposal:** Indonesia has announced plans to **ban high-risk social media platforms** for children below **16 years** as part of efforts to improve online safety.
3. **France's proposal:** France has proposed **restricting social media access for children below 15 years**, reflecting growing concern over children's digital well-being.
4. **China's approach:** China has adopted **strict time limits on children's online gaming**, showing that some countries prefer regulating digital use instead of relying only on platform bans.
5. **Global regulatory trend:** Different countries are adopting different models, but all reflect a **growing shift towards stronger government intervention** to protect children in the digital space.

Challenges in Age-Based Restrictions

1. **Limited evidence of effectiveness:** Although social media use is linked with harm, there is **no clear evidence that age-based bans alone improve children's mental health**. The relationship between social media use and harm remains complex.
2. **Children's rights may be affected:** Strict restrictions may **limit children's access to educational resources, health information, supportive communities, and opportunities for self-expression**, affecting the enjoyment of their rights.
3. **Risk of unsafe alternatives:** Children may shift towards **less-regulated online spaces** and become less willing to seek help if they face online harm.
4. **Reduced platform accountability:** Focusing only on age restrictions may **reduce pressure on technology companies** to improve platform design, provide age-appropriate services, and strengthen content moderation.
5. **Privacy and implementation concerns:** **Age-verification systems** may create privacy and data protection concerns. Enforcement may also shift greater responsibility to parents and caregivers.
6. **Different needs of children:** A single age limit cannot reflect the **different developmental stages, abilities, and circumstances** of all children. There is no consensus on the most appropriate minimum age for social media access.
7. **Enforcement challenges in India:** Any nationwide restriction would be difficult to implement because India has **over 1.1 billion smartphone connections** and one of the **world's largest populations of young internet users**.

The Way Forward

1. **Child-centred policymaking:** Policymakers should conduct **child rights impact assessments** before introducing age-based restrictions. **Children and adolescents** should also be involved so that policies reflect their needs and experiences.
2. **Clear and evidence-based regulation:** The objective of regulation should be clearly defined, whether it is to reduce **cyberbullying, sexual victimisation, harmful content, or mental health risks**. Age limits should be based on **research on child development and online risks**.
3. **Platform accountability over access control:** Rather than mainly deciding who may enter social media, governments should focus on how platforms operate. Companies should improve **content moderation, safer platform design, privacy protection, chronological feeds for minors, and effective parental controls**.
4. **Promote digital literacy and family support:** Children should receive **digital literacy, critical thinking, and online safety education** from an early age. Parents and educators should also receive the guidance needed to support safe digital use.
5. **Adopt a comprehensive approach:** **Age-based restrictions alone cannot eliminate online harm**. Children's safety requires coordinated action by **families, schools, communities, governments, and technology companies**, while protecting opportunities for learning, communication, and positive digital participation.

6. **Monitor implementation and outcomes:** Governments should develop **evaluation frameworks** to measure whether regulations reduce harm and improve children's online safety. Stakeholders should also work together to develop **privacy-respecting and technically feasible age-verification systems**.

Conclusion

Protecting children online requires a balanced and evidence-based approach. While age-based restrictions may help reduce some risks, they cannot address every challenge associated with social media. Lasting improvements depend on safer platform design, stronger accountability of technology companies, digital literacy, parental support, and regulations that protect both children's well-being and their rights in the digital environment.

Question for practice:

Evaluate the effectiveness of age-based restrictions on children's social media access in ensuring online safety, and suggest a balanced regulatory approach.

Source: [The Hindu](#)

Integrating AI with Digital Public Infrastructure for Enhanced Governance

UPSC Syllabus: Gs Paper 2- e-Governance

Introduction

Artificial Intelligence (AI) and **Digital Public Infrastructure (DPI)** together are creating new opportunities for governance and development in India. Platforms such as **Aadhaar, UPI, DigiLocker, GST, and FASTag** have already transformed public service delivery through population-scale digital systems. Integrating AI with this strong digital foundation can improve state capacity, citizen services, and economic productivity. Responsible governance, trusted institutions, and effective safeguards will be essential to ensure inclusive, secure, and sustainable AI-led growth.

India's Strong Digital Public Infrastructure

1. **Transformation from Data-Poor to Data-Rich Economy:** India has rapidly become a data-rich economy through Jio, UPI, and GST. Population-scale digital data now supports financial inclusion, welfare delivery, enterprise formalisation, and digital governance.
2. **Aadhaar Strengthening Welfare Delivery:** More than 27 billion Aadhaar authentications annually have enabled a 16-fold increase in Direct Benefit Transfer (DBT) beneficiaries. Aadhaar has reduced fraud, improved targeting, and increased government spending efficiency by 117 times since 1991.
3. **UPI Creating Large Behavioural Datasets:** UPI processes around 23 billion monthly transactions, making India a global leader in digital payments with 42% of the world's digital transactions. This provides valuable behavioural data for better public policy and financial services.

4. **GST and FASTag Improving Economic Visibility:** GST's nearly 20 crore payments provide real-time information on production, invoicing, supply chains, and consumption. FASTag's 4.5 billion payment transactions generate large mobility and logistics datasets.
5. **Foundation for Population-Scale Governance:** India has become the first developing country to use digital public infrastructure at population scale for development instead of depending only on delayed surveys and traditional statistical systems.
6. **Need for Better Data Ecosystem:** The digital foundation is strong, but **academic research, open public data commons, and stronger think tanks** are still developing and require further expansion.

Need for Integrating AI with DPI

1. **Improving State Capacity:** AI can help governments allocate resources better, improve service delivery, detect fraud earlier, and respond more quickly to public needs.
2. **Breaking Digital Silos:** Many government systems still work separately with limited interoperability. AI can integrate structured and unstructured data and improve coordination across departments.
3. **Moving from PDFs to APIs:** Government technology systems need to shift from document-based processes towards API (Application Programming Interface)-driven digital services, enabling faster, seamless, and interoperable public service delivery.
4. **Supporting Jan Vishwas through Better Governance:** AI can strengthen governance while respecting India's consent architecture and the principles of Jan Vishwas, making government services more accessible and citizen-friendly.
5. **Expanding Multilingual Public Services:** AI-powered multilingual interfaces can improve access to education, labour markets, and government services for people speaking different Indian languages.
6. **Supporting Viksit Bharat 2047:** Integrating AI with DPI supports the vision of Viksit Bharat 2047 by improving productivity, strengthening public services, promoting inclusion, and building strategic technological capability.
7. **Global Leadership Opportunity:** Unlike the US model based on private-sector data or the China model based on platform ecosystems, India can combine AI with DPI to create a unique model of enhanced state capacity.

Potential Benefits of AI-Enabled DPI

1. **Better Governance and Citizen Services:** AI can improve welfare targeting, reduce fraud, strengthen public health spending, and provide faster government services through intelligent decision-making.
2. **Employment Through AI Deployment:** Deploying AI across government, businesses, and public services may create more employment opportunities than developing frontier AI models alone.

3. **Boosting Enterprise Formalisation:** India's **Enterprise DPI**, including **Universal Enterprise Number, Entity DigiLocker, API Setu, and Single Source of Truth for Regulation**, can simplify business operations and formalisation.
4. **Universal Lifetime Social Security Account:** A proposed Universal Lifetime Social Security Account (Aadhaar Punji) can improve formalisation and provide long-term social security for every citizen.
5. **Improving Economic Efficiency:** AI-enabled DPI can reduce information asymmetry, lower transaction costs, improve credit allocation, strengthen worker-job matching, and enhance supply chain efficiency.
6. **Supporting Innovation and Inclusive Growth:** India's deployment-first approach encourages AI for All, ensuring AI benefits agriculture, healthcare, education, manufacturing, governance, climate action, and other sectors.
7. **Strengthening AI Infrastructure:** Under the IndiaAI Mission, over 38,000 GPUs, 9,500+ datasets, 273 sectoral AI models, and 40+ petaflop supercomputing systems have strengthened India's AI ecosystem.
8. **Building Skilled Human Resources:** IndiaAI and FutureSkills initiatives support **500 PhDs, 5,000 postgraduates, 8,000 undergraduates, 570 AI Data Labs, 27 IndiaAI Labs**, while nearly **90% of startups** are adopting AI.

Challenges

1. **Weak Government Technology Capacity:** Government departments still face limitations in technical capability, making AI adoption and digital integration more difficult.
2. **Limited Interoperability Across Systems:** Digital silos reduce coordination between government departments and prevent seamless service delivery.
3. **Evolving AI Governance Framework:** Existing laws address many AI-related issues, but rapidly evolving AI requires stronger governance, updated regulations, and clearer legal responsibilities.
4. **Managing AI Risks:** AI systems can create misinformation, cyberattacks, bias, discrimination, transparency failures, national security risks, and threats to critical infrastructure.
5. **Protecting Vulnerable Groups:** Children face risks from harmful recommendation systems, while women are increasingly targeted through AI-generated deepfakes.
6. **Ensuring Accountability:** Clear responsibility is required across AI developers, deployers, and users. Better transparency, grievance redressal, and predictable enforcement remain necessary.
7. **Fragmented Institutional Framework:** AI governance responsibilities are distributed across multiple agencies, making coordination and consistent implementation more difficult.

Way Forward

1. **Expand AI Infrastructure:** Continue investments in compute capacity, datasets, foundational models, Digital Public Infrastructure, data sharing, and institutional capabilities under the IndiaAI Mission.
2. **Build AI Capacity Across Society:** Expand AI education, strengthen public sector technical skills, and increase AI awareness among citizens and small businesses.
3. **Adopt Balanced AI Regulation:** Review existing laws, address regulatory gaps, and create future-ready legal frameworks without slowing innovation.
4. **Strengthen Risk Assessment Systems:** Develop India-specific AI risk assessment frameworks, incident reporting systems, and evidence-based safeguards for responsible AI deployment.
5. **Create Strong Governance Institutions:** Operationalise institutions such as the AI Governance Group, Technology & Policy Expert Committee, and AI Safety Institute to ensure coordinated implementation.
6. **Adopt a Whole-of-Government Approach:** Strengthen coordination among ministries, sectoral regulators, standards bodies, and public institutions to ensure consistent AI governance and effective implementation across sectors.
7. **Implement the Action Plan in Phases:** Focus on institutional strengthening, common standards, regulatory sandboxes, DPI integration, updated laws, and long-term accountability to build a trusted AI ecosystem.

Conclusion

India's strong Digital Public Infrastructure provides a strong foundation for integrating Artificial Intelligence into governance. AI can improve public services, strengthen state capacity, support innovation, create quality jobs, and promote inclusive economic growth. These benefits require trusted institutions, balanced regulation, responsible AI deployment, effective coordination, and continuous capacity building. Together, they can help realise the vision of AI for All and Viksit Bharat 2047.

Question for practice:

Examine the need for integrating Artificial Intelligence (AI) with Digital Public Infrastructure (DPI) to enhance governance in India. Discuss its potential benefits, key challenges, and the way forward.

Source: [Indian Express](#)

Insular incentive: On ethanol-blended fuel and the Indian consumer

Source: The post “Insular incentive: On ethanol-blended fuel and the Indian consumer” has been created based on “Insular incentive: On ethanol-blended fuel and the Indian consumer” published in “The Hindu” on 13th July 2026.

UPSC Syllabus: GS 3- Economy

Context: India's ethanol blending policy aims to reduce crude oil imports, improve environmental sustainability, and enhance farmers' incomes. However, the policy must ensure that these benefits outweigh the economic costs imposed on consumers and the inefficient use of natural resources.

Benefits of the Ethanol Blending Policy

1. The ethanol blending programme helps reduce India's dependence on imported crude oil.
2. The policy contributes to environmental improvement by promoting cleaner fuel.
3. The programme provides an additional source of income for farmers by creating demand for ethanol feedstocks.
4. The policy strengthens India's energy security by diversifying fuel sources.

Concerns with the Present Policy

1. The government continues to procure E20 ethanol at a higher cost even when crude oil prices remain below \$70 per barrel.
2. Consumers are forced to pay more for E20 fuel despite its lower mileage compared to pure petrol.
3. Oil marketing companies procure ethanol at administered prices, while distilleries purchase feedstock at market prices, exposing them to higher financial risks.
4. Higher feedstock prices do not necessarily benefit farmers because intermediaries capture a large share of the gains.
5. The policy rewards every litre of ethanol irrespective of the feedstock used, thereby favouring sugarcane because it has the largest installed production base.
6. Sugarcane is one of the most water-intensive and fertilizer-intensive crops and is mainly cultivated in water-stressed states such as Maharashtra and Karnataka.
7. The present policy does not adequately promote resource efficiency or protect food security.

Alternative Feedstocks for Ethanol Production

1. The government has encouraged ethanol production from maize and other grains by expanding distillation capacity.
2. The government has also permitted ethanol production from surplus or damaged rice procured by the Food Corporation of India.
3. Maize and millets require less water than sugarcane, although maize still requires significant fertilizer inputs.
4. Sweet sorghum is less water-intensive and has a shorter growing season than sugarcane.
5. Lignocellulosic biomass such as rice straw, wheat straw, maize stover, and groundnut shells can be used to produce second-generation (2G) ethanol.
6. Second-generation ethanol reduces competition with food crops and also helps address the problem of stubble burning.

Way Forward

1. The government should incentivize ethanol production from feedstocks that are more resource-efficient.
2. The government should improve irrigation facilities and strengthen logistics infrastructure for ethanol production.

3. The government should establish revenue-sharing arrangements between ethanol producers and cooperatives.
4. The government should provide premium prices for ethanol produced from agricultural residues.
5. The government should subsidize equipment and infrastructure for collecting and storing crop residues.
6. The government should facilitate long-term contracts and assured offtake agreements between aggregators and distilleries.
7. The ethanol blending policy should remain aligned with agricultural policy and should not function independently.
8. The government should avoid forcing consumers to purchase costlier fuel with lower mileage.

Conclusion: India's ethanol blending policy should balance energy security, environmental sustainability, farmer welfare, and consumer interests. A resource-efficient and economically viable ethanol policy will ensure long-term benefits without imposing unnecessary costs on consumers or compromising food and water security.

Question: India's ethanol blending policy should promote resource efficiency rather than irrationally forcing consumers to bear higher costs. Discuss.

Source: [The Hindu](#)

Demographic Shifts and Governance Challenges

Source: The post “**Demographic Shifts and Governance Challenges**” has been created based on “**Demographic Shifts and Governance Challenges**” published in “Indian Express” on 13th July 2026.

UPSC Syllabus: GS 1 – Social Issues

Context: Population debates have shifted from concerns of **population explosion** to fears of **population decline**. However, evidence suggests that exaggerated demographic fears often distort policymaking, create social divisions, and disproportionately affect women. The real challenge is to manage demographic transition through balanced and evidence-based policies.

Population-related fears and their social consequences

1. Discussions on population often shift from demographic concerns to **controlling women's reproductive choices**.
2. Fear-based narratives encourage calls for a return to traditional family norms, restrictions on contraception, and opposition to abortion.
3. Such rhetoric can weaken social cohesion and distract attention from structural demographic challenges.

Why fears of population decline are overstated

1. India is not facing immediate depopulation

- a. According to **UN medium projections**, India's population is expected to peak at about **1.7 billion** before gradually declining to around the current level by the end of the century.

- b. Lower projections by the **Institute for Health Metrics and Evaluation (IHME)** may overestimate fertility decline by assuming that increasing education will continue to reduce fertility.
- c. Recent evidence shows that fertility among highly educated women has stabilised, while fertility has mainly declined among less-educated women.

2. Ageing will not necessarily create a labour shortage

- a. The proportion of people aged **60 years and above** will increase significantly. However, the **working-age population** will decline only marginally.
- b. Rising productivity through **Artificial Intelligence (AI)** and greater participation of women in the formal workforce can compensate for labour shortages.

3. Regional demographic imbalance requires institutional solutions

- a. Southern states experienced fertility decline earlier than northern states.
- b. Population-based delimitation could reduce the political representation of southern states.
- c. At the same time, lower fertility has contributed to greater investment in human capital and higher economic productivity in states such as Tamil Nadu.
- d. Therefore, future policymaking must balance **demographic representation** with **economic contribution**.

4. Religious demographic fears lack empirical support

- a. Although Muslim fertility remains marginally higher than Hindu fertility, both communities have experienced similar declines in fertility.
- b. Even if the current fertility gap remains unchanged, projections indicate only a modest increase in the Muslim population share over several decades.
- c. Hence, fears of dramatic demographic shifts are not supported by available evidence.

Way Forward

1. Adopt **evidence-based population policies** instead of fear-driven narratives.
2. Protect **women's reproductive autonomy** and ensure continued access to contraception and reproductive healthcare.
3. Increase **female labour force participation** to address future workforce requirements.
4. Reduce the financial burden of raising children by improving the quality and affordability of education.
5. Design institutional mechanisms that balance **demographic realities, economic performance, and federal representation**.

Conclusion: Population change is a natural part of demographic transition. Rather than responding through alarmist narratives, India should focus on managing ageing, enhancing productivity, empowering women, and investing in human capital. A balanced, evidence-based approach will strengthen both social cohesion and long-term economic development.

Question: Population change presents both opportunities and challenges. Discuss why demographic change should be managed through evidence-based policies rather than population-related fears.

Source: [Indian Express](#)

Five Crore Indians Wait When the Courts Take a Break

UPSC Syllabus: Gs Paper 2- Judiciary

Introduction

India's justice system is under growing pressure due to **rising judicial pendency, shortage of judges, and delays in dispute resolution**. The debate over court vacations has renewed concerns about timely justice, but it also raises a larger question of whether judicial vacations or deeper structural weaknesses are responsible for the backlog. The real challenge is to ensure continuous court functioning while protecting judges' well-being and improving the overall efficiency of the justice delivery system.

Scale and Impact of Judicial Pendency

1. **Growing case backlog:** As of **December 31, 2025**, more than **5.39 crore cases** were pending in Indian courts. This included **over 4.76 crore cases** in district courts, **63.6 lakh** in High Courts, and **more than 92,000** in the Supreme Court.
2. **Long wait for justice:** A government study estimated that, at the present rate of disposal, clearing the pending cases could take **around three centuries**. This shows the urgent need for faster case disposal.
3. **Undertrial prisoners suffer the most:** Around **three-fourths of India's prison population** consists of undertrials. Many remain in jail for years despite not being convicted and sometimes spend longer in prison than the punishment they may finally receive.
4. **Burden on ordinary litigants:** Delayed hearings increase legal costs, uncertainty, and hardship for citizens. Poor and vulnerable people are affected the most because justice remains inaccessible for long periods.
5. **Public confidence is affected:** When disputes remain unresolved for years, faith in the justice delivery system weakens and the purpose of timely justice is undermined.

Debate over Judicial Vacations

1. **Limited functioning during vacations:** During the Supreme Court's **summer break from June 1 to July 12**, only a few vacation Benches hear urgent matters. Regular hearings reduce during this period.
2. **Purpose of judicial vacations:** Vacations allow judges to write reserved judgments, study case records, conduct legal research, and complete administrative work that cannot be finished during regular sittings.
3. **Need for institutional continuity:** The concern is not that judges receive leave, but that most judges take leave together. A better roster can allow judges to rest while courts continue functioning at full strength.
4. **Continuous public service:** Like hospitals and other essential public institutions, courts should continue functioning throughout the year through proper rotation of judicial leave.

5. **Colonial legacy of court vacations:** The present vacation calendar originated during the British period when English judges left India during the summer. The system has largely continued even though circumstances have changed.
6. **Renaming without operational change:** In 2024, the Supreme Court renamed summer vacations as "partial court working days." However, the number of actual sitting days remained almost the same.

Structural Challenges in the Justice Delivery System

1. **Low judge-to-population ratio:** India has around 20 judges per million people, while the Law Commission recommended 50 judges per million in 1987. This leaves every judge responsible for a very large number of cases.
2. **Judicial vacancies reduce court capacity:** Nearly one-third of High Court posts remain vacant because appointments are delayed. This further increases pendency.
3. **High litigation load despite efficient disposal:** According to the National Judicial Data Grid (NJDG), judges in India dispose of around 2,600 cases annually, compared to about 81 cases in the United States. This shows that the problem is the volume of cases rather than lack of judicial effort.
4. **Institutional delays in appointments:** Filling judicial vacancies depends on coordination between the judiciary and the government. Slow appointments weaken the justice delivery system.
5. **Growing disputes with limited judicial capacity:** The number of new cases continues to rise faster than the system's capacity to dispose of them. This widens the backlog every year.
6. **Need to address structural weaknesses:** The debate should move beyond blaming judges or focusing only on vacations. Strengthening judicial capacity is essential for timely justice.

Judicial Reforms for Speedy and Accessible Justice

1. **Stagger judicial vacations:** Judges should continue to receive leave, but vacations can be taken in phases instead of all at once. This will allow courts to function with adequate Benches throughout the year.
2. **Implement committee recommendations:** The Parliamentary Standing Committee (2023), Law Commission, and Justice Malimath Committee recommended staggered vacations so that courts remain functional while judges receive adequate rest.
3. **Review judicial strength norms:** India has around 20 judges per million people, while the Law Commission recommended 50 judges per million in 1987. As litigation and population have grown significantly since then, judicial strength should be reassessed and expanded to meet current requirements.
4. **Promote Alternative Dispute Resolution (ADR):** Mediation, arbitration, and conciliation should become the preferred method for resolving suitable disputes before they reach the courts.
5. **Strengthen Lok Adalats:** Lok Adalats have already settled over 2.59 crore cases in a single national sitting and 23.5 crore cases in three years. Their wider use can reduce the burden on regular courts.

6. **Implement the Mediation Act effectively:** The **Mediation Act, 2023** should be implemented properly so that more disputes are settled before litigation begins.
7. **Expand Online Dispute Resolution (ODR):** Technology-enabled dispute resolution can improve accessibility, reduce costs, and provide faster justice, especially for smaller disputes.
8. **Use the expertise of retired judges:** Retired judges can monitor high-pendency areas, guide institutional reforms, and help improve case management without handling regular court work.
9. **Encourage early settlement:** Lawyers, litigants, and public institutions should promote negotiated settlements wherever possible. Courts should remain the last option for dispute resolution.
10. **Promote coordinated institutional reforms:** The judiciary, government, legal profession, and ADR institutions should work together to improve the justice delivery system.

Conclusion

India's judicial backlog reflects deeper structural weaknesses rather than the vacation calendar alone. **Judicial continuity, adequate judicial strength, timely appointments, wider use of ADR and ODR, and better institutional coordination** are essential for faster justice. The focus should be on creating a system where judges receive adequate rest while citizens receive **timely, accessible, and effective justice**.

Question for practice:

Examine the debate over judicial vacations in India. Are court vacations the primary reason for judicial pendency, or do deeper structural challenges require greater attention?

Source: [The Hindu](#)

Why has China banned helium exports?

UPSC Syllabus: Gs Paper 2- International Relation

Introduction

China has **temporarily banned helium exports with immediate effect**, although it has not clarified the reason, duration, or scope of the restriction. The decision comes when the global helium market is already under pressure from **Russia's export restrictions, geopolitical tensions in West Asia, and changes in the U.S. helium reserve system**. Since helium is essential for several high-technology industries, the move has raised concerns about global supply, prices, and industrial production.

Global Helium Market: Production and Supply Chain

1. **China's limited production and import dependence:** China produces only **around 1.6% of global helium** but imports **more than 80%** of its domestic requirement. This makes the country highly dependent on overseas suppliers despite being an exporter of helium.

2. **Major global producers:** The **United States** supplies about **43%** of global helium production, making it the largest producer. It is followed by **Qatar, Russia, Canada, and Algeria**, showing that production is concentrated in only a few countries.
3. **Changes in the U.S. helium system:** In **2024**, the United States privatized its **Federal Helium Reserve** by selling its assets to the **Messer Group**. This reduced the reserve's ability to absorb supply shocks during international crises.
4. **Russia's export restrictions:** Russia has tightened helium exports by requiring the **Prime Minister's approval for shipments until 2027**. These restrictions have added pressure to an already tight global supply.
5. **West Asia supply risks:** The conflict involving **Iran** has created uncertainty over helium supplies from **Qatar**, which meets **about 33% of global demand**, especially in Asia. A large share of global helium production now depends on shipments passing through the **Strait of Hormuz**.
6. **Growing pressure on Asian demand:** Demand for helium remains strong in Asian economies because of expanding **semiconductor, electronics, and fibre-optic industries**. Any disruption in supply directly affects manufacturing and technology sectors.
7. **China's role in global trade:** China imports large quantities of helium for domestic use but also re-exports part of its supplies to markets such as **South Korea, Taiwan, Germany, the United States, Japan, and parts of Europe**. This gives China an important position in the global helium supply chain.

Why Has China Imposed the Export Ban?

1. **No official explanation:** China announced the export ban through the **Ministry of Commerce** and the **General Administration of Customs** but did not specify the reason, duration, destination-wise exemptions, or overall scope of the restriction.
2. **Protecting domestic supply:** The restriction is widely seen as an effort to preserve helium for **China's semiconductor industry and medical sector**. These sectors depend on a steady supply of helium for uninterrupted operations.
3. **Supporting the chip industry:** China is rapidly expanding domestic chip manufacturing to meet growing **artificial intelligence (AI)** demand. Helium is essential for semiconductor production, making uninterrupted supply important for this industrial strategy.
4. **Response to supply shortages:** The export ban came when helium supplies had already tightened because of Russia's export restrictions and disruptions linked to West Asia. Conserving domestic supplies reduces the risk of shortages within China.
5. **Managing falling imports:** China's helium imports declined by **more than 10% year-on-year during the first five months of 2026** because of disruptions linked to the Iran conflict. Lower imports increased the need to conserve available supplies.
6. **Rising exports despite shortages:** Even as imports declined, China's helium exports **rose by 32% year-on-year to 409 tonnes**, supported by rising global prices and increased shipments to **South Korea and Taiwan**. The ban stops further outflow during a period of tight supply.

7. **Part of a wider resource security approach:** China has previously restricted exports of products such as **fuel, fertilisers, and sulphuric acid** to avoid domestic shortages. The helium restriction follows a similar approach of securing critical industrial resources.
8. **Possible geopolitical factor:** The export ban follows a **U.S. congressional investigation into Messer Group's Chinese interests**, creating the possibility of reciprocal trade measures. Although no official link has been confirmed, the timing has raised such concerns.

Helium: Origin and Production Process

1. **A naturally occurring resource:** Helium is the **second-lightest element after hydrogen** and cannot be manufactured. It is a **non-renewable resource** that forms naturally deep inside the Earth over millions of years.
2. **Formation inside the Earth:** Helium is produced when **uranium and thorium** undergo radioactive decay. The emitted **alpha particles** capture electrons and become helium atoms.
3. **Presence with natural gas:** Over long periods, helium moves into underground **natural gas reservoirs**. It is extracted along with natural gas because both remain trapped in the same geological formations.
4. **Commercial extraction process:** Natural gas is processed to recover helium only when helium makes up at least **0.3% of the gas by volume**. The helium is then separated because it has a **different boiling point** from other gases.
5. **Alternative sources are limited:** Some helium is recovered from **LNG plants** and from the **air**, but these sources produce very small quantities. They do not contribute significantly to global helium demand.
6. **High purity requirement:** Helium supplied for commercial use is usually **at least 99.997% pure**. Such high purity is necessary for industries that require stable and contamination-free conditions.

Strategic Importance and Applications of Helium

1. **Unique physical properties:** Helium has an **extremely low boiling point of -269°C** and is chemically inert. These properties make it an ideal coolant for advanced industrial and scientific applications.
2. **Healthcare and medical equipment:** Helium cools the powerful magnets used in **MRI machines**. A stable helium supply is therefore essential for the functioning of modern healthcare systems.
3. **Semiconductor and quantum technologies:** Helium is used to cool **silicon wafers** during semiconductor manufacturing. It is also increasingly required in devices used for **quantum computing**.
4. **Leak detection in industries:** Helium atoms are very small and can pass through tiny gaps that other gases cannot. Engineers use this property to detect leaks in highly sensitive industrial systems.

5. **Optical fibre manufacturing:** Helium rapidly and evenly cools **molten glass** while optical fibres are being drawn. It also prevents oxygen and nitrogen from forming bubbles inside the material.
6. **Space and scientific research:** Space agencies such as **ISRO, NASA, and SpaceX** use helium to pressurise rocket fuel tanks. Research laboratories also depend on helium for many scientific applications.
7. **Balloons and airships:** Helium is widely used as a lifting gas for **balloons and airships**, including those used in tourism and research. Its non-flammable nature makes it safer than hydrogen.
8. **Major demand sectors:** According to the **U.S. Geological Survey**, laboratories account for **22%** of helium demand. They are followed by **controlled atmospheres and semiconductors (17%)**, **lifting gas (17%)**, **MRI scanners (15%)**, **aerospace (9%)**, and **leak detection (5%)**.

Economic Challenges in the Helium Supply Chain

1. **Sharp rise in prices:** In **June 2026**, the spot price of highly pure helium in **Northeast Asia** increased to **\$150–205 per thousand cubic feet**, almost **double** its level in late **2025**. Tight global supplies have pushed prices upward.
2. **Higher costs for buyers:** The U.S.-based industrial gas supplier **Airgas** declared **force majeure** and imposed an additional charge of **\$13.50 per hundred cubic feet** on existing contracts. This increased the cost for industries that depend on helium.
3. **Expensive purification and liquefaction:** Helium processing requires advanced technology and specialised equipment. A **mid- to large-scale purification and liquefaction plant** costs **more than \$100 million**, while a smaller facility can cost around **\$10 million**.
4. **Costly storage infrastructure:** Underground **salt caverns** provide the best storage because they reduce gas leakage, but they are rare and developing one can cost **more than \$200 million**. Helium can also be stored as compressed gas or cryogenic liquid, both of which require costly infrastructure.
5. **Difficult transportation:** Liquid helium must be transported in **vacuum-jacketed stainless steel containers** that can maintain **–269°C**. Only a limited number of companies manufacture these specialised vessels, including several Chinese firms.
6. **Operational challenges:** Helium containers have a limited holding time. If delivery is delayed, the liquid helium starts **boiling off into the atmosphere**, increasing losses and transportation costs.

Global Implications of China's Export Ban

1. **Global supply and industrial impact:** China's export restriction could further tighten the already strained helium market. Countries that depend on Chinese supplies, especially in Asia, may face shortages and higher costs, affecting **semiconductor, healthcare, aerospace, electronics, fibre-optic, and scientific research** industries.
2. **Reduced role of China as a re-exporter:** China has been importing helium and re-exporting part of it to countries such as **South Korea, Taiwan, Germany, the United States, Japan, and Europe**. The export ban interrupts this supply channel.

3. **Growing importance of supply security:** The decision shows that countries are giving greater priority to securing essential industrial resources during periods of global uncertainty. Helium has become an important strategic resource because of its role in advanced technologies.
4. **Uncertain global market:** The combination of export controls, regional conflicts, and concentrated production has made the global helium market more uncertain. Countries may increasingly treat helium as a strategic resource rather than a normal industrial commodity.

Conclusion

China's export restriction shows that **helium has become a strategic industrial resource rather than just an industrial gas**. Its limited global production, concentrated supply chain, and growing use in advanced technologies have increased its geopolitical importance. As global demand continues to rise, stable supply chains, diversified sources, and efficient management of helium resources will become increasingly important for industrial and technological security.

Question for practice:

Examine the reasons behind China's ban on helium exports and discuss its implications for the global helium supply chain and strategic industries.

Source: [The Hindu](#)

Parliament, not fate, must shape road safety

Source: The post "Parliament, not fate, must shape road safety" has been created based on "Parliament, not fate, must shape road safety" published in "Indian Express" on 13th July 2026.

UPSC Syllabus: GS 2 - Polity & Governance

Context: Road accidents in India are largely preventable and therefore represent a failure of governance rather than fate. The Supreme Court in **S. Rajasekaran v. Union of India (2014)** held that preventable road accident deaths are linked to **Article 21**, making road safety a constitutional responsibility.

Constitutional and Institutional Challenges

1. Inconsistent road accident data

- a. **Different government agencies** report different figures for road accident deaths, creating uncertainty in policymaking.
- b. The Ministry of Road Transport and Highways reported **1.77 lakh** road accident deaths in 2024.
- c. The National Crime Records Bureau's **Accidental Deaths and Suicides Report** recorded **1.75 lakh** deaths.
- d. The **Crime in India Report** of the National Crime Records Bureau recorded **1.81 lakh** deaths.
- e. These differences arise because each agency follows a separate reporting methodology.

2. Weak implementation of road safety measures

- a. The Supreme Court found serious deficiencies in all the **Four Es of Road Safety**.

- b. Highway maintenance receives only **35–40%** of the estimated funding, resulting in poor road infrastructure.
- c. Traffic laws exist but are not enforced consistently across the country.
- d. Public awareness regarding road safety remains inadequate.
- e. Many accident victims die because ambulances are insufficient, trauma centres are lacking, and police stations often delay action due to jurisdictional disputes.

3. Road safety is a constitutional issue

- a. The Supreme Court held that road accidents are preventable because they result from human failures.
- b. Preventable road accident deaths amount to a failure to protect the **Right to Life under Article 21**.
- c. Accepting road accident deaths as inevitable reflects a failure of constitutional governance.

4. Fragmentation of constitutional responsibilities: The Constitution distributes road safety responsibilities across different levels of government. National highways fall under the **Union List**. Roads, police and public health fall under the **State List** and Motor vehicles fall under the **Concurrent List**. This fragmented distribution prevents any single authority from taking complete responsibility for preventing road accidents.

5. Weak institutional accountability: Governments have mainly relied on committees, advisories and proposed boards to improve road safety. These institutions lack sufficient authority to ensure effective coordination and accountability among different agencies.

Reforms Required

1. Establish a Road Safety Coordination Council: Parliament should establish a **Road Safety Coordination Council** on the model of the **GST Council**. The Council should enable the Centre and States to jointly frame standards for road design, vehicle fitness, emergency medical care and road accident reporting.

2. Amend the Seventh Schedule: Parliament should amend the **Seventh Schedule** to provide greater legislative authority over roads and traffic. Such an amendment would reduce constitutional fragmentation and strengthen accountability.

3. Create statutory District Road Safety Committees: Parliament should make **District Road Safety Committees** mandatory through legislation. These committees should be given clearly defined powers to monitor road safety measures. States that fail to implement road safety measures should face statutory consequences.

Conclusion: Road accident deaths should not be viewed as unavoidable tragedies because they are largely preventable. Strengthening constitutional coordination, institutional accountability and cooperative federalism is essential to protect the **Right to Life under Article 21** and significantly improve road safety in India.

Question: Road accident deaths are a constitutional governance failure rather than an unavoidable tragedy. Discuss the constitutional and institutional challenges in ensuring road safety in India. Suggest suitable reforms.

Source: [Indian Express](#)

With uncertainty looming, challenges and opportunities for India's Act East policy

Source: The post “With uncertainty looming, challenges and opportunities for India's Act East policy” has been created based on “With uncertainty looming, challenges and opportunities for India's Act East policy” published in “Indian Express” on 13th July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: India's **Act East Policy**, launched in **2014**, marked a strategic shift from the earlier **Look East Policy (1991)**. The policy aims to promote **economic cooperation, strengthen cultural ties, and develop strategic partnerships** with countries in the **Indo-Pacific** through both bilateral and multilateral engagement.

Significance of the Act East Policy

1. Shift from Look East to Act East

- a. The Act East Policy transformed India's engagement with East Asia from a primarily economic approach to a comprehensive strategic partnership.
- b. The policy expanded cooperation to include **security, connectivity, culture, and maritime affairs**.

2. Strengthening India's Indo-Pacific role

- a. The policy has enhanced India's engagement with countries across the Indo-Pacific region.
- b. It has positioned India as a **responsible maritime power** committed to a free, **open, and inclusive Indo-Pacific**.

3. Deepening strategic partnerships

- a. The policy has strengthened India's partnerships with ASEAN and other like-minded democracies.
- b. It has contributed to greater cooperation through bilateral and multilateral platforms.

4. Enhancing maritime security

- a. The policy addresses common maritime challenges such as **Illegal, Unreported and Unregulated (IUU) fishing, piracy, trafficking in drugs, humans and arms, illegal migration, and natural disasters**.
- b. India's initiatives such as **SAGAR, IPOI, and MAHASAGAR** support regional cooperation in maritime security.

5. Correcting historical neglect

- a. The policy reflects India's intention to overcome its historical neglect of the Asia-Pacific region.
- b. It demonstrates India's willingness to shoulder greater regional and global responsibilities.

Challenges to the Act East Policy

1. Political instability in the neighbourhood: Political instability in **Pakistan, Myanmar, Bangladesh, Nepal, and Sri Lanka** affects India's regional engagement and connectivity initiatives.

2. Policy inconsistencies of extra-regional powers: Inconsistencies in the policies of countries such as the **United States** create strategic uncertainty in the Indo-Pacific.

3. China's increasing assertiveness: China's growing strategic and maritime assertiveness continues to challenge regional stability. Despite changes in the US approach towards the **Indo-Pacific**, the strategic linkage between the Indian and Pacific Oceans remains important.

4. Infrastructure gaps in Northeast India: Inadequate infrastructure in Northeast India limits its potential to serve as India's gateway to East Asia. Weak connectivity affects trade and regional integration.

5. Balancing strategic objectives: India must ensure that the Act East Policy does not appear excessively security-oriented. Maintaining regional stability requires balancing strategic interests with economic and developmental cooperation.

Way Forward

1. Strengthen connectivity: India should improve physical and economic connectivity through better infrastructure in Northeast India.

2. Deepen ASEAN engagement: India should further strengthen its economic, cultural, and strategic partnership with ASEAN through sustained dialogue and cooperation.

3. Promote maritime cooperation: India should expand initiatives such as **SAGAR, IPOI, and MAHASAGAR** to address both traditional and non-traditional maritime security challenges.

4. Strengthen multilateral cooperation: India should continue working with like-minded countries while promoting an inclusive and rules-based Indo-Pacific.

5. Balance security and development: India should pursue strategic partnerships without undermining regional stability and should continue giving voice to the concerns of **small island nations**.

Conclusion: The **Act East Policy** has emerged as a key pillar of India's foreign policy by combining economic engagement, strategic partnerships, maritime security, and cultural diplomacy. Addressing regional instability, infrastructure deficits, and geopolitical uncertainties while strengthening cooperation with ASEAN and the wider Indo-Pacific will be crucial for its long-term success.

Question: The Act East Policy has evolved from an economic engagement strategy into a comprehensive strategic framework for the Indo-Pacific. Discuss its significance, challenges, and the way forward.

Source: [Indian Express](#)

Can Biogas Aid India's Energy Security?

UPSC Syllabus: Gs Paper 2- Infrastructure (energy)

Introduction:

India imports nearly 85% of its crude oil and a large share of its LPG, making its energy security vulnerable to

geopolitical tensions, especially in West Asia. The recent LPG supply disruptions have renewed interest in biogas and Compressed Biogas (CBG) as clean, indigenous and renewable fuels. While India has launched several initiatives to promote biogas, achieving large-scale adoption requires stronger implementation, better infrastructure and sustainable feedstock management.

Significance of Biogas for India's Energy Security

1. **Reducing Import Dependence:** Biogas can reduce India's reliance on imported crude oil, LPG and natural gas by producing energy from locally available organic waste. This strengthens energy security during global supply disruptions.
2. **Renewable and Versatile Fuel:** Biogas is produced through anaerobic digestion of organic matter and mainly contains methane and carbon dioxide. After purification, it becomes **Compressed Biogas (CBG)**, which is chemically identical to CNG and can be used for cooking, transport, electricity generation and heating.
3. **Waste-to-Wealth Approach:** Biogas converts agricultural residues, animal waste and other organic waste into useful energy. This helps manage waste while creating value from resources that are otherwise discarded.
4. **Environmental Benefits:** Biogas is a **renewable and carbon-neutral** fuel. It reduces methane emissions from waste, lowers dependence on fossil fuels and supports India's climate goals.
5. **Economic and Rural Benefits:** Biogas can reduce household fuel costs, generate rural employment and improve sanitation. It also supports farmers by creating new income opportunities from agricultural waste.
6. **Climate Finance Potential:** Biogas projects can earn revenue from both gas sales and **carbon credits**. Each tonne of feedstock can reduce nearly **2.83 tonnes of CO₂**, making projects more attractive for investors.

India's Biogas Journey and Government Initiatives

1. **Early Development:** India's biogas programme began in the late **1950s** through the work of **Dr. Ram Bux Singh**, who established the country's first Gobar Gas plant. This created the foundation for future development.
2. **Expansion in Rural Areas:** The **National Project on Biogas Development (NPBD)** in the 1980s promoted household biogas plants through subsidies. The **Deenbandhu fixed-dome model** introduced in **1984** made plants more affordable by using local materials.
3. **SATAT Initiative:** The **Sustainable Alternative Towards Affordable Transportation (SATAT)** scheme was launched in **2018** with a target of establishing **5,000 CBG plants by 2023**. However, only **132 plants** had been completed by **3 June 2026**, showing slow progress.
4. **GOBARDhan Scheme:** The **GOBARDhan** programme promotes a waste-to-wealth approach by supporting community biogas plants. It provides grants of up to **₹150 lakh per district**, **₹564 crore** for biomass collection machinery and **₹994 crore** for pipeline connectivity.

5. **Mandatory CBG Blending:** In 2023, the government approved mandatory blending of CBG in city gas distribution networks. The blending target starts at **1% in FY26** and will gradually increase to **5% by FY29**.
6. **Learning from Ethanol Blending:** India increased ethanol blending in petrol from **1.5% in 2014** to **20% by December 2025**, five years ahead of the original target. A similar implementation approach is expected for CBG blending.

3. Challenges in Scaling Up Biogas

1. **Infrastructure Constraints:** Slow establishment of CBG plants, inadequate biomass collection systems and limited pipeline connectivity have delayed large-scale expansion.
2. **Financial Barriers:** High initial investment, expensive technology, poor private investment and limited access to formal credit have reduced project viability.
3. **Need for Better Policy Support:** Government financial assistance can improve project viability. Additional incentives such as **accelerated depreciation** and **tax holidays** can attract more private investment.
4. **Feedstock and Crop Diversion Risks:** Higher prices for maize-based ethanol have encouraged farmers to shift towards maize cultivation. This may reduce crop diversity and affect food security if food crops are increasingly used as energy feedstock.
5. **Impact on Agricultural Production:** The **Economic Survey 2026** noted that maize yield increased from **2.56 tonnes per hectare in FY16** to **3.78 tonnes per hectare in FY25**, while yields of soybeans, sunflower, rapeseed, peanuts and millets stagnated or declined. During **FY22–FY25**, maize-based ethanol prices increased at a **CAGR of 11.7%**, making maize more profitable.
6. **Food Security Concerns:** Rising maize cultivation has coincided with declining pulse production and only modest growth in oilseeds and other cereals. Since India already imports large quantities of pulses and edible oils, this trend may increase import dependence and expose domestic food prices to future supply shocks.

Lessons from International Experience

1. **Global Leadership in Biogas:** Europe, China and the United States account for nearly **90% of global biogas production**, showing that strong policy support can rapidly expand the sector.
2. **Germany's Policy Success:** Germany accelerated biogas production after introducing the **Renewable Energy Sources Act, 2000**. Guaranteed income, bonuses and support for small plants encouraged large-scale investment.
3. **Managing Crop Diversion:** Germany's rapid expansion led to excessive maize cultivation, replacing other food crops. The government later imposed limits on maize use in biogas plants to protect agricultural diversity.

4. **Denmark's Sustainable Model:** Denmark aims to use only **biomethane** in its gas system by **2030**. It discourages food crops as feedstock and mainly uses livestock manure and agricultural waste, offering a more sustainable approach.

Way Forward

1. **Strengthen Infrastructure:** Faster establishment of CBG plants, better biomass collection systems and stronger gas pipeline connectivity are essential for expanding production.
2. **Improve Financial Support:** Easier access to bank credit, government support and carbon market financing can make biogas projects commercially viable.
3. **Encourage Private Participation:** Stable policy support, tax incentives and long-term investment confidence can attract more private companies into the sector.
4. **Promote Decentralised Systems:** Expanding **small (1–25 m³/day)** and **medium (25–2500 m³/day)** biogas plants can support local energy production. A household can replace **1–2 LPG cylinders every month** using daily organic waste.
5. **Adopt Sustainable Feedstock:** Priority should be given to livestock manure, agricultural residues and organic waste instead of food crops. This can strengthen energy security without affecting food security.
6. **Integrate Existing Schemes:** Better coordination between SATAT, GOBARDhan, CBG blending targets and other programmes can accelerate implementation and improve outcomes.

Conclusion

Biogas can become an important pillar of India's energy security by reducing import dependence, promoting clean energy and supporting rural livelihoods. However, its success depends on faster implementation, stronger infrastructure, adequate finance and sustainable feedstock use. A balanced approach can help India expand renewable energy without compromising agricultural diversity or food security.

Question for practice:

Discuss the role of biogas in strengthening India's energy security and examine the challenges in scaling up its adoption.

Source: [The Hindu](#)

The Right Path for India's Nuclear Power Development

UPSC Syllabus: Gs Paper 3- Infrastructure

Introduction

India's nuclear power programme has evolved from overcoming international sanctions to building strong indigenous capabilities. The successful commissioning of the **500 MWe Prototype Fast Breeder Reactor (PFBR)** marks the beginning of the second stage of India's three-stage nuclear programme. As India targets

100 GW nuclear capacity by 2047, the focus is on expanding clean energy through **self-reliance, affordable technology, strong safety standards, and long-term energy security**.

Evolution of India's Nuclear Programme

1. **Impact of International Sanctions:** International sanctions after India's **1974 peaceful nuclear test** restricted imports of uranium and nuclear technology. These restrictions encouraged India to develop its own nuclear technologies and manufacturing capabilities.
2. **Role of the 2008 Civil Nuclear Deal:** The **India–United States Civil Nuclear Deal (2008)** ended restrictions on importing natural uranium and nuclear power plants, with some important exceptions. This improved uranium availability and supported the expansion of India's nuclear programme.
3. **Growth of Indigenous Reactor Capacity:** India steadily increased reactor capacity from **200 MW to 500 MW**, and later developed **700 MW reactors**. **Four 700 MW units are under construction, while another ten are being developed.**
4. **Foundation for Long-Term Self-Reliance:** Continuous investment in domestic research, engineering, and manufacturing created a strong nuclear ecosystem. This reduced dependence on foreign suppliers and strengthened India's technological base.

Indigenous Technological Leadership

1. **Complete Domestic Manufacturing:** Every major component used in India's nuclear power plants has been **designed, developed, tested, and manufactured in India** through cooperation between the **Atomic Energy Commission (AEC)** and Indian industries.
2. **Lowest-Cost Nuclear Power Plants:** India builds nuclear power plants at around **\$1,700 per kW**, compared to nearly **\$2,200 in South Korea, over \$5,500 in France**, and about **\$15,000 in the United States**. This makes Indian nuclear technology globally competitive.
3. **Export Potential:** India's combination of low cost and proven technology creates opportunities to become a major exporter of nuclear power plants. The large domestic market also strengthens manufacturing capability.
4. **Need to Avoid Costly Imports:** Importing expensive foreign reactors may increase electricity costs and create technological dependence. Greater use of proven domestic technology offers a more economical and secure option.
5. **Developing Indigenous LWR Technology:** India already manufactures **Pressurised Heavy Water Reactors (PHWRs)** using natural uranium. It should also develop indigenous **Light Water Reactors (LWRs)** because the **Nuclear Suppliers Group (NSG)** waiver permanently restricts the transfer of enrichment and reprocessing technologies.

Fast Breeder Reactor and Thorium Strategy

1. **Historic PFBR Achievement:** The **500 MWe Prototype Fast Breeder Reactor at Kalpakkam** achieved its first criticality on **6 April 2026**. Built by **Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI)** using technology developed by the **Indira Gandhi Centre for Atomic Research (IGCAR)**, it marks India's entry into the second stage of its nuclear programme.
2. **Global Significance:** Once fully operational, India will become **only the second country after Russia** to operate a commercial fast breeder reactor. This reflects decades of scientific work led by the **Department of Atomic Energy**.
3. **Three-Stage Nuclear Programme:** India's programme is based on a **closed nuclear fuel cycle** because the country has limited uranium but abundant thorium reserves. **Each stage produces fuel for the next stage and supports long-term energy independence.**
4. **Role of PHWRs:** In the **first stage**, **Pressurised Heavy Water Reactors (PHWRs)** use natural uranium to generate electricity. The spent fuel produces plutonium, which becomes the fuel for fast breeder reactors.
5. **Role of Fast Breeder Reactors:** Fast breeder reactors use plutonium-based **Mixed Oxide (MOX) fuel** and produce more fuel than they consume. They also breed **Uranium-233** from thorium, preparing the way for the third stage.
6. **Thorium-Based Future:** The final stage will use **Uranium-233** as fuel to utilise India's vast thorium reserves. This strategy supports long-term energy security using domestic resources.
7. **Fuel Reprocessing:** The spent fuel from the **Prototype Fast Breeder Reactor (PFBR)** will be reprocessed and recycled for reuse. This supports efficient fuel utilisation and prepares the way for large-scale thorium use.

Nuclear Expansion Mission

1. **Long-Term Capacity Target:** The Government aims to achieve **100 GW nuclear power capacity by 2047**. This supports India's clean energy transition and its **Net Zero target by 2070**.
2. **Current Nuclear Status:** India currently has **8.78 GW** of installed nuclear capacity. Nuclear power generated **56,681 Million Units** in **2024-25** and contributed **3.1%** of total electricity generation.
3. **Planned Growth:** Nuclear capacity is projected to increase to **22.38 GW by 2031-32** through indigenous **700 MW reactors** and **1,000 MW reactors** developed with international cooperation.
4. **Policy and Private Participation:** The sector has been opened to new public and private players through enabling legislation. The **SHANTI Act, 2025** allows limited private participation under regulatory oversight.
5. **Small Modular Reactors (SMRs):** The **Nuclear Energy Mission** allocates **₹20,000 crore** for SMR development. At least **five indigenous SMRs** are planned to become operational by **2033**.
6. **BARC's Advanced Reactor Programme:** BARC is developing the **200 MWe Bharat Small Modular Reactor (BSMR-200)**, the **55 MWe SMR-55**, and a **High-Temperature Gas-Cooled Reactor** for hydrogen production.

7. **International Cooperation:** India has signed **Civil Nuclear Cooperation Agreements with 18 countries**. These partnerships support peaceful nuclear development while strengthening global confidence in India's programme.

Challenges and Risks

1. **Maintaining Nuclear Safety:** India's nuclear plants have maintained an excellent safety record. This standard must continue as capacity expands and new players enter the sector.
2. **Managing Rapid Expansion:** Large-scale expansion increases the need for skilled project execution and strong safety culture. Industrial safety weaknesses should not affect nuclear facilities.
3. **Careful Entry of New Players:** New participants should first establish a strong internal safety culture before expanding operations. Continuous external auditing will help maintain high safety standards.
4. **Avoiding Public Backlash:** A single serious nuclear accident could weaken public confidence, as seen after the **Chernobyl accident of 1986**. Safety must remain the highest priority during expansion.
5. **Cautious Approach to Foreign SMRs:** Many foreign SMR designs are still under development and have not entered commercial operation. India should prefer tested technologies and avoid becoming the first deployment site for unproven designs.

Way Forward

1. **Expand Indigenous Reactor Technology:** Proven **Pressurised Heavy Water Reactors (PHWRs)**, **Fast Breeder Reactors (FBRs)**, and future indigenous reactors should remain the main drivers of nuclear expansion because they are reliable and cost-effective.
2. **Develop Indigenous Light Water Reactors (LWRs):** India should invest in developing **Light Water Reactors (LWRs)** as the **Nuclear Suppliers Group (NSG)** restrictions do not allow the transfer of enrichment and reprocessing technologies.
3. **Strengthen Domestic Research and Manufacturing:** Continued collaboration between the **Atomic Energy Commission (AEC)**, the **Department of Atomic Energy (DAE)**, and Indian industries should further improve indigenous reactor technologies and manufacturing capacity.
4. **Promote Indigenous Small Modular Reactors (SMRs):** The **Atomic Energy Commission (AEC)** should work with Indian companies to develop smaller indigenous reactors using its **200 MW technology** to meet emerging electricity demand, including artificial intelligence data centres.
5. **Leverage India's Cost Competitiveness:** India's low-cost indigenous reactor technology should be used to expand domestic capacity and strengthen its position as a competitive global supplier of nuclear power plants.
6. **Use International Cooperation Selectively:** International cooperation should complement India's programme without creating technological dependence or increasing the cost of nuclear electricity.

Conclusion

India's nuclear programme has reached a decisive stage with the successful **Prototype Fast Breeder Reactor (PFBR)** and expanding indigenous capabilities. Achieving **100 GW by 2047** will require affordable domestic technology, strong safety standards, careful expansion, and continued innovation. Following this path can strengthen **energy security, technological self-reliance, clean energy generation, and India's long-term global leadership in nuclear power.**

Question for practice:

Evaluate the right path for India's nuclear power development in the context of indigenous technological capabilities, the Prototype Fast Breeder Reactor (PFBR), and the country's long-term nuclear energy goals.

Source: [The Hindu](#)

Tourism can unlock India's journey to a new milestone

Source: The post "**Tourism can unlock India's journey to a new milestone**" has been created based on "**Tourism can unlock India's journey to a new milestone**" published in "Indian Express" on 13th July 2026.

UPSC Syllabus: GS-3 -Indian Economy

Context: Tourism has emerged as a major contributor to India's economy, contributing around **7% of GDP** and **over 9% of total employment**. It not only attracts visitors but also promotes entrepreneurship, infrastructure development, foreign exchange earnings, and strengthens India's soft power.

Economic Significance of Tourism

1. **Contribution to GDP:** Tourism contributes around **7%** to India's Gross Domestic Product, making it an important pillar of economic growth.
2. **Employment Generation:** The sector accounts for **over 9% of total employment**, and every direct job created in tourism generates multiple indirect employment opportunities.
3. **Entrepreneurship Promotion:** Tourism encourages entrepreneurship by creating business opportunities in hotels, transport, handicrafts, food services, and other allied sectors.
4. **Foreign Exchange Earnings:** The tourism sector contributes significantly to foreign exchange earnings by attracting international visitors.
5. **Strengthening Soft Power:** Tourism enhances India's global image by showcasing its rich natural, cultural, and spiritual heritage.

Emerging Opportunities in India's Tourism Sector

1. Post-pandemic Recovery

- a. India's hospitality sector has moved beyond post-pandemic recovery, with strong occupancy levels and average room rates exceeding pre-pandemic levels.
- b. The improved performance of the hospitality sector has increased investor confidence and encouraged capacity expansion and innovation.

2. Growing Investment Potential

- a. Institutional funds, family offices, listed hotel companies, and developers are increasingly investing in the hospitality sector.

- b. Institutional investment remains lower than that in mature global hospitality markets, indicating significant scope for future growth.

3. Expansion to Tier-II and Tier-III Cities: Tourism demand is increasingly expanding beyond metropolitan cities to Tier-II and Tier-III cities, creating a more diversified and resilient tourism ecosystem.

4. Infrastructure-led Tourism Growth

- a. The expansion of regional airports, better road connectivity, and the development of economic and industrial corridors are opening new tourism destinations.
- b. Airport-centric development is increasing demand for hotels through business travel, transit stays, and MICE (Meetings, Incentives, Conferences, and Exhibitions).
- c. Every new airport, highway, convention centre, or transport link creates new tourism opportunities and stimulates local investment.

Challenges

1. **Lack of Integrated Planning:** Hospitality development has not yet been fully integrated with broader infrastructure and economic planning.
2. **Limited Institutional Investment:** Institutional investment in India's tourism sector remains below the levels observed in mature hospitality markets.
3. **Destination Readiness:** Many emerging tourist destinations still lack adequate accommodation, visitor facilities, and supporting infrastructure.

Measures Required

1. **Policy Reforms:** The government should grant **industry status** to tourism across all states to improve access to capital and reduce financing costs.
2. **Destination Development:** The government should fast-track the development of **50 tourism destinations** under a mission-mode approach with clear implementation timelines.
3. **Global Promotion:** India should launch a dedicated **Brand Bharat** tourism promotion campaign with sustained financial support to strengthen its global tourism presence.
4. **Visa Reforms:** The government should expand e-visa facilities and simplify entry procedures to attract more international tourists.
5. **Infrastructure Development:** Greater investment should be made in last-mile connectivity, wayside amenities, and digital infrastructure to improve the visitor experience.
6. **Ease of Doing Business:** Taxation should be rationalised in line with global benchmarks, and a single-window clearance system should be introduced to encourage private investment.
7. **Integrated Tourism Planning:** Hospitality development should be integrated with investments in airports, highways, urban infrastructure, and destination development to maximise economic benefits.

Conclusion: Tourism is a strategic economic asset that can generate inclusive growth, employment, entrepreneurship, and infrastructure development. With coordinated policy reforms, infrastructure investment, destination readiness, and stronger global promotion, India can unlock its tourism potential and emerge as a leading global tourism destination while ensuring broad-based prosperity across urban and rural areas.

Question: Tourism is not merely a service sector but a strategic driver of economic growth and employment. Discuss the opportunities and policy measures required to unlock India's tourism potential.

Source: [Indian Express](#)

India-UK CETA stands out for both its breadth and pace

Source: The post “India-UK CETA stands out for both its breadth and pace” has been created based on “India-UK CETA stands out for both its breadth and pace” published in “Business Line” on 15th July 2026.

UPSC Syllabus: GS-3 -Indian Economy

Context: The **India-UK Comprehensive Economic and Trade Agreement (CETA)**, effective from **15 July 2026**, is one of India's most comprehensive Free Trade Agreements (FTAs) with a developed economy. It goes beyond tariff reductions by covering trade, investment, mobility, digital trade, intellectual property, and regulatory cooperation, thereby strengthening economic ties between the two countries.

Key Features of India-UK CETA

1. **Comprehensive Coverage:** The agreement covers goods, services, investment, digital trade, intellectual property rights, government procurement, standards, and regulatory cooperation under a single framework.
2. **Balanced Tariff Liberalisation:**
 - a. Indian exporters receive duty-free or preferential access to the UK market for most product lines.
 - b. The agreement protects India's sensitive sectors, particularly agriculture and dairy, by excluding or providing safeguards for these sectors.
 - c. Tariff reductions for UK exports such as Scotch whisky and automobiles will be implemented gradually through tariff-rate quotas and transition periods to avoid market disruptions.
3. **Social Security Arrangement:** The agreement includes a social security arrangement that prevents Indian professionals in the UK and UK nationals in India from making mandatory social security contributions in both countries for the same period of employment.
4. **Digital and Regulatory Cooperation:** The agreement promotes digital trade, paperless trade, and cooperation in emerging technologies while preserving India's regulatory autonomy and data governance.
5. **Women and Gender Chapter:** CETA includes India's first dedicated chapter on women and gender, which promotes market access, finance, and capacity-building for women entrepreneurs, workers, and artisans.

Benefits for the Indian Economy

1. **Boost to Merchandise Exports:** Indian exporters in textiles, leather, marine products, gems and jewellery, toys, engineering goods, chemicals, auto components, and processed foods will gain greater price competitiveness in the UK market.
2. **Support to MSMEs:** MSMEs will benefit from simplified customs procedures, trade facilitation measures, and greater cooperation on standards and conformity assessment. The agreement can encourage first-time exporters to enter the UK market.
3. **Growth in Services Sector:**

- a. Indian IT, healthcare, education, and professional service providers will benefit from more predictable market access and improved mobility provisions.
 - b. Better recognition of professional qualifications and the social security arrangement will facilitate overseas employment opportunities for skilled professionals.
4. **Promotion of Innovation and GI Products:**
 - a. Stronger protection for intellectual property rights and Geographical Indications (GI) will enhance the value of Indian products such as teas, spices, textiles, and handicrafts in the UK market.
 - b. Cooperation in research-intensive sectors will support innovation, start-ups, and R&D-based industries.
5. **Inclusive Economic Growth:** The dedicated provisions for women-led enterprises will promote inclusive participation in international trade.

Significance of CETA

1. **Strengthens India-UK Economic Partnership:** The agreement deepens bilateral economic cooperation through trade, investment, mobility, and regulatory collaboration.
2. **Supports India's Global Trade Strategy:** CETA reflects India's evolving approach towards negotiating comprehensive and high-standard FTAs with developed economies.
3. **Creates Long-term Economic Opportunities:** The agreement is expected to generate new exporters, create employment, improve competitiveness, and expand opportunities for professionals, students, MSMEs, and traditional artisans.

Conclusion: The India-UK CETA represents a significant milestone in India's trade policy by combining market access with investment, digital cooperation, mobility, and inclusive development. Its effective implementation can enhance exports, strengthen India's services sector, improve global competitiveness, and contribute to India's long-term economic growth in an evolving global trade architecture.

Question: The India-UK Comprehensive Economic and Trade Agreement (CETA) marks a significant step in India's trade policy. Discuss its key features and the potential benefits for the Indian economy.

Source: [Business Line](#)

India-U.S. Defence Technology Ties — Big Ambitions, Little Delivery

UPSC Syllabus: Gs Paper 2- International Relation

Introduction

India and the United States have expanded their defence partnership through new technology initiatives, defence trade and strategic cooperation over the past two decades. However, most ambitious defence technology projects have struggled to move beyond political announcements. Differences over technology transfer, export controls, commercial expectations and lengthy negotiations have slowed implementation, leaving the partnership stronger in defence procurement than in defence-industrial collaboration.

Evolution of India-U.S. Defence Technology Cooperation

1. **Expansion of Defence Partnership:** India-U.S. defence ties have grown steadily since 2002. India has purchased **over \$22 billion** worth of U.S. defence equipment, making the U.S. one of India's major defence suppliers.
2. **Defence Technology and Trade Initiative (DTTI):** Launched in **2012**, DTTI aimed to promote co-development and co-production of defence systems. Despite years of discussions, it failed to deliver any major military capability.
3. **Initiative on Critical and Emerging Technologies (iCET):** Introduced in **2022**, iCET expanded cooperation into defence, semiconductors, artificial intelligence, quantum technologies, space, biotechnology, drones and resilient supply chains. Its flagship defence project, the **GE F414 engine**, is still under negotiation.
4. **INDUS-X Initiative:** Started in **2023**, INDUS-X sought to connect defence start-ups, industry and academia. However, it has not yet produced any significant co-development outcomes.
5. **New Defence Cooperation Frameworks:** The **Underwater Domain Awareness (UDA)** programme focuses on tracking submarines, protecting seabed infrastructure and strengthening surveillance in the Indian Ocean. The proposed **Reciprocal Defence Procurement Agreement (RDPA)** is expected to deepen defence trade but also raises concerns about competition for India's domestic industry.

Status of Key Defence Technology and Industrial Collaboration Projects

1. **GE F414 Fighter Engine:** The project was announced during Prime Minister Narendra Modi's **2023 U.S. visit** as the flagship outcome of iCET. However, negotiations remain unresolved because of disagreements over technology transfer, intellectual property, export controls and rising costs, with the estimated engine price increasing from about **₹70-80 crore to over ₹200 crore**.
2. **Javelin Anti-Tank Guided Missile:** Discussions on acquiring and co-producing the Javelin missile have continued for more than **16 years**. The programme remains unresolved despite repeated political support.
3. **Stryker Infantry Combat Vehicle:** The proposed partnership aims to adapt the vehicle for Indian conditions, including high-altitude operations. However, localisation, user trials, production arrangements and commercial negotiations remain incomplete.
4. **MQ-9B Unmanned Aerial Vehicles:** India signed a **\$3.5-4 billion** agreement in **2024** to acquire **31 MQ-9B SeaGuardian and SkyGuardian drones**. While the project includes maintenance infrastructure, it does not provide local assembly or meaningful transfer of core technology.

Factors Hindering Defence Technology Cooperation

1. **Different Strategic Priorities:** India views defence cooperation as a way to acquire advanced technology, strengthen domestic manufacturing and support **Atmanirbhar Bharat**. The United States treats advanced defence technologies as strategic assets that require strict control.
2. **Export Control Restrictions:** U.S. defence exports are governed by the **International Traffic in Arms Regulations (ITAR)**. These rules restrict the transfer of technical knowledge and manufacturing expertise even when broader strategic relations improve.

3. **Technology Transfer and Intellectual Property Issues:** India seeks access to manufacturing know-how and intellectual property to build long-term capability. The United States remains cautious about sharing sensitive technologies, slowing negotiations on major projects like the **GE F414 engine**.
4. **Commercial and Procurement Challenges:** Major projects often involve disagreements over costs, investment, localisation and licensing arrangements. Multiple Indian agencies negotiating separately with the same supplier also make agreements more difficult to conclude.
5. **Lengthy Regulatory Procedures:** Defence projects pass through several rounds of negotiations, evaluations, approvals and oversight in both countries. These processes slow implementation even when both governments support the partnership.

Structural Characteristics of India-U.S. Defence Cooperation

1. **Strategic Partnership with Limited Industrial Depth:** Military exercises, logistics agreements and interoperability have expanded steadily. However, defence-industrial cooperation has not progressed at the same pace.
2. **Announcement-Implementation Gap:** Successive initiatives have been described as historic or transformational. Yet, many have remained stuck in negotiations without producing expected industrial outcomes.
3. **Procurement over Technology Transfer:** India-U.S. defence ties have expanded mainly through equipment purchases. However, meaningful co-production and transfer of advanced technologies have remained limited.
4. **High-Maintenance, Low-Deliverability:** Defence industry officials describe the partnership as "high maintenance, but low deliverability." Projects often take years because of lengthy negotiations and regulatory procedures.
5. **Future Frameworks Face Similar Risks:** New initiatives such as **UDA** and the proposed **RDPA** will also depend on resolving the same structural issues that affected earlier programmes.

India's Experience with Other Defence Partners

1. **Russia:** Russia remains India's largest defence supplier with around **45–55%** of defence imports. It has generally been the most flexible partner by supporting licensed production, local assembly and co-development projects such as the **BrahMos** missile.
2. **Israel:** Israel accounts for around **10–15%** of India's defence imports and is known for quick delivery of drones, air defence systems and precision-guided weapons. It has shown flexibility in integrating Indian systems, although it also protects its most sensitive technologies.
3. **France:** France contributes around **10–20%** of India's imports through platforms such as the **Rafale** fighter aircraft and **Scorpene** submarines. It has generally offered greater flexibility on technology transfer and industrial participation than most Western partners, while retaining control over critical technologies like fighter aircraft source codes.

4. **United States:** The U.S. also contributes around **10–15%** of India's defence imports and supplies some of the world's most advanced military equipment. However, strict export controls, Congressional oversight, end-use monitoring and limited flexibility in technology sharing make it India's most demanding defence partner.
5. **Comparative Assessment:** Industry assessments generally rank **Russia first, followed by Israel, France and the United States** in terms of ease of concluding defence deals and adapting equipment to Indian requirements. Unlike Russia, Israel and France, the U.S. system allows very little flexibility in modifying imported military systems for Indian operational needs.

Conclusion

India-U.S. defence ties have grown into a strong strategic partnership, but defence technology cooperation continues to lag behind political ambition. Future initiatives such as the **UDA programme** and **RDPA** will succeed only if both countries address technology transfer concerns, regulatory barriers and implementation delays, enabling defence cooperation to move beyond procurement towards genuine industrial collaboration.

Question for practice:

Evaluate the progress, challenges and future prospects of India–U.S. defence technology cooperation in achieving meaningful defence-industrial collaboration.

Source: [The Hindu](#)

What is "Trial in Absentia"?

UPSC Syllabus: Gs Paper 2- Judiciary

Introduction

A **trial in absentia** is a criminal trial conducted without the physical presence of the accused. **Section 356 of the Bharatiya Nagarik Suraksha Sanhita (BNSS)** introduces this provision for proclaimed offenders who deliberately evade trial and cannot be arrested soon. The law seeks to prevent serious criminal cases from remaining pending, while prescribing safeguards to protect the accused's right to a fair trial and maintain the balance between public interest and individual rights.

Meaning of Trial in Absentia

1. **Definition:** A **trial in absentia** means a criminal trial conducted in the absence of the accused before the court.
2. **Basic principle:** The law is based on the idea that a person who deliberately avoids the court may be treated as having waived the right to remain present during the trial.
3. **Exceptional procedure:** The presence of the accused remains the normal rule in criminal trials. Trial in absentia is an exception used only in limited and serious situations.
4. **Purpose:** It prevents criminal proceedings from remaining pending only because the accused continues to evade the legal process.

Legal Framework under Section 356 of BNSS

1. **Statutory basis: Section 356 of the BNSS** provides the legal authority to conduct a full criminal trial in the absence of the accused.
2. **Conditions for use:** The provision applies only when a proclaimed offender has absconded to avoid trial and there is **no immediate prospect of arrest**.
3. **Judicial satisfaction:** Before proceeding, the court must record its reasons in writing to justify conducting the trial without the accused.
4. **Court's powers:** Once the legal conditions are fulfilled, the court may continue the inquiry, conduct the trial and pronounce judgment as if the accused were present.
5. **Part of criminal law reform:** The BNSS replaces the **Code of Criminal Procedure (CrPC), 1973**, and introduces a complete legal framework for trial in absentia.

Applicability and Procedural Safeguards

1. **Limited applicability:** The provision applies only to a **proclaimed offender** declared under **Section 84 of the BNSS**. It cannot be used against every absconding accused.
2. **Serious offences only:** Trial in absentia is limited to offences punishable with **imprisonment of 10 years or more, life imprisonment or death** under the **Bharatiya Nyaya Sanhita, 2023**, or any other law.
3. **Declaration as proclaimed offender:** A court may declare a person a proclaimed offender after the required inquiry if the person fails to appear following a proclamation.
4. **Repeated attempts to secure presence:** Before starting the trial, **two consecutive warrants of arrest** must be issued with an interval of at least **30 days**.
5. **Notice to the accused:** A notice must be published in a local or national newspaper, displayed at the accused's last known residence, and a relative or friend must also be informed. The accused gets **30 days** to appear.
6. **Opportunity for defence:** The trial cannot begin until **90 days** after framing of charges. If the accused has no lawyer, the court must appoint one at the **State's expense**.
7. **Protection of evidence:** Statements of prosecution witnesses recorded before the trial may be used as evidence. If the accused later appears or is arrested, the court may allow cross-examination in the interest of justice.
8. **Use of technology:** Witness examination should, as far as possible, be recorded through **audiovisual electronic means**. These recordings must be preserved to maintain transparency and facilitate later review.

How BNSS Differs from the CrPC

1. **Earlier legal position:** The CrPC allowed proclamation, attachment of property, recording of evidence in the absence of an absconding accused and limited exemption from personal appearance.
2. **Limited scope under CrPC:** These provisions did not permit a complete criminal trial and pronouncement of judgment against an absconding accused.
3. **Judicial discretion under the CrPC:** The CrPC allowed courts to proceed without the accused's personal attendance only in limited situations, such as when personal presence was unnecessary in the interest of justice or when the accused repeatedly disturbed the proceedings.
4. **Major reform under BNSS: Section 356** allows a full trial and judgment against proclaimed offenders, reducing delays caused by accused persons who continue to evade arrest.
5. **Change in criminal procedure:** The new law shifts the focus from merely preserving evidence to completing the entire judicial process in eligible cases.

Significance and Concerns

1. **Speedy disposal of serious cases:** The provision helps courts continue proceedings instead of keeping grave criminal cases pending for years because an accused cannot be arrested.
2. **Public interest:** It seeks to ensure that deliberate evasion of the law does not defeat the administration of justice or delay the conclusion of serious criminal trials.
3. **Balance through safeguards:** The law includes safeguards such as judicial approval, waiting periods, public notice, legal aid and audiovisual recording to reduce the risk of unfair trials.
4. **Fair trial concerns:** The absence of the accused during stages such as cross-examination and sentencing may limit the ability to challenge evidence and raise questions about the fairness of the trial..
5. **International standards:** Article 14(3)(d) of the International Covenant on Civil and Political Rights (ICCPR) recognises the accused's right to be tried in their presence. Limited exceptions are accepted only with strong procedural safeguards.
6. **Possibility of misuse:** Concerns remain that broad use of the provision may weaken fair trial rights if sufficient efforts are not made to secure the accused's presence or if its scope expands beyond exceptional cases.

Conclusion

Trial in absentia under the BNSS is a significant criminal justice reform that enables courts to conclude cases involving proclaimed offenders accused of grave offences who deliberately evade trial. However, it should remain an exceptional measure and be used only with strict compliance with the prescribed safeguards. This is essential to protect **speedy justice, public interest and the fundamental right to a fair**.

Question for practice:

Examine the concept of trial in absentia under the Bharatiya Nagarik Suraksha Sanhita (BNSS), highlighting its legal framework, procedural safeguards, significance, and concerns.

Sources: [The Hindu](#)

Giving women farmers the recognition they deserve

Source: The post "Giving women farmers the recognition they deserve" has been created based on "A law to give women farmers the recognition they deserve" published in "Indian Express" on 16th July 2026.

UPSC Syllabus: GS 3- Social Justice

Context: Maharashtra has become the first state in India to enact the **Maharashtra Women Farmers Empowerment Act, 2026**, making it a landmark initiative for recognising and empowering women farmers. The Act also aligns with the **International Year of the Woman Farmer (2026)**, which seeks to promote fair, inclusive and sustainable agrifood systems.

Need of the Act

1. Women undertake a significant share of agricultural work, ranging from production to processing, yet their contribution remains largely unrecognised. They continue to face barriers in accessing institutional credit, crop insurance, extension services, technology and markets, while most government benefits remain linked to land ownership, which is predominantly held by men.
2. According to the **Periodic Labour Force Survey (2025)**, **82% of the rural female workforce** in Maharashtra is engaged in agriculture compared to **58% of rural men**, but **less than one-fifth of operational landholdings** are owned by women.
3. The increasing migration of men in search of employment has placed greater responsibility on women for agriculture, food security and nutrition.

Key Provisions of the Maharashtra Women Farmers Empowerment Act, 2026

1. The Act adopts a broad definition of "**agriculture**" and "**farmer**" in line with the **National Policy for Farmers (2007)** and recognises women engaged in crop husbandry, animal husbandry, poultry, fishery, agro-forestry, vermiculture, mushroom cultivation and primary processing, whether as landowners or labourers.
2. It provides for the issuance of a **Woman Farmer Certificate (WFC)** through the Gram Sabha or Nagar Panchayat, thereby formally recognising women as farmers without making land ownership a mandatory condition.
3. The Act enables women farmers to access government schemes, institutional credit, extension services and market opportunities, while also promoting gender-responsive skill development programmes and targeted support for single women farmers.
4. To ensure effective implementation, the Act establishes a digital registry of women farmers, a special fund, empowerment cells at different administrative levels, a **State-level Monitoring Committee** headed by the Chief Secretary and a **Governing Council** headed by the Chief Minister.

Significance of the Act

1. The Act provides formal recognition to women as farmers and promotes gender equality by improving their access to agricultural entitlements, productive resources and financial services.

2. By removing land ownership as a prerequisite for farmer recognition, it enhances women's access to government benefits, institutional credit, markets and extension services, thereby strengthening their economic empowerment.
3. The digital registry and institutional mechanisms will facilitate better targeting of welfare schemes and improve policy formulation for women farmers.
4. The Act also strengthens women's role in agricultural decision-making, food and nutrition security and climate change adaptation, and can serve as a model for other states.

Way Forward

1. The Act should be supported through adequate funding, effective implementation and regular monitoring, along with awareness campaigns to encourage eligible women to obtain the **Woman Farmer Certificate (WFC)**.
2. Women's access to credit, insurance, technology, markets and extension services should be further strengthened, while the digital registry should be regularly updated to ensure efficient delivery of benefits.
3. Other states should adopt similar legislative measures to provide legal recognition and equal opportunities to women farmers across India.

Conclusion: The **Maharashtra Women Farmers Empowerment Act, 2026** is a landmark step towards addressing gender inequalities in agriculture by formally recognising women as farmers and expanding their access to rights and entitlements. Effective implementation of the Act can strengthen women's economic empowerment, promote inclusive rural development and contribute to sustainable agrifood systems.

Question: Recognising women as farmers is essential for achieving inclusive and sustainable agricultural development. In this context, discuss the significance of the Maharashtra Women Farmers Empowerment Act, 2026.

Source: Indian Express

Empowering India's Skill Ecosystem

Source: The post "Empowering India's Skill Ecosystem" has been created based on "Empowering India's Skill Ecosystem" published in "PIB" on 16th July 2026.

UPSC Syllabus: GS 3- Indian Economy

Context: India's demographic dividend can become a demographic advantage only through a **skilled, productive and innovation-driven workforce**. Recognising this, the Government has adopted a **life-cycle approach** integrating education, skilling, employment, entrepreneurship and lifelong learning to achieve the vision of **Viksit Bharat 2047**.

Government Initiatives to Strengthen India's Skill Ecosystem

1. Building Skills from School Level

- a. **Samagra Shiksha** integrates vocational education from school level through **138 job roles** across **25,140 schools** covering over **35.5 lakh students**.
- b. **PM SHRI Schools** promote NEP 2020 by developing **21st-century skills** and holistic education.

- c. **Atal Tinkering Laboratories (ATLs)** foster innovation, creativity and problem-solving among students.
- d. **SOAR (Skilling for AI Readiness)** imparts AI education to students and teachers in partnership with industry.
- e. **YUVA AI for ALL** promotes AI literacy through free self-paced courses.
- f. **NSQF** integrates academic and vocational education while enabling lifelong learning and career mobility.
- g. **Vidyanjali Programme** strengthens community participation through mentoring, career guidance and skill development.

2. Workforce Upskilling and Reskilling

- a. **Skill India Mission (SIM)** provides NSQF-aligned skilling through PMKVY, JSS, NAPS and CTS.
- b. **PMKVY 4.0** focuses on demand-driven skilling, future skills and industry-specific job roles.
- c. **Jan Shikshan Sansthan (JSS)** provides community-based skill training, especially benefiting women and tribal communities.
- d. **National Apprenticeship Promotion Scheme (NAPS)** promotes industry-led apprenticeship through the **Earn While You Learn** model.
- e. **Craftsmen Training Scheme (CTS)** strengthens Industrial Training Institutes (ITIs) through long-term vocational education.
- f. **PM-SETU** modernises ITIs through hub-and-spoke clusters and National Centres of Excellence.
- g. **FutureSkills Prime** and **IndiaAI FutureSkills Pillar** promote AI, digital and emerging technology skills.
- h. **Pradhan Mantri Viksit Bharat Rozgar Yojana** incentivises first-time employment and employer-led hiring.

3. Entrepreneurship Development

- a. **PM Vishwakarma** supports traditional artisans through skill upgradation, credit, toolkit incentives and market access.
- b. **Startup India Courses** provide free online entrepreneurship and business management training.
- c. **Entrepreneurship Development Programmes (EDPs/ESDPs)** by NIESBUD, IIE and MSME Ministry promote self-employment and enterprise creation.

4. Women-Centric Skilling

- a. **AI Careers for Women** equips rural women with AI and future-ready skills.
- b. **Swavalambini Programme** promotes women entrepreneurship through awareness and development programmes.
- c. **NAVYA** provides vocational training, financial literacy and digital skills to adolescent girls in aspirational districts.

5. International and Private Sector Partnerships: Collaboration with **industry, academia, Microsoft, HCL, NASSCOM and international organisations** ensures industry-relevant curriculum, AI readiness and global employability.

Challenges

1. **Persistent Skill Mismatch:** There is a persistent mismatch between the skills imparted through training programmes and the skills demanded by industries, leading to lower employability.
2. **Inadequate Training Infrastructure:** The quality of skill training infrastructure remains uneven across regions, with rural and remote areas having limited access to modern training facilities.
3. **Limited Apprenticeship Opportunities:** Apprenticeship opportunities remain inadequate, particularly in the informal sector, which employs a large proportion of India's workforce.
4. **Low Female Labour Force Participation:** Despite several women-centric skilling initiatives, female labour force participation continues to remain low due to social, economic and workplace barriers.
5. **Digital Divide:** The digital divide restricts access to online learning platforms, especially for learners in rural and economically weaker regions.
6. **Weak Placement and Post-Training Support:** Placement services, trainee tracking and post-training support mechanisms remain weak, reducing the long-term effectiveness of skilling programmes.
7. **Rapid Technological Changes:** The curriculum requires continuous revision to keep pace with emerging technologies such as Artificial Intelligence (AI), green technologies and advanced manufacturing.

Way Forward

1. Strengthen **industry-academia collaboration** for demand-driven curriculum design.
2. Expand apprenticeships and work-integrated learning across sectors.
3. Improve quality assurance through regular assessment and outcome-based monitoring.
4. Promote digital infrastructure and multilingual e-learning platforms.
5. Increase focus on AI, green skills, semiconductor, robotics and advanced manufacturing.
6. Enhance women-centric skilling with childcare support, safe workplaces and flexible training.
7. Strengthen international mobility partnerships to position India as a **global talent hub**.
8. Integrate skilling with employment generation, entrepreneurship and lifelong learning for sustainable workforce development.

Conclusion: India's life-cycle approach to skill development is transforming the country from **classroom to enterprise** by integrating education, employment and entrepreneurship. Continued reforms focused on quality, inclusion and future-ready skills will enable India to harness its demographic dividend and emerge as the **world's leading talent hub** while realising the vision of **Viksit Bharat 2047**.

Question: "India's vision of becoming the global talent hub requires a life-cycle approach to skill development." Discuss the major government initiatives to strengthen India's skill ecosystem. Also examine the challenges and suggest the way forward.

Source: [PIB](#)

The Crisis at the Heart of Non-Proliferation

UPSC Syllabus: Gs Paper 3- International Relations

Introduction

The present dispute over **Iran's nuclear programme** has exposed deeper contradictions within the global **nuclear non-proliferation regime**. Iran is being asked to dismantle its enriched uranium stockpile, while recognised nuclear weapon states continue to retain and modernise their arsenals without similar obligations.

This has revived questions about the fairness, consistency and credibility of the existing nuclear order and the slow progress towards universal nuclear disarmament.

Understanding the Global Nuclear Non-Proliferation Regime

1. **Purpose of Non-Proliferation:** Non-proliferation seeks to prevent the spread of nuclear weapons while allowing the peaceful use of nuclear energy. It mainly depends on diplomacy, international cooperation, inspections, and negotiated agreements.
2. **NPT-Based Nuclear Order:** The **Treaty on the Non-Proliferation of Nuclear Weapons (NPT)** divided countries into recognised nuclear weapon states and non-nuclear weapon states. It expected restraint from non-nuclear states while nuclear powers continued to retain and modernise their arsenals.
3. **Difference from Counterproliferation:** Non-proliferation relies on cooperation and transparency. Counterproliferation uses sanctions, military pressure, cyber operations, and covert actions to stop suspected nuclear programmes.
4. **Growing Shift from Non-Proliferation to Counterproliferation:** The increasing use of force-based measures has reduced trust in diplomatic solutions. This shift has weakened the cooperative spirit that originally guided the non-proliferation regime.

Iran's Nuclear Programme and the Present Deadlock

1. **Earlier Diplomatic Engagements:** Iran signed the **Tehran Declaration (2003)**, accepted the **Additional Protocol (2003)**, concluded the **Paris Agreement (2004)**, and proposed limited uranium enrichment for civilian purposes in **2005**. These initiatives sought to reduce tensions through negotiations and international cooperation.
2. **JCPOA and its Collapse:** The **Joint Comprehensive Plan of Action (JCPOA)**, negotiated in **2015**, represented a major diplomatic breakthrough. However, the **US withdrawal in 2018**, followed by the reimposition of sanctions, undermined the agreement and deepened mistrust between Iran and the West.
3. **Current Diplomatic Impasse:** Talks in Doha remain stalled over frozen Iranian assets and verification mechanisms. Iran is also being asked to dismantle its enriched uranium stockpile in return for economic compensation.
4. **Iran's Position:** President **Masoud Pezeshkian** has stated that Iran will not give up its sovereign right to enrich uranium. Iran argues that enrichment remains its legal right.
5. **Demand for Complete Dismantlement:** Iran faces pressure to eliminate its enrichment capability. At the same time, existing nuclear weapon states are not required to surrender their arsenals.
6. **Core Question Raised:** The present dispute raises the issue of why Iran alone should abandon a capability that **nine nuclear-armed states** continue to possess.

Why is the Existing Non-Proliferation Order Criticised?

1. **Unequal Rules for Different States:** The present system applies different standards to different countries. Nuclear powers continue to possess weapons while demanding restraint from others.
2. **Different Treatment of Nuclear States: India and Pakistan,** despite remaining outside the NPT, are accepted as strategic partners. **Israel's** undeclared nuclear capability also faces no comparable international pressure.
3. **Iran's Different Experience:** Iran pursued uranium enrichment within a legal framework and accepted the most extensive inspection system under the **Joint Comprehensive Plan of Action (JCPOA)**. Even after compliance, it faced renewed sanctions and military threats.
4. **Question of Fairness:** The unequal application of nuclear rules creates the perception that geopolitical interests influence non-proliferation more than equal enforcement.

The JCPOA and the Crisis of Trust

1. **A Successful Diplomatic Agreement:** The JCPOA, negotiated during the **Barack Obama** administration, showed that difficult nuclear disputes could be addressed through multilateral diplomacy.
2. **US Withdrawal from the Agreement:** The **Donald Trump** administration withdrew from the agreement in **2018**. This decision ended an important diplomatic understanding despite Iran's compliance.
3. **Loss of Confidence in Future Agreements:** The collapse of the JCPOA created doubts about whether future nuclear agreements with the United States would remain reliable over time.
4. **Impact on the Present Crisis:** If the present Iran nuclear dispute becomes more severe, the breakdown of the JCPOA will remain one of its major immediate causes.

Historical and Ethical Dimensions

1. **Legacy of Hiroshima and Nagasaki:** The atomic bombings of **Hiroshima** and **Nagasaki** remain the only use of nuclear weapons in war. They demonstrated both the destructive power of nuclear weapons and the acceptance of their use under claims of strategic necessity.
2. **Moral Authority Under Question:** A country that has used nuclear weapons occupies a unique position when it seeks to regulate the nuclear ambitions of others. This creates a continuing ethical contradiction.
3. **Selective Interpretation of International Norms:** States demanding restraint from others are criticised for applying international law selectively. This weakens the moral basis of the existing nuclear order.

4. **Call for Universal Disarmament:** Albert Einstein and Bertrand Russell argued in 1955 that nuclear weapons should be abolished by all countries without exception. Their warning remains relevant because deterrence alone cannot permanently prevent catastrophe.

Impact on the Global Nuclear Order

1. **Crisis in the Non-Proliferation Regime:** The global non-proliferation regime is facing a serious credibility crisis. Growing reliance on coercive measures has weakened cooperation, transparency, and confidence among states.
2. **Weakening of Arms Control:** Major arms-control agreements have become weaker over time. This has reduced confidence in cooperative nuclear governance and made future disarmament efforts more difficult.
3. **Declining Trust in International Agreements:** The collapse of the JCPOA and selective implementation of nuclear policies have reduced confidence in diplomatic commitments. Countries may become less willing to rely on future arms-control agreements.
4. **Risk of Nuclear Competition:** Growing insecurity and weakening diplomacy may encourage more countries to view nuclear weapons as security guarantees. This increases the possibility of regional arms races and long-term instability.
5. **Threat to Peaceful Nuclear Rights:** Greater use of sanctions and coercive measures may also affect the right of countries to develop peaceful nuclear energy under the NPT. This creates resentment among states that consider such restrictions unfair.

The Way Forward

1. **Restore Diplomacy:** Negotiations should remain the primary method for resolving nuclear disputes. Durable agreements require sustained dialogue instead of coercive measures.
2. **Ensure Equal Application of Rules:** Nuclear obligations should be applied consistently to all states. Equal standards are essential to restore the credibility and fairness of the global non-proliferation regime.
3. **Strengthen IAEA Verification:** States should continue allowing effective IAEA inspections and transparent verification mechanisms. Strong monitoring reduces mistrust and supports peaceful nuclear cooperation.
4. **Rebuild Confidence in Arms-Control Agreements:** Future nuclear agreements should be implemented in good faith by all parties. Reliable commitments are essential for restoring trust in multilateral diplomacy.
5. **Discourage Coercive Counterproliferation Measures:** Greater reliance on sanctions, sabotage, cyberattacks, and military operations should be avoided. Such measures weaken transparency, increase mistrust, and may escalate conflicts.

6. **Advance Universal Nuclear Disarmament:** Lasting global security requires the elimination of nuclear weapons by all states. Universal disarmament remains the most sustainable solution to the contradictions of the present nuclear order.

Conclusion

The Iran nuclear dispute highlights the deeper contradictions within the global non-proliferation system. **Selective enforcement, unequal treatment of states, and delayed disarmament commitments** have weakened trust in the existing framework. A credible nuclear order requires **consistent rules, stronger diplomacy, reliable agreements, and universal commitment to nuclear disarmament**, instead of maintaining different standards for different countries.

Question for practice:

Examine how the Iran nuclear issue has exposed the contradictions within the global nuclear non-proliferation regime.

Source: [The Hindu](#)

UN Report on Need for AI Governance

UPSC Syllabus: Gs Paper 2- e-governance

Introduction

The **United Nations' Preliminary Report of the Independent International Scientific Panel on AI (IISPA)** has gained attention ahead of the inaugural **UN Global Dialogue on AI Governance**. The report warns that artificial intelligence is advancing much faster than scientific understanding, safety measures, and existing governance systems. It calls for stronger international cooperation, scientific assessment, and effective governance to ensure that AI develops in a safe, transparent, and inclusive manner.

About the Independent International Scientific Panel on AI (IISPA)

1. **UN Scientific Initiative:** The **Independent International Scientific Panel on AI (IISPA)** is the first independent scientific assessment of AI commissioned by the United Nations. It studies AI capabilities, opportunities, risks, and governance needs.
2. **Leadership and Composition:** The **40-member panel** is co-chaired by **Yoshua Bengio**, a Turing Award laureate, and **Maria Ressa**, a Nobel Peace Prize laureate. It brings together scientific expertise for evidence-based policymaking.
3. **Areas of Assessment:** The panel studies AI across **seven themes**, including AI science, healthcare, education, agriculture, economy, security, environment, human rights, democracy, cultural wellbeing, governance, and reliability.
4. **Periodic Assessment Mechanism:** The preliminary report is the first in a series of regular assessments. A more comprehensive report is expected next year to strengthen global scientific understanding of AI.

Why AI Governance Has Become Urgent

1. **AI Advancing Faster than Governance:** AI capabilities are growing much faster than scientific understanding, public oversight, and existing regulations. Governments may respond only after serious harms have already occurred.
2. **Rise of Frontier and Agentic AI:** Frontier AI models and autonomous AI agents can perform complex tasks with limited human intervention. While they improve productivity, they also create new governance and safety concerns.
3. **Weak Governance Mechanisms:** Existing AI governance frameworks are fragmented across countries and are largely influenced by a few corporations. Independent methods to assess AI capabilities and risks remain underdeveloped.
4. **Need for Scientific Evidence:** Policymakers require independent scientific assessments to frame effective AI regulations. Better evidence can help balance innovation with safety and public interest.

Key Concerns Identified by the UN Report

1. **Compute Divide:** The global AI race is increasingly shaped by control over computing infrastructure rather than talent or innovation alone. The **United States holds about 75%** of global AI computing capacity, **China 15%**, while the **rest of the world shares only 10%**.
2. **Concentration of AI Power:** AI development depends on expensive chips, cloud infrastructure, specialised talent, and large investments. This has concentrated AI capabilities in a few countries and companies, reducing competition and increasing dependence.
3. **Growing Safety and Cybersecurity Risks:** Highly autonomous AI systems are moving beyond direct human supervision. This raises cybersecurity concerns and increases the risk of society losing effective control over these systems.
4. **Threats to Democracy and Human Rights:** AI-powered deepfakes and persuasion algorithms can spread misinformation, weaken public trust, and influence elections. Concentrated AI capabilities may also weaken democratic accountability and exclude many linguistic and cultural communities.
5. **Human and Child Safety:** AI-generated child sexual abuse material (CSAM) has increased rapidly. Some engagement-driven chatbots have also worsened mental distress among vulnerable users by encouraging harmful behaviour.
6. **Language and Cultural Bias:** Most AI models are designed mainly for a few dominant languages. Poor performance in underrepresented languages, including medical mistranslations, can create serious risks.
7. **Challenges for Developing Countries:** Limited access to computing infrastructure, advanced chips, and quality datasets may prevent many developing countries from building sovereign AI capabilities. In **2025**, institutions in the **United States produced 59 notable AI models**, **China 35**, and the **rest of the world only 13**, highlighting the widening AI gap.

Significance for India

1. **Strengthening Domestic AI Infrastructure:** India's **IndiaAI Mission** and investment in computing hardware support the goal of building stronger domestic AI capacity. Expanding indigenous compute infrastructure is becoming strategically important.
2. **Building Sovereign AI Capabilities:** Better access to computing power, advanced chips, and quality datasets can help India develop AI suited to its own languages and development priorities.
3. **Preventing Long-Term Dependence:** Expanding indigenous compute infrastructure can help India reduce technological dependence and strengthen its role in global AI development.
4. **Role in Global AI Governance:** India is participating in the **United Nations Global Dialogue on AI Governance** through its official delegation, contributing to discussions on global AI cooperation and governance.

Recommendations of the UN Panel

1. **Build Local AI Capacity:** Countries should invest in domestic computing infrastructure, skilled talent, and research to build sovereign AI capabilities and reduce dependence on a few global providers.
2. **Promote Wider Access to AI Resources:** Greater access to computing infrastructure, scientific resources, and public-interest AI should be encouraged so that more countries can participate in AI development.
3. **Strengthen Independent Oversight:** Governments should require independent third-party capability and risk assessments instead of relying only on company-led safety evaluations.
4. **Regulate AI System Design:** Governance should focus not only on AI-generated content but also on the underlying architecture and behavioural design of AI systems.
5. **Protect Human Rights:** Human rights and child rights impact assessments should be applied throughout the AI lifecycle, including design, deployment, and auditing.
6. **Support Open Scientific Research:** Open scientific collaboration and stronger evaluation methods can improve transparency, accountability, and trust in AI systems.
7. **Establish a Continuous UN Platform:** A permanent United Nations-based platform should bring together governments, scientists, and AI developers to coordinate global AI governance and safety standards.

Conclusion

Artificial intelligence is becoming a strategic technology with major economic, social, and security implications. Its rapid development requires stronger global governance supported by independent scientific assessment and international cooperation. Wider access to AI resources, greater transparency, accountability, and robust human oversight are essential. These measures can help ensure that AI benefits all countries instead of widening existing technological and governance inequalities.

Question for practice:

Evaluate the need for global AI governance in light of the United Nations' Preliminary Report of the Independent International Scientific Panel on AI (IISPA).

Source: [Indian Express](#)

Smoke and Noise - The E20 Confusion

Source: The post "Smoke and Noise - The E20 Confusion" has been created based on "Smoke and Noise - The E20 Confusion" published in "The Hindu" on 17th July 2026.

UPSC Syllabus: GS 3 –Environment

Context: India achieved the target of **20% ethanol blending (E20)** in petrol in **July 2025**, nearly five years ahead of the original deadline. From **April 2026**, all **BS VI vehicles** are required to comply with **E20 emission standards**, making E20 the standard fuel across the country. While the policy aims to improve energy security and reduce dependence on imported crude oil, it has also created uncertainty among consumers regarding vehicle performance and costs.

Issues and Concerns

1. **Reduced fuel efficiency:** The Central Government has acknowledged that **E20 petrol reduces fuel efficiency by around 3.5% compared to E10** and by an even greater margin when compared with pure petrol. This increases the running cost for vehicle owners.
2. **Concerns over vehicle durability:** Many vehicle owners believe that E20 fuel may increase **wear and tear of engines, fuel lines, and rubber components**. Although the government states that there is no evidence of such damage, consumer concerns continue.
3. **Lack of policy clarity:** The government's FAQ does not clearly explain whether **existing vehicles should be modified, serviced, or replaced** for safe use of E20 fuel. This has left consumers uncertain about the future of their vehicles.
4. **Limited consumer choice:** Consumers who prefer conventional petrol have **very few alternatives**, as ethanol-free petrol has almost disappeared from fuel stations due to the nationwide shift towards ethanol blending.
5. **Confusion over E20 compatibility:** The government has cited that **Maruti Suzuki serviced about 1.5 crore older vehicles without finding damage** to engines or fuel components. This has created confusion about why E20-compatible vehicles are necessary if older vehicles are also considered safe.
6. **Higher cost to consumers:** The government purchases ethanol at **attractive prices to encourage production**, and the financial burden of these incentives is ultimately reflected in the price paid by consumers.
7. **Concerns over resource use:** The editorial highlights that **grain diversion for ethanol production**, which accounts for nearly two-thirds of ethanol supplies, and **high water consumption in sugarcane cultivation** are important concerns that require attention.

Benefits of the Ethanol Blending Programme

1. **Reduction in crude oil imports:** Ethanol blending helps reduce India's dependence on imported petroleum by replacing a part of petrol consumption with domestically produced ethanol.
2. **Savings in foreign exchange:** The government estimates that **a 20% reduction in crude oil imports could save ₹30,000–40,000 crore annually**, although this estimate does not fully account for the loss in fuel efficiency.

3. **Improved energy security:** Greater use of domestically produced ethanol strengthens India's **energy security** by reducing dependence on volatile international energy markets.
4. **Support to farmers:** The government's procurement of ethanol at attractive prices provides **additional income opportunities for sugarcane, maize, and paddy farmers**, thereby supporting the agricultural sector.

Way Forward

1. **Provide clear policy guidance:** The Central Government should issue **clear and comprehensive guidelines** on the compatibility of existing vehicles with E20 fuel and specify whether any modifications are required.
2. **Ensure greater transparency by automobile companies:** Automobile manufacturers should clearly communicate the **E20 compatibility of different vehicle models** so that consumers can make informed purchasing decisions.
3. **Protect consumer choice:** Consumers should be allowed to make **informed choices** among different fuel options, including **EVs, CNG, ethanol-blended petrol, and conventional petrol wherever feasible**.
4. **Adopt a balanced long-term fuel strategy:** The government should develop a **comprehensive energy strategy** that balances import reduction, environmental sustainability, affordability, and technological advancements across multiple fuel options.
5. **Address sustainability concerns:** Future ethanol expansion should also address concerns related to **food grain diversion and excessive water use** to ensure that energy security does not come at the cost of food security and environmental sustainability.

Conclusion: The E20 programme is an important step towards improving India's energy security and reducing crude oil imports. However, its long-term success will depend on **greater policy clarity, consumer confidence, and a balanced transition that protects both economic and environmental interests**.

Question: The rapid adoption of E20 petrol has raised concerns regarding vehicle compatibility, fuel efficiency, and consumer interests. Discuss the issues and suggest a balanced way forward.

Source: [Business Line](#)

Strengthening Rural Credit for Inclusive Growth in India

UPSC Syllabus: Gs Paper 3- Indian economy and Infrastructure

Introduction

India's rural credit system provides timely and affordable finance for agriculture, allied sectors, rural enterprises and households. It supports income generation, asset creation and financial security, making it a key driver of inclusive rural development. Led by the **National Bank for Agriculture and Rural Development (NABARD)** and supported by a wide network of financial institutions, the system has evolved into a technology-enabled and inclusive credit ecosystem. **Around 51% of rural households now rely exclusively on formal credit sources**, reflecting its expanding reach.

Evolution of the Rural Credit System

1. Post-Independence Institutional Reforms: The Government and RBI initiated reforms to expand rural banking and strengthen institutional credit. These efforts gradually shifted rural finance from informal borrowing to a structured institutional system.

2. Expansion of Rural Banking (1955–1969): The National Agricultural Credit (Long-term Operations) Fund and the State Bank of India were established in 1955. In 1969, the nationalisation of 14 major commercial banks increased credit flow to priority sectors, especially small farmers.

3. Creation of NABARD (1982): NABARD integrated financing, development and supervision for agriculture and rural development. It also prepares district credit plans and supports financial inclusion by expanding access to formal finance.

4. Expansion of Farmer-Centric Credit: The SHG-Bank Linkage Programme (1992) connected rural households with formal banks, while the Kisan Credit Card (1998) improved access to timely and affordable agricultural credit.

5. Financial Inclusion Reforms: The launch of PM Jan Dhan Yojana (2014) expanded universal banking access, insurance, credit and Direct Benefit Transfers through the JAM Trinity. The MUDRA Scheme (2015) promoted collateral-free credit for rural micro and small enterprises.

6. Digital Transformation of Rural Credit: Since 2022, initiatives such as the Jan Samarth Portal and e-KCC have improved credit delivery through technology, making financial services more accessible and efficient.

Institutional Architecture of Rural Credit

1. NABARD as the Apex Institution: NABARD is the central institution for agriculture and rural development. It strengthens rural credit through refinance support, rural infrastructure financing, institutional development and supervision of Cooperative Banks and Regional Rural Banks.

2. Scheduled Commercial Banks (SCBs):

a) SCBs provide banking services through branches, Business Correspondents, digital platforms and Government programmes such as PMJDY and DBT.

b) Around 120 SCBs operate across the country, while rural branches increased by over 35%, from 41,464 in 2014 to 56,193 by July 2025.

3. Regional Rural Banks (RRBs): Established under the RRB Act, 1976, RRBs mainly serve small and marginal farmers, agricultural labourers, artisans and small entrepreneurs. At present, 28 RRBs operate through over 22,000 branches across 700 districts.

4. Co-operative Credit Institutions:

a) The cooperative banking system follows a multi-tier rural structure comprising **State Cooperative Banks (StCBs), District Central Cooperative Banks (DCCBs), Primary Agricultural Credit**

Societies (PACs), State Cooperative Agriculture and Rural Development Banks (SCARDBs), and Primary Cooperative Agriculture and Rural Development Banks (PCARDBs).

b) These institutions have expanded institutional credit and promoted banking habits in remote rural areas. The network includes **1,458 Urban Cooperative Banks, 34 State Cooperative Banks (StCBs), and 352 District Central Cooperative Banks (DCCBs).**

5. Small Finance Banks (SFBs):

a) Introduced after the Union Budget 2014–15, SFBs promote financial inclusion by providing savings and credit services to underserved groups.

b) They extend loans to small businesses, micro industries and small and marginal farmers through technology-driven and low-cost operations. At present, 11 SFBs are operational.

6. Integrated Rural Credit Network: Together, NABARD, SCBs, RRBs, Cooperative Banks and SFBs form a diversified institutional framework. This network expands formal credit access and supports inclusive rural development across the country.

Policy Framework Supporting Rural Credit

1. Priority Sector Lending (PSL):

a) PSL is an RBI-mandated framework that requires banks to provide credit to priority sectors that face difficulty in accessing formal finance.

b) Banks must allocate at least 18% of their Adjusted Net Bank Credit to agriculture, including sub-targets of 14% for non-corporate farmers and 10% for small and marginal farmers. Refinance support is also provided through dedicated rural credit funds.

2. Ground Level Credit (GLC):

a) The Government fixes annual agricultural credit targets for banks to ensure adequate finance for agriculture and allied sectors.

b) The GLC target increased from ₹8 lakh crore in FY2014–15 to ₹32.50 lakh crore in FY2025–26, including a ₹5 lakh crore sub-target for animal husbandry, dairying and fisheries.

c) NABARD supports these targets through refinance assistance.

3. SHG-Bank Linkage Programme and DAY-NRLM:

a) The Self-Help Group (SHG)-Bank Linkage Programme, launched by NABARD, connects rural SHGs with formal banks, improving access to affordable credit, especially for women.

b) Under the Deendayal Antyodaya Yojana–National Rural Livelihoods Mission (DAY-NRLM), 19.83 lakh SHGs have received cumulative loans of ₹13.28 lakh crore, while 50,548 Bank Sakhis have strengthened credit linkage and ensured timely loan repayment.

4. **Primary Agricultural Credit Societies (PACS):** PACS serve as the grassroots institutions of the cooperative credit system by directly providing loans and other agricultural services to rural borrowers.

5. **Modified Interest Subvention Scheme (MISS):**

a) MISS provides affordable short-term agricultural credit through the Kisan Credit Card. Farmers receive loans at 7% interest, which can reduce to 4% through prompt repayment incentives.

b) The loan limit under MISS increased from ₹3 lakh to ₹5 lakh, while collateral-free loan limits also increased to improve farmers' access to affordable finance.

6. **PM Dhan Dhanya Krishi Yojana (PM-DDKY):**

a) Approved in July 2025, PM-DDKY targets 100 low-performing agricultural districts through the convergence of 36 Central schemes across 11 Ministries.

b) It aims to improve agricultural credit, productivity, crop diversification, irrigation, sustainable farming and post-harvest infrastructure.

Financial Inclusion and Digital Transformation

1. **Kisan Credit Card (KCC):**

a) KCC provides timely and flexible credit for crop cultivation, post-harvest activities, marketing, household needs, farm maintenance and allied sectors.

b) The scheme covers owner cultivators, tenant farmers, sharecroppers, SHGs and JLGs, while its scope has also been extended to dairy, fisheries and animal husbandry.

2. **Digitalisation through e-KCC:** NABARD's e-KCC portal enables end-to-end online processing of crop loans for RRBs and Cooperative Banks. Farmers can submit applications digitally or through Common Service Centres, allowing loan sanctions within about two days.

3. **Financial Literacy Initiatives:** The Government, RBI, NABARD and banks conduct Centres for Financial Literacy (CFLs), Financial Literacy Camps (FLCs) and Financial Literacy Week (FLW) to improve awareness about formal credit and KCC benefits among rural households.

4. **Pradhan Mantri Jan Dhan Yojana (PMJDY):** PMJDY provides universal banking access along with credit, insurance and pension facilities.

5. **Jan Samarth Portal:**

a) Launched in 2022, the Jan Samarth Portal acts as a single digital platform linking Government-sponsored credit and subsidy schemes.

b) It simplifies loan applications, improves coordination among stakeholders and expands access to institutional finance through end-to-end digital services.

6. **Jan Dhan Darshak App:** The Jan Dhan Darshak App helps citizens locate nearby banking outlets, including branches, ATMs, Bank Mitras and Common Service Centres.

Challenges of Rural Credit System in India

1. **Limited Access to Formal Credit:** Many remote rural areas still have inadequate access to banks and financial institutions. This limits the availability of timely institutional credit for rural households.

2. **Dependence on Informal Lenders:** The shortage of formal banking services forces many borrowers to depend on informal lenders. These lenders often charge very high interest rates, increasing the financial burden on rural families.

3. **Collateral Constraints:** Formal financial institutions generally require collateral for loans. Many rural households cannot provide adequate security, reducing their access to institutional credit.

4. **Limited Credit Beyond Agriculture:** Institutional finance mainly focuses on agriculture, while credit for education, healthcare and small rural businesses remains inadequate. This limits broader rural economic development.

5. **Seasonal Repayment Risks:** Agricultural income depends on crop seasons, leading to irregular cash flows. Farmers often face difficulty in repaying loans during off-season periods, increasing the risk of defaults.

6. **Low Financial Literacy:** Limited awareness about banking services and loan conditions affects the proper use of institutional credit. This also increases the risk of poor financial decisions and debt traps.

7. **Governance and Infrastructure Issues:** Cases of corruption, loan diversion and poor rural infrastructure increase the cost and difficulty of credit delivery and monitoring.

Way Forward

Expand Digital Credit Delivery: Digital platforms such as e-KCC, the Jan Samarth Portal and Enterprise Resource Planning (ERP)-enabled Primary Agricultural Credit Societies (PACS) should continue to improve the speed, transparency and accessibility of rural credit services.

Strengthen Institutional Outreach: National Bank for Agriculture and Rural Development (NABARD), Scheduled Commercial Banks (SCBs), Regional Rural Banks (RRBs), Cooperative Banks, and Small Finance Banks (SFBs) should further expand formal banking services to improve access to affordable credit across rural areas.

Deepen Financial Inclusion: Continued expansion of the Pradhan Mantri Jan Dhan Yojana (PMJDY), Kisan Credit Card (KCC), the Self-Help Group (SHG)-Bank Linkage Programme, and financial literacy initiatives can bring more rural households into the formal financial system.

Modernise Cooperative Institutions: Ongoing digitisation of Primary Agricultural Credit Societies (PACS) and technology-enabled banking should be strengthened to improve efficiency, transparency and last-mile credit delivery.

Sustain Policy Support: Continued implementation of **Priority Sector Lending (PSL)**, **Ground Level Credit (GLC)**, the **Modified Interest Subvention Scheme (MISS)**, and the **Pradhan Mantri Dhan Dhanya Krishi Yojana (PM-DDKY)** can ensure adequate institutional credit for agriculture, allied sectors and rural enterprises.

Conclusion

India's rural credit system has evolved into a **diversified, institution-led and technology-enabled framework** that supports agriculture and rural livelihoods. **Institutional reforms, policy measures and digital financial inclusion** have expanded access to affordable formal credit. Continued strengthening of these initiatives will further promote **inclusive rural development, agricultural growth and long-term economic resilience**.

Question for practice:

Discuss the evolution, institutional framework, policy initiatives, and financial inclusion measures that have strengthened India's rural credit system for inclusive rural development.

Source: [PIB](#)

How Serious is Kudankulam Data Leak?

UPSC Syllabus: Gs Paper 3- Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security

Introduction

The **Kudankulam Nuclear Power Plant** data leak has raised concerns over the cybersecurity of India's critical infrastructure. Although **NPCIL** stated that the reactor and nuclear safety systems were not affected, the ransomware attack exposed data linked to a contractor working on the project. The incident has highlighted concerns over breach disclosure, third-party cybersecurity, incident response, and the protection of sensitive infrastructure-related information.

About the Kudankulam Data Leak

1. **Nature of the Attack:** The breach resulted from a **ransomware attack** carried out by the cybercriminal group **World Leaks**. The attackers targeted systems linked to **Reliance Infrastructure**, an engineering contractor for **Units 3 and 4**.
2. **Extent of the Leak:** Around **14.3 GB** of Kudankulam-related files were leaked. These files formed part of nearly **1.2 TB** of data published after the ransom demand was reportedly not met.

3. **Role of Third-Party Service Provider:** The compromised data was hosted on servers managed by **Yotta Data Services**. Yotta detected suspicious activity on **May 29** and isolated the affected server before the ransomware could spread.
4. **Timeline of Disclosure:** The leaked files reportedly appeared on **World Leaks** on **June 11**. NPCIL issued its official clarification only on **July 15**, after widespread media reports.
5. **Ransom Demand: World Leaks** claimed that the leaked data was published because the ransom demand was reportedly not paid.

Was the Nuclear Reactor Affected?

1. **Core Reactor Remained Safe:** NPCIL stated that the leaked information did not relate to the reactor's operational systems. Nuclear safety and nuclear security systems remained unaffected.
2. **Balance of Plant Data:** The leaked files related only to **Balance of Plant (BOP)** common service facilities located outside the nuclear island. They did not include sensitive reactor control information.
3. **No Ransomware Execution: Reliance Infrastructure** stated that there was **no ransomware execution, data loss or lateral movement** during the incident.
4. **Incident Limited to One Server:** Yotta said the incident remained confined to a single customer-managed server. Its shared cloud platforms, AI infrastructure, data centres and other customers were not affected.

Why Does the Data Leak Matter?

1. **Infrastructure Layouts Exposed:** The leaked files reportedly include **ventilation layouts** and floor plans of an alleged control room.
2. **Operational Documents Released:** The data also contains **meeting records, inspection reports and equipment review documents** related to the project.
3. **Supplier Information Exposed: Supplier and vendor lists** were reportedly included in the leaked files.
4. **Insurance Documents Leaked:** The leaked data includes paperwork related to a **\$112 million insurance policy** against terrorist attacks.
5. **Potential Intelligence Value:** Even if reactor systems remain secure, infrastructure-related information can support **intelligence preparation** activities.
6. **Authenticity Yet to be Confirmed:** The leaked documents have **not been independently authenticated**, making official verification important.
7. **Strategic Importance of Kudankulam:** The plant operates **two 1,000 MWe VVER reactors**, while four more units are planned, making it central to India's nuclear power expansion.

Cybersecurity Challenges Exposed by the Incident

1. **Opaque Breach Disclosure:** Organisations often delay admitting cyber breaches because they fear damage to reputation, contracts and public confidence.
2. **Regulatory Concerns:** Fear of regulatory scrutiny also discourages timely public disclosure of cyber incidents.
3. **Compliance-Driven Security:** Many organisations continue to treat cybersecurity mainly as a compliance requirement. This weakens incident response and delays assessment of affected data.
4. **Delay in Public Communication:** Information about the leak surfaced weeks before the official clarification. Such delays increase uncertainty during major cybersecurity incidents.
5. **Repeated Cybersecurity Concerns:** Malware was detected on Kudankulam's administrative network in **2019**, although operational systems remained unaffected. The latest incident again highlights concerns over cyber risks around critical infrastructure.

India's Wider Cybersecurity Context

1. **Frequent Cyberattacks:** India is described as the **third-most breached country**. Earlier cyberattacks have affected **AIIMS Delhi, airlines and State government portals**.
2. **Growing Risk to Critical Infrastructure:** As strategic projects become more digitally connected, contractors and service providers also become attractive targets for cybercriminals.
3. **Third-Party Vulnerability:** The attack did not directly target **NPCIL** but affected a contractor and its data hosting service. This shows that supply chain partners can become weak points.
4. **Need for Better Cyber Readiness:** Cybersecurity must cover every organisation connected to critical infrastructure, not only the primary operator.

Measures to Strengthen Critical Infrastructure Cybersecurity

A. Immediate Actions

1. **Verify the Leaked Files:** **CERT-In** and **NPCIL** should clarify the authenticity and nature of the leaked documents.
2. **Confirm Data Exfiltration:** Authorities should establish whether any information was copied before the attack was detected.
3. **Check Account Exposure:** The investigation should determine whether **credentials, supplier accounts or vendor accounts** were compromised.
4. **Complete the Investigation:** Findings shared by **Reliance Infrastructure, Yotta**, and the **CERT-In** investigation should establish the full scope of the incident.
5. **Ensure Timely Communication:** Authorities should provide clear and timely public updates, even if complete transparency is not possible.

B. Long-Term Reforms

1. **Strengthen Cyber Hygiene:** Organisations should make cybersecurity a regular operational practice instead of treating it only as a compliance requirement.
2. **Improve Incident Response:** Organisations should build stronger capabilities to quickly detect, assess and contain cyberattacks.
3. **Strengthen Supply Chain Security:** Contractors, data centres and other third-party service providers should follow robust cybersecurity practices because they handle sensitive project information.
4. **Promote Better Breach Disclosure:** Organisations should adopt more transparent and timely reporting practices to improve public trust and cyber resilience.

Conclusion

The **Kudankulam** data leak did not compromise reactor operations or nuclear safety systems, but it exposed weaknesses in cybersecurity, third-party risk management and breach disclosure. Strengthening **cyber hygiene, incident response, supply chain security and timely communication**, along with completing the ongoing investigation, is essential to protect critical infrastructure and maintain public confidence.

Question for practice:

Examine the cybersecurity concerns highlighted by the Kudankulam Nuclear Power Plant data leak and discuss the measures needed to strengthen the security of India's critical infrastructure.

Source: [The Hindu](#)

Promise of chips: On the India Semiconductor Mission phase II

Source: The post “**Promise of chips: On the India Semiconductor Mission phase II**” has been created based on “**Promise of chips: On the India Semiconductor Mission phase II**” published in “**The Hindu**” on 18th July 2026.

UPSC Syllabus: GS-3 -Economy

Context: India's **Semiconductor Mission** has entered its **second phase** after the success of the first phase. It aims to **build a strong domestic semiconductor manufacturing ecosystem** and position India as a strategic destination in the global electronics value chain.

Significance of India's Semiconductor Mission

1. **Expanded Scope:** The second phase goes beyond manufacturing by supporting individual semiconductor projects through equity participation.
2. **Domestic Manufacturing:** It seeks to strengthen India's capabilities in semiconductor production and component manufacturing.
3. **Strategic Positioning:** The mission aims to establish India as a key player in the global electronics value chain.
4. **Long-term Capacity Building:** It focuses on creating human capital and intellectual property instead of expecting immediate commercial outcomes.

5. **Employment Generation:** Investments in semiconductor manufacturing will boost the electronics industry, which is a major source of employment.
6. **Public Investment:** Government support is essential because semiconductor manufacturing requires large capital investment and has a long gestation period.

Challenges

1. **Delayed Production:** Semiconductor facilities approved under the first phase are yet to commence commercial production.
2. **Technology Gap:** India currently lacks advanced technologies such as extreme ultraviolet (EUV) lithography needed for cutting-edge chip manufacturing.
3. **Global Competition:** Competing with countries that possess mature semiconductor ecosystems remains a major challenge.
4. **Ecosystem Development:** Building a complete semiconductor ecosystem requires sustained investment, technology acquisition, and skilled manpower.

Way Forward

1. **Technology Investment:** Continue investing in advanced semiconductor technologies despite current technological limitations.
2. **Strategic Capability:** Build capabilities that attract global investment, talent, and cutting-edge technology.
3. **Talent Utilisation:** Leverage India's globally recognized pool of engineers and chip designers.
4. **Talent Retention:** Create high-value research, design, and manufacturing opportunities to prevent brain drain.
5. **Collaborative Ecosystem:** Strengthen partnerships among government, industry, and academia to promote innovation.
6. **Supply Chain Resilience:** Develop resilient domestic supply chains while remaining integrated with global semiconductor value chains.

Conclusion: India's Semiconductor Mission represents a strategic long-term investment rather than a short-term industrial initiative. By strengthening domestic capabilities while integrating with global supply chains, India can emerge as a leading semiconductor and electronics manufacturing hub.

Question: Chipmaking is more than a seasonal obsession in India now." Discuss the significance of India's Semiconductor Mission, its challenges, and the way forward.

Source: [The Hindu](#)

India now has the funds, the talent and the opening for a research leap

Source: The post "India now has the funds, the talent and the opening for a research leap" has been created based on "India now has the funds, the talent and the opening for a research leap" published in "Indian Express" on 18th July 2026.

UPSC Syllabus: GS-3 Economy

Context: Recent disruptions such as the Strait of Hormuz crisis highlighted the risks of dependence on external sources for critical technologies and resources. Technological resilience and long-term self-reliance can be achieved only by building strong domestic research and innovation capabilities.

Need for Strengthening R&D

1. **Strategic Autonomy:** Critical technologies have become instruments of geopolitics, making technological self-reliance essential for national security.
2. **Supply Chain Resilience:** Domestic R&D reduces vulnerability to export restrictions, technology denial, and global supply chain disruptions.
3. **Innovation-led Growth:** Strong research capabilities enable India to transition from a consumer of intellectual property to a producer of advanced technologies.
4. **Global Competitiveness:** Indigenous innovation enhances India's position in global value chains and strategic sectors.

Current Status of India's R&D Ecosystem

1. **Low R&D Spending:** India spends only **0.64% of GDP** on R&D, which is significantly below the global average.
2. **Limited Private Participation:** Barely two-fifths of India's R&D expenditure is financed by private industry, compared to over three-fourths in countries like China, South Korea, and the USA.
3. **Untapped Potential:** India possesses a large talent pool and strong digital infrastructure but requires greater investment in research.

Government Initiatives

1. **Anusandhan National Research Foundation (ANRF):** Established as a statutory body to promote collaboration among academia, industry, start-ups, philanthropy, and the diaspora.
2. **Research, Development and Innovation (RDI) Fund:** Provides **₹1 lakh crore** over six years to support private-sector research.
3. **ANRF Core:** Allocates **₹50,000 crore** over five years for fundamental scientific research.
4. **Catalytic Funding:** Public investment aims to leverage significantly higher private investment for commercialization and scaling of innovations.
5. **Ecosystem Development:** Aligns funding, procurement, and regulatory support to strengthen the innovation ecosystem.

Role of Industry

1. **Private Investment:** Mobilise greater corporate investment in research beyond public funding support.
2. **Strategic Research:** Prioritise technologies critical for national security and economic competitiveness.
3. **Institutional Capacity:** Establish dedicated R&D centres, corporate venture funds, and long-term innovation strategies.
4. **Collaborative Innovation:** Partner with academia, start-ups, Global Capability Centres (GCCs), and ANRF for joint research projects.
5. **Talent Retention:** Create world-class research opportunities to retain highly skilled scientific talent in India.

6. **Example of Pharmaceutical Success:** After adopting the WTO intellectual property regime, Indian pharmaceutical companies invested in process innovation and regulatory excellence, transforming India into the "pharmacy of the world." This demonstrates the benefits of sustained domestic capability building.

Way Forward

1. **Increase R&D Expenditure:** Raise national R&D spending with greater private-sector participation.
2. **Strengthen Academia-Industry Linkages:** Promote collaborative research and commercialization of innovations.
3. **Support Deep-tech Ecosystem:** Encourage start-ups, venture capital, and technology-intensive enterprises.
4. **Leverage India's Advantages:** Utilise India's demographic dividend, digital public infrastructure, and favourable global supply chain diversification.
5. **Adopt Long-term Vision:** Focus on sustained capability building instead of short-term commercial gains.

Conclusion: The government can create an enabling ecosystem, but industry must invest in long-term research and innovation. By strengthening domestic R&D capabilities, India can achieve technological self-reliance, improve strategic resilience, and emerge as a global innovation leader.

Question: Technological self-reliance requires strong domestic research and development (R&D) capabilities. Discuss the role of research, industry, and government in making India a global innovation hub.

Source: [Indian Express](#)

What is BIMSTEC, and why is it in focus ahead of its 30th anniversary?

UPSC Syllabus: Gs Paper 3- Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

Introduction

What is BIMSTEC, and why is it in focus ahead of its 30th anniversary?

Introduction

The **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)** is emerging as an important regional platform as it approaches its **30th anniversary in 2027**. The organisation is expanding cooperation to address **terrorism, organised crime, cyber threats, maritime security and disaster management**. Its growing focus on regional security was highlighted at the **Fifth BIMSTEC National Security Chiefs' Meeting**, where member countries discussed measures to strengthen cooperation against both traditional and emerging security challenges.

What is BIMSTEC?

1. **Regional Organisation:** BIMSTEC stands for the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. It brings together countries connected by the Bay of Bengal and acts as a bridge between South Asia and Southeast Asia.
2. **Member Countries:** The organisation has seven members—Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand.
3. **Evolution of the Grouping:** The organisation began as BIST-EC in 1997 with Bangladesh, India, Sri Lanka and Thailand. It became BIMST-EC after Myanmar joined and was renamed BIMSTEC in 2004 after Nepal and Bhutan became members.
4. **Renewed Momentum:** The grouping remained largely inactive for many years. It gained fresh momentum after 2016, when India increased its engagement following the Uri terrorist attack and the boycott of the SAARC Summit in Islamabad.

Why was BIMSTEC Established?

1. **Bridge Between Two Regions:** BIMSTEC provides a common platform where countries of South Asia and Southeast Asia can work together on shared regional issues.
2. **Alternative to SAARC:** With SAARC remaining largely inactive, BIMSTEC has emerged as an important platform for regional cooperation among neighbouring countries.
3. **Supporting Landlocked Members:** Nepal and Bhutan can benefit from better access to the Bay of Bengal through stronger regional connectivity with other BIMSTEC members.
4. **Shared Regional Interests:** The grouping allows members to cooperate in areas such as connectivity, security, economic development and disaster management, which affect all countries around the Bay of Bengal.

Why is BIMSTEC Strategically Important?

1. **Addressing Common Security Threats:** BIMSTEC provides a platform to tackle terrorism, transnational organised crime, cyber security and maritime security through regional cooperation.
2. **Regional Significance:** BIMSTEC connects South and Southeast Asia and represents about 1.7 billion people, nearly 22% of the world's population, with a combined GDP of about \$5 trillion.
3. **Maritime Importance:** The Bay of Bengal is an important route between the Indian and Pacific Oceans. Cooperation through BIMSTEC can improve maritime safety, freedom of navigation and better use of the Bay's natural resources.
4. **Economic Potential:** BIMSTEC represents around 1.7 billion people, nearly 22% of the world's population, with a combined GDP of about \$5 trillion, making it an economically significant regional grouping..

5. **Managing Future Risks:** The organisation provides a platform for members to respond together to challenges created by climate change, pandemics and global conflicts, which affect regional stability and economic resilience.
6. **Supporting India's Northeast:** Better connectivity with Bangladesh and Myanmar can improve development in India's Northeast. Projects such as the India–Myanmar–Thailand Trilateral Highway and the Kolkata–Siliguri–Guwahati–Imphal link support this objective.
7. **Closer Engagement with ASEAN:** Stronger cooperation with Thailand and Myanmar can improve India's engagement with ASEAN. The BIMSTEC Connectivity Master Plan also complements the ASEAN Master Plan on Connectivity 2025.
8. **Strategic Balance in the Region:** China's Belt and Road Initiative (BRI) has expanded infrastructure investment across most BIMSTEC countries except India and Bhutan. BIMSTEC gives India an alternative platform to promote regional connectivity and present the Bay of Bengal as an open and peaceful region.

Why is BIMSTEC in Focus Ahead of its 30th Anniversary?

1. **National Security Chiefs' Meeting:** India hosted the Fifth BIMSTEC National Security Chiefs' Meeting in New Delhi under the leadership of National Security Adviser Ajit Doval. Senior security officials from all seven member countries participated.
2. **New Maritime Cooperation Framework:** Member countries adopted common guidelines for Humanitarian Assistance and Disaster Relief (HADR) operations and guiding principles for interactions between maritime law enforcement agencies at sea.
3. **Improving Disaster Response:** The new HADR guidelines aim to make disaster response faster, better coordinated and more effective during natural disasters and emergencies.
4. **Safer Maritime Operations:** The guiding principles for maritime law enforcement agencies will improve operational coordination and make interactions at sea more predictable and safer.
5. **Expanding Security Agenda:** Members agreed to deepen cooperation against terrorism, organised crime, cyber threats, maritime security and energy security. They also discussed regional connectivity, disaster response and other emerging security challenges.
6. **Need for Regional Cooperation:** The meeting recognised that geopolitical conflicts, supply-chain disruptions, technological threats and economic stress require closer cooperation among member countries.
7. **Progress in Institutional Capacity:** BIMSTEC reviewed progress in counter-terrorism, disaster management and institutional capacity building, showing the organisation's expanding security agenda.

8. **India's Regional Vision:** India described BIMSTEC as an important pillar of its Neighbourhood First Policy, Act East Policy and MAHASAGAR vision, placing regional security, connectivity, economic resilience and capacity building at the centre of future cooperation.

Challenges Before BIMSTEC

1. **Regional Political Tensions:** Disputes between Bangladesh and Myanmar and tensions between India and Bangladesh after Sheikh Hasina's removal have affected regional cooperation.
2. **Myanmar Crisis:** The continuing civil war in Myanmar has reduced its role as a land bridge between South Asia and Southeast Asia.
3. **Pending Regional Agreements:** Important agreements such as the Free Trade Agreement, Coastal Shipping Agreement and Motor Vehicles Agreement have remained unresolved despite repeated negotiations.
4. **Slow Institutional Progress:** BIMSTEC has often progressed slowly. It even took around 17 years to establish a permanent secretariat.
5. **Limited Multilateral Focus:** Member countries have generally given greater importance to bilateral relations, slowing the growth of stronger regional cooperation.
6. **Concerns Over India's Role:** Some members have raised concerns that India plays a dominant role while the interests of smaller countries do not always receive equal attention.
7. **Competing Regional Priorities:** Myanmar and Thailand continue to focus strongly on ASEAN, reducing the attention given to BIMSTEC.
8. **Resource Constraints:** Limited financial and human resources continue to affect the organisation's functioning, even though India contributes about 32% of the annual budget.

Way Forward

1. **Strengthen Economic Integration:** Member countries should increase intra-BIMSTEC trade, build regional supply chains and improve economic cooperation to reduce external vulnerabilities.
2. **Improve Disaster Preparedness:** Members should strengthen disaster cooperation, and India should encourage them to join the Coalition for Disaster Resilient Infrastructure (CDRI).
3. **Enhance Security Cooperation:** Countries should complete the remaining legal framework that allows law enforcement agencies to cooperate more effectively against terrorism, organised crime, violent extremism and cyber-attacks.
4. **Build Stronger Regional Institutions:** BIMSTEC should develop stronger collective institutional capacity while protecting the interests of all member countries through balanced regional cooperation.

5. **Promote Equal Partnership:** India should continue working as an equal and trusted partner so that all member countries feel greater ownership of the organisation.
6. **Accelerate Connectivity Projects:** Faster implementation of pending connectivity projects can improve trade, mobility and regional integration across the Bay of Bengal.

Conclusion

As BIMSTEC approaches its **30th anniversary**, it is becoming a stronger platform for regional cooperation in **security, connectivity and disaster management**. Recent initiatives show the members' commitment to deeper collaboration. Addressing institutional and political challenges while strengthening coordination can help BIMSTEC become a more effective and result-oriented organisation for the **Bay of Bengal region**.

Question for practice:

Discuss the significance of BIMSTEC and explain why it is in focus ahead of its 30th anniversary.

Source: [Indian Express](#)

Perils of Unchecked Cybercrime

UPSC Syllabus: Gs Paper 3- Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention.

Introduction

India's digital transformation has strengthened governance, financial inclusion and public services through platforms like **UPI** and **Aadhaar**. However, the rapid rise of cybercrime has emerged as a serious challenge to this progress. In **2025**, India reported **28.15 lakh cybercrime complaints** and losses of **₹22,495 crore**, with complaints rising **24% over 2024**. Cybercrime has now become a structural threat to economic growth, public trust and the vision of **Viksit Bharat 2047**.

Why Cybercrime is Emerging as a National Security and Economic Concern

1. **Rapid rise in cybercrime:** Cybercrime has grown at an alarming pace. India reported **28.15 lakh cases in 2025**, while financial losses crossed **₹22,495 crore**, showing the growing scale of the crisis.
2. **Threat to Digital India:** India's digital platforms have improved service delivery and financial inclusion. However, the same digital ecosystem has become a major target for organised cybercriminals.
3. **Beyond a law-and-order issue:** Cybercrime is no longer limited to individual fraud cases. It has become a structural challenge that directly affects economic growth and national development.
4. **Challenge to Viksit Bharat:** A secure digital environment is essential for achieving **Viksit Bharat 2047**. Large-scale cyber fraud weakens confidence in digital governance and digital transactions.

Major Dimensions of the Cybercrime Ecosystem

1. **Transnational scam networks:** Organised scam compounds operate across the **Golden Triangle** and the **Cambodia-Thailand border**. Many of these networks function with strong cross-border support and organised supply chains.
2. **Human trafficking for cyber fraud:** Young Indians are trapped through fake overseas job offers. They are forced to run investment scams and **Digital Arrest** frauds against victims across different countries.
3. **Digital Arrest frauds:** Fraudsters impersonate customs, narcotics or police officials and falsely accuse victims of serious crimes. Victims are kept under fake video surveillance and pressured into transferring their savings.
4. **Emerging technology-driven threats:** **Generative AI** and **deepfake audio and video** are making impersonation much easier. They are increasingly used to deceive citizens by pretending to be officials, family members or executives.

Consequences for Economy, Society and Governance

1. **Massive financial losses:** India's cybercrime losses increased nearly **41 times**, from **₹551 crore in 2021** to over **₹22,800 crore in 2024**. This reflects the rapidly expanding financial impact of cybercrime.
2. **Loss of household savings:** Fraudulent transactions drain personal savings that could otherwise support household spending and economic consumption. This weakens overall economic activity.
3. **Disruption to business productivity:** Cyberattacks interrupt normal business operations and essential services. They also increase operational risks for both public and private institutions.
4. **Impact on investment climate:** Frequent cyber incidents raise concerns about the security of India's digital economy. This increases the cost of attracting domestic and foreign investment.
5. **Psychological and emotional harm:** Cyber fraud causes serious emotional distress along with financial loss. **NITI Aayog** has recognised that the psychological impact often exceeds the monetary damage suffered by victims.
6. **Declining trust in digital governance:** Citizens expect digital payments, hospitals and Aadhaar-linked services to remain secure. Repeated cyber incidents reduce confidence in digital governance and online public services.
7. **Need for cyber resilience as an economic strength:** Countries like **Singapore** have made cyber resilience part of their economic strength, while **Israel** has developed it into a strategic industry. India also needs strong cyber resilience to support its digital economy and future growth.

Cyber Threats to Critical Infrastructure and National Security

1. **Attack on healthcare infrastructure:** The **2022 AIIMS Delhi ransomware attack** disrupted outpatient, inpatient, laboratory and billing services for nearly **two weeks**. Around **1.3 terabytes of data** were encrypted, and records of **3-4 crore patients** were feared to be compromised.

2. **Concerns over digital public platforms:** Allegations of a **2023 CoWIN data exposure** raised questions about the security of important digital public platforms. Such incidents highlight the need to strengthen data protection across government systems.
3. **Cross-border links in major attacks:** Investigations into the AIIMS attack traced digital trails to **Hong Kong and China**. The case required coordinated action by **CERT-In, Delhi Police, MHA and NIA**, showing the complexity of modern cyber investigations.
4. **Foreign-backed cyber fraud networks:** In **January 2026**, Delhi Police dismantled a **Taiwan-linked syndicate operated from Pakistan** that cheated citizens of nearly **₹100 crore** by posing as Anti-Terrorist Squad officers. This shows that organised cybercrime often operates across multiple countries.
5. **Malicious applications affecting public safety:** Some **Chinese battery management apps** disrupted e-rickshaw operations in Delhi, creating traffic problems and threatening public safety. The government later directed that these apps be removed from app stores.

Institutional Response and Existing Gaps

1. **Financial fraud prevention efforts:** The **Indian Cyber Crime Coordination Centre (I4C)** has helped freeze over **₹8,031 crore** in fraudulent transactions. This has reduced losses in many reported cyber fraud cases.
2. **Citizen reporting mechanism:** The **Citizen Financial Cyber Fraud Reporting System** has saved more than **₹7,130 crore** across **23 lakh complaints**. Quick reporting has improved the chances of stopping fraudulent transactions.
3. **Need for better institutional coordination:** Cybersecurity requires real-time coordination among **I4C, CERT-In, RBI, intelligence agencies and state police**. A fragmented response cannot effectively tackle organised cybercrime.
4. **Shortage of cyber-forensic professionals:** India faces a shortage of trained cyber investigators and forensic experts. Expanding skilled manpower is necessary to investigate increasingly complex cyber offences.
5. **Low cyber awareness among users:** Digital access has expanded rapidly, but cyber literacy has not grown at the same pace. New internet users, especially in **Tier-2 and Tier-3 towns**, remain highly vulnerable to online fraud.

Measures Needed to Build Cyber Resilience

1. **Whole-of-government cybersecurity:** Cybersecurity should become a national priority with real-time coordination among **I4C, CERT-In, RBI, intelligence agencies and state police**.
2. **Cyber hygiene as a public movement:** Cyber awareness should become part of school education and corporate training. Preventive awareness can reduce the success of online fraud.

3. **Use AI for cyber defence:** Artificial Intelligence should identify mule accounts and suspicious behaviour in real time. This can shift the response from reactive policing to predictive threat detection.
4. **Strengthen international cooperation:** India should pursue bilateral and multilateral cooperation through extradition frameworks, mutual legal assistance, Interpol coordination and diplomatic pressure to dismantle scam networks in South-East Asia.

Conclusion

Unchecked cybercrime threatens India's economy, governance, national security and public trust. A secure digital ecosystem is essential for **Digital India** and **Viksit Bharat 2047**. Strengthening institutions, improving cyber awareness, expanding international cooperation and protecting critical digital infrastructure are necessary to build trust and ensure safe, resilient and sustainable digital growth.

Question for practice:

Examine the growing threat of unchecked cybercrime in India and discuss its implications for the economy, national security, governance, and the measures needed to build cyber resilience.

Source: [Businessline](#)

Vikram-1: Charting India's Cosmic Future

Source: The post "Vikram-1: Charting India's Cosmic Future" has been created based on "Vikram-1: Charting India's Cosmic Future" published in "PIB" on 20th July 2026.

UPSC Syllabus: GS-3-Science and Technology

Context: India's space sector has entered a new phase with the **Indian Space Policy, 2023**, which has opened the entire space value chain to private participation. The upcoming **Vikram-1**, India's first privately developed orbital launch vehicle, reflects the success of these reforms.

Key Reforms in India's Space Sector

1. The **Indian Space Policy, 2023** allows Non-Government Entities (NGEs) to participate across the entire space value chain and promotes innovation, private investment, and international collaboration.
2. **IN-SPACe** has been established as a single-window regulator to authorise private space activities, provide access to ISRO facilities, and ensure transparent and predictable regulatory approvals.
3. The Government has introduced **financial support mechanisms**, including the IN-SPACe Seed Fund Scheme, the ₹1,000 crore Venture Capital Fund, and the ₹500 crore Technology Adoption Fund, to encourage innovation and commercialisation of indigenous technologies.
4. **NewSpace India Limited (NSIL)** has been designated as ISRO's commercial arm to undertake commercial launches, transfer technologies to industry, and promote private participation in satellite and launch vehicle production.
5. The **liberalised FDI policy** permits higher levels of automatic foreign investment in satellite manufacturing, launch vehicles, and satellite components, thereby attracting global investment and technology.

Significance of the Reforms

1. The reforms have significantly increased **private participation**, with the number of Indian space startups growing from one in 2014 to more than 400 in 2026.
2. The reforms have strengthened **indigenous technological capabilities** by encouraging the development of advanced launch vehicles, satellites, and propulsion technologies.
3. The reforms are expected to expand India's **space economy** from nearly USD 8.4 billion at present to USD 40–45 billion by 2030 and USD 100 billion by 2040.
4. The reforms have enhanced India's **commercial launch capabilities**, enabling the country to emerge as a trusted provider of cost-effective launch services.
5. The reforms have promoted **public-private partnerships** in sectors such as agriculture, disaster management, climate monitoring, Earth observation, and satellite-based services.
6. The reforms have generated **employment, investment, and high-technology manufacturing**, thereby strengthening India's knowledge economy.
7. The reforms have improved **strategic self-reliance** by reducing dependence on foreign technologies and strengthening India's position in the global space sector.

Challenges

1. The space sector continues to face **high capital requirements** and long gestation periods, which discourage private investment.
2. Private companies still have **limited access to advanced testing, manufacturing, and launch infrastructure** compared to established global competitors.
3. The regulatory framework requires **further simplification** to ensure faster approvals and ease of doing business.
4. Indian companies face **intense global competition** from well-established international private space enterprises.
5. There is a need to develop a **larger pool of skilled manpower** in advanced space technologies, manufacturing, and research.

Way Forward

1. The Government should strengthen **research and innovation** by promoting collaboration among ISRO, industry, startups, and academic institutions.
2. Greater **financial support and private investment** should be encouraged through expanded venture funding and easier access to credit.
3. India should develop **world-class testing, manufacturing, and launch infrastructure** to support private space enterprises.
4. The regulatory framework should be **further streamlined** to provide faster approvals and long-term policy certainty.
5. India should expand **international partnerships** while simultaneously promoting indigenous technology development under the vision of **Atmanirbhar Bharat**.

Conclusion: India's space sector reforms have created a strong foundation for innovation, commercialisation, and private participation. With sustained policy support, stronger public-private partnerships, and successful missions such as **Vikram-1**, India is well positioned to emerge as a leading global space power and a key contributor to the future space economy.

Question: Recent space sector reforms have transformed India from an ISRO-led model to a vibrant public-private space ecosystem. Discuss the key reforms and their significance in making India a global space power.

Source: [PIB](#)

Balancing energy security, environmental concerns

Source: The post "Balancing energy security, environmental concerns" has been created based on "Balancing energy security, environmental concerns" published in "Business Line" on 20th July 2026.

UPSC Syllabus: GS-3-Science and Technology

Context: Coal gasification is the process of converting coal into **synthesis gas (syngas)** using controlled oxygen and steam at high temperature and pressure. It enables the production of ammonia, urea, methanol, hydrogen, synthetic natural gas, and liquid fuels while reducing dependence on imported feedstocks.

Significance of Coal Gasification

1. Coal gasification can **strengthen India's energy security** by reducing dependence on imported natural gas, ammonia, methanol, and urea.
2. It enables **productive utilisation of India's vast coal reserves**, which include around **400 billion tonnes of coal and 47 billion tonnes of lignite**.
3. The recently approved **₹375 billion incentive scheme** aims to gasify **75 million tonnes of coal by 2030**, thereby promoting domestic production of industrial feedstocks.
4. The scheme is expected to **attract investments worth ₹2.5-3 trillion** and generate nearly **50,000 direct and indirect jobs**, boosting industrial growth.
5. Coal gasification supports the development of a **domestic coal-to-chemicals ecosystem**, thereby improving supply chain resilience during global geopolitical disruptions.
6. It also provides an **alternative use for coal** as India's electricity sector gradually shifts towards renewable energy.

Environmental Concerns

1. Hydrogen production through coal gasification **generates nearly twice the carbon dioxide emissions** compared to natural gas-based production.
2. Replacing imported feedstocks through the coal-to-syngas route could **increase annual CO₂ emissions from about 47-52 million tonnes to 106-111 million tonnes**.
3. Higher greenhouse gas emissions could make it **more difficult for India to achieve its climate commitments and net-zero goals**.
4. Coal gasification also remains **dependent on carbon-intensive fossil fuels**, thereby slowing the transition towards cleaner energy sources.
5. India's **Carbon Capture, Utilisation and Storage (CCUS)** ecosystem remains underdeveloped, with only a few operational projects, limiting the ability to manage additional emissions.

Challenges

1. The technology requires **high capital investment** and involves long project gestation periods.

2. Large-scale deployment depends on the **rapid development of CCUS infrastructure**, which is currently inadequate.
3. Coal gasification projects require **continuous policy support, financing, and technological innovation** to remain economically viable.
4. Environmental concerns and stricter climate regulations may affect the **long-term sustainability and public acceptance** of such projects.

Way Forward

1. India should **integrate coal gasification projects with Carbon Capture, Utilisation and Storage (CCUS)** to minimise carbon emissions.
2. The Government should **promote research and development** in cleaner coal technologies and low-carbon hydrogen production.
3. Public and private investment should be encouraged to **expand CCUS infrastructure and improve technological efficiency**.
4. Coal gasification should complement, rather than replace, **renewable energy and green hydrogen initiatives** to ensure balanced energy transition.
5. A balanced policy approach should simultaneously promote **energy security, industrial growth, and environmental sustainability**.

Conclusion: Coal gasification offers India a strategic opportunity to reduce import dependence, improve energy security, and promote industrial development. However, its long-term success will depend on effectively managing its carbon footprint through cleaner technologies, robust CCUS infrastructure, and a balanced transition towards a low-carbon economy.

Question: Coal gasification can strengthen India's energy security but raises significant environmental concerns." Discuss.

Source: [Business Line](#)

The Stark Reality of the Missing Jobs for India's Gen Z

UPSC Syllabus: Gs Paper 3- Indian economy and Infrastructure

Introduction

India has one of the world's largest youth populations, making its demographic dividend a major opportunity. However, this advantage depends on whether young people can successfully move from education into productive, secure and meaningful employment. High unemployment, poor job quality, weak labour market transition and changing workplace expectations show that many Gen Z workers are struggling to realise their potential. Unless these challenges are addressed together, India's demographic dividend may remain an unrealised promise.

Demographic Dividend and Employment Challenges

1. **Large youth population, unrealised dividend:** India has **371 million youth (UN, 2025)**. However, the demographic dividend can succeed only when young people move into productive and secure employment.
2. **Gen Z forms a major workforce:** According to **PLFS 2023-24**, India has **29.94 crore working-age Gen Z**, making their successful employment essential for India's future growth.
3. **Delayed labour market transition:** A large share of Gen Z remains in education, with **41.7% of young males** and **38.4% of young females** still studying. This delays their entry into the labour market.
4. **Low labour force participation:** The **Labour Force Participation Rate (LFPR) among Gen Z is 41.7%**, compared with **75% among Millennials**. Rural Gen Z records a higher LFPR (**44.1%**) than urban Gen Z (**37.2%**).
5. **Persistent gender gap:** Female participation remains significantly lower than male participation. The **LFPR among rural Gen Z females is 28%** and **21.1% among urban females**, compared with **59.3%** and **51.3%** respectively for young men.
6. **High youth unemployment:** The **overall unemployment rate among Gen Z is 11.9%**, compared with **2% among Millennials**. It rises to **17.1% among urban Gen Z**, while **urban Gen Z women face the highest unemployment at 22.6%**.
7. **Graduate unemployment signals a jobs crisis:** The unemployment rate reaches **29% among graduate Gen Z males** and **36.9% among graduate Gen Z females**, showing that higher education is no longer guaranteeing suitable employment.
8. **Poor quality of employment:** Many young workers enter unpaid family work, casual employment or insecure jobs. Only **20.1% of Gen Z workers** receive social security, **14.1%** have formal job contracts, and only **17.3%** have contractual employment.
9. **Women's unpaid work remains high:** About **35% of Gen Z women** remain outside the labour force because of domestic duties. Childcare, safety concerns, mobility constraints and social norms continue to limit their participation.
10. **Changing workplace expectations:** Gen Z increasingly values learning opportunities, meaningful work and work-life balance. According to the **Naukri Gen Z Work Code Report 2026**, **57%** define career growth through learning new skills, while **34%** cite poor work-life balance and **31%** limited career growth as major stress factors.

Structural Causes Behind the Crisis

1. **Weak school-to-work transition:** The biggest challenge is not education but the weak transition from classrooms to productive employment..
2. **Job creation has not matched the growing workforce:** India is producing educated youth faster than it is creating quality employment.

3. **Skill mismatch and technological change:** The education system is not fully aligned with labour market needs. At the same time, automation and the growing use of **Artificial Intelligence (AI)** are changing the nature of available jobs.
4. **Structural barriers limit women's employment:** Childcare responsibilities, safety concerns, mobility constraints and social norms continue to keep many women outside paid employment or push them into unpaid work.
5. **Workplaces are not meeting Gen Z expectations:** Many organisations are designed around older career models. However, Gen Z gives greater importance to continuous learning, meaningful work and work-life balance than to promotions alone.
6. **Digital and financial pressures increase workplace stress:** Despite being the most digitally connected generation, Gen Z reports high levels of digital loneliness. Mental health disorders are more common in urban areas, while algorithmic burnout, financial insecurity and unstable incomes have become major workplace concerns.
7. **Limited managerial support weakens employee well-being:** Many managers are promoted for technical skills but are not trained to recognise or respond to mental health concerns. This reduces psychological safety and employee engagement.

Implications for India's Economy and Society

1. **Demographic dividend may remain unrealised:** A large youth population cannot become an economic advantage unless young people find productive and secure employment.
2. **Loss of educated human capital:** Rising graduate unemployment means the economy is unable to fully utilise its educated workforce. This reduces the returns from investment in education.
3. **Growing frustration among young people:** When education fails to improve employment prospects, frustration increases and confidence in future opportunities weakens. This also puts financial pressure on families investing in higher education.
4. **Expansion of insecure employment:** The growth of informal and poorly protected jobs leaves many young workers without contracts or social security. This increases employment insecurity and weakens long-term workforce stability.
5. **Changing workplace behaviour:** Many Gen Z employees now avoid work beyond their assigned responsibilities (**Quiet Quitting**), continue in unsatisfying jobs while showing frustration (**Resenteeism**), prepare alternative career options while remaining employed (**Career Cushioning**), or consciously reduce their work engagement to protect their mental health (**Deliberate Disengagement**). These behaviours reflect changing workplace expectations rather than a lack of ambition.
6. **Lower organisational performance:** Organisations that overlook employee well-being face lower engagement and higher attrition. At the same time, many continue to measure participation in wellness programmes instead of their actual outcomes.

7. **Rising labour dissatisfaction:** Poor wages, insecure employment and weak labour protection can increase worker frustration, as reflected in recent labour protests demanding better wages and working conditions.

Way Forward

1. **Expand labour-intensive sectors:** Job creation should receive greater priority so that more young people can move into productive and decent employment.
2. **Strengthen school-to-work pathways:** Apprenticeships, closer links between training institutions and employers, and stronger industry connections can improve the transition from education to employment.
3. **Promote formal employment:** Formal hiring incentives, better job contracts and wider social security coverage are needed to improve employment quality.
4. **Support women's workforce participation:** Safe transport, childcare support and measures that reduce barriers to paid work can help more women join and remain in the labour force.
5. **Build healthier workplaces:** Organisations should create clear career pathways, encourage continuous skill development and strengthen psychological safety at work.
6. **Train managers to support employee well-being:** Managers should receive practical training to identify workplace stress and support employees before problems become severe.
7. **Measure real well-being outcomes:** Organisations should focus on improvements in employee well-being, retention and productivity instead of only tracking participation in wellness programmes.

Conclusion

India's demographic dividend will succeed only when education leads to productive employment and workplaces support long-term well-being. Creating quality jobs, strengthening labour market transition, expanding formal employment and building healthier workplaces are equally important. Without these changes, India's growing youth population may become an unrealised opportunity rather than its greatest economic strength.

Question for practice:

Examine the major employment and workplace challenges faced by India's Gen Z and suggest measures to realise the country's demographic dividend.

Source: [The Hindu](#)

India's F&O Boom Needs Adequate Protections

UPSC Syllabus: Gs Paper 3- Indian economy

Introduction

India's Futures and Options (F&O) market has grown rapidly, making India one of the world's largest derivatives markets. While derivatives are meant to help investors manage financial risks, rising retail participation has increasingly shifted the market towards speculation. Heavy and repeated losses, mounting debt, and growing financial distress among small investors have exposed serious gaps in investor protection. This has made stronger regulation and suitability safeguards an urgent policy priority.

Understanding the Futures & Options (F&O) Market

1. **Meaning of F&O:** Futures and Options are derivative contracts that allow investors to buy, sell, or lock the price of an underlying asset at a future date without owning the asset. These assets include stocks, market indices, and commodities.
2. **Purpose of Derivatives:** Institutional investors mainly use F&O contracts to hedge their existing portfolios against market risks. Many retail investors, however, enter the market mainly to speculate for quick financial gains.
3. **Rapid Expansion of the Market:** India has moved from being a marginal player to one of the world's largest F&O markets within the last eight years. The introduction of weekly expiry contracts during FY16–FY19 played a major role in this rapid growth.
4. **Easy Access to Trading:** Mobile trading applications, instant UPI payments, discount brokerages, and simple account opening have made F&O trading easily accessible to a large number of people.
5. **Role of Market Conditions:** A strong bull market and the growing popularity of social media trading content encouraged more individuals to participate in derivative trading.

The Growing Crisis in India's F&O Market

1. **Large-Scale Retail Losses:** A July 2025 SEBI study found that **over 90%** of individual traders incurred losses during FY22–FY25. Their cumulative losses crossed **₹2.8 lakh crore**, while the average net loss exceeded **₹4 lakh** per trader.
2. **Very Few Profitable Traders:** Only **1%** of retail traders earned a profit of more than **₹1 lakh**. This shows that consistent success remains rare for individual participants.
3. **Profile of Affected Investors:** Around **86.3%** of traders are men, **over 72%** come from Tier-2 and Tier-3 cities, and **75%** earn less than **₹5 lakh annually**. These losses therefore affect financially vulnerable households more severely.
4. **Debt and Financial Distress:** Continuous trading losses have pushed many investors into debt. In several cases, mounting financial pressure has also resulted in suicides.
5. **Growing Retail Participation:** Even after regulatory measures reduced overall F&O activity, retail investors continued to increase their presence. **NSE data for May 2026** shows that individual investors accounted for **31%** of the equity derivatives market, a **4% year-on-year increase**.

Why Do Retail Investors Continue to Lose Money?

1. **Speculative Trading:** F&O contracts are mainly designed for hedging against market risks. However, many retail investors use them mainly to earn quick profits, increasing their exposure to repeated losses.
2. **Uneven Playing Field:** Retail investors compete against institutions using advanced algorithmic trading, superior technology, faster execution, and better market access. **97%** of institutional profits and **96%** of proprietary trading profits come from algorithmic trading, making competition highly unequal.
3. **Behavioural and Psychological Biases:** The hope of recovering losses, the attraction of quick profits, and repeated near-success experiences encourage many investors to continue trading despite heavy losses.
4. **Digital Trading Ecosystem:** Mobile trading apps, instant UPI payments, discount brokerages, and social media trading content have made speculative trading easy and attractive. This environment encourages frequent participation, especially among inexperienced investors.
5. **High Transaction Costs:** Many traders ignore brokerage charges, exchange fees, and taxes while focusing only on price movements. More than **70%** of transaction costs arise from brokerage and exchange charges.
6. **Unequal Distribution of Gains:** During FY24, retail traders lost ₹74,800 crore, while proprietary traders earned ₹33,000 crore and FPIs earned ₹28,000 crore, reflecting the unequal outcomes within the market.
7. **Persistent Participation Despite Losses:** More than **75%** of loss-making traders continue trading year after year, showing that financial losses alone are not discouraging speculative participation.

Regulatory Measures and Their Limitations

1. **Measures Introduced by SEBI:** Regulators increased minimum contract sizes, restricted weekly expiries, made upfront premium payments compulsory, enforced a **50% cash collateral** rule, strengthened intraday position monitoring, and required brokers to display prominent risk warnings.
2. **Limited Impact on Retail Participation:** These measures temporarily reduced trading volumes, but they did not discourage retail investors. Instead, individuals increased their share in the equity derivatives market to **31%** in May 2026, up **4% year-on-year**.
3. **Focus on Market Rules Rather Than Behaviour:** The reforms mainly changed trading conditions, but they did not address the behavioural factors and speculative mindset that continue to attract retail investors.
4. **Need to Move Beyond Warning-Based Regulation:** Experience shows that warnings alone cannot prevent repeated losses. Stronger entry safeguards are required to protect financially vulnerable investors.
5. **Balancing Market Growth and Investor Safety:** Regulation should encourage healthy market development while reducing avoidable financial risks for small investors.

Way Forward

1. **Adopt Global Best Practices:** India can strengthen investor protection by learning from mature derivatives markets that rely on strict suitability checks instead of only issuing risk warnings.
2. **Customer Knowledge Assessment:** Singapore requires brokers to conduct a formal **Customer Knowledge Assessment** before allowing investors to trade exchange-traded derivatives. This helps ensure that investors understand the risks.
3. **Broker Responsibility in Global Markets:** In the United States, brokers are legally responsible for assessing the suitability of retail clients. Approving inexperienced traders for complex strategies can result in severe penalties and civil liability.
4. **Introduce Entry Standards:** SEBI should consider prescribing a minimum liquid capital requirement and mandatory entry examinations before allowing retail participation in the F&O market.
5. **Strengthen India's Regulatory Framework:** SEBI should place the legal responsibility of verifying investor suitability on brokerages before granting F&O access, ensuring stronger protection for retail investors.
6. **Protect Financial Stability:** Stronger safeguards should ensure that the expansion of India's derivatives market and the proposed **NSE** public listing do not come at the cost of retail investor welfare and overall financial stability.

Conclusion

India's F&O market has expanded faster than its investor protection framework. Passive risk warnings alone cannot safeguard retail investors in a market dominated by technology and speculation. Strong suitability checks, stricter entry standards, greater broker accountability, and balanced regulation are essential to protect vulnerable investors while ensuring the long-term stability and credibility of India's derivatives market.

Question for practice:

Examine the reasons behind the rising retail investor losses in India's Futures and Options (F&O) market and suggest measures needed to strengthen investor protection.

Source: [The Hindu](#)

The precarity of living in urban slums

Source: The post “**The precarity of living in urban slums**” has been created based on “**The precarity of living in urban slums**” published in “Business Line” on 21st July 2026.

UPSC Syllabus: GS Paper 2 – Governance

Context: Urban India has witnessed significant expansion in schools, health centres, Anganwadis, water supply, and municipal services. However, field observations show that the quality of public service delivery in urban slums remains uneven because of weak institutional design, fragmented accountability, and inadequate community participation.

Reason behind quality outcomes remaining uneven in urban slums

1. **Weak institutional design:** Urban governance structures remain administratively present, but they are too distant from slum communities to effectively address their daily needs.
2. **Fragmented accountability:** Although public infrastructure has improved, poor maintenance of schools, sanitation facilities, and drinking water systems reflects weak institutional accountability.
3. **Irregular basic services:** Water tankers supply water to uncovered bastis, but the absence of fixed schedules forces women to spend several hours collecting water, causing drudgery and health concerns.
4. **Challenges in school education:** Many teachers work sincerely, but excessive non-teaching responsibilities reduce the time available for classroom teaching. At the same time, weak teacher accountability in some schools adversely affects learning outcomes.
5. **Limited childcare services:** Anganwadis provide essential nutrition and childcare services, but their limited working hours prevent them from functioning as full-day childcare centres.
6. **Inadequate primary healthcare:** The absence of nearby public clinics forces slum residents to travel long distances even for minor illnesses, resulting in delayed treatment and increased health risks.
7. **Health vulnerabilities of migrants:** Migrant populations face occupational health risks, poor housing conditions, and a higher incidence of communicable diseases. The fear of losing daily wages often discourages them from seeking timely medical care.
8. **Sustainability concerns in waste management:** Waste-to-wealth initiatives have expanded through public-private partnerships, but their long-term sustainability remains uncertain because private partners face profitability concerns.
9. **Digital exclusion:** The increasing use of technology has improved service delivery, but inadequate community-level handholding often excludes vulnerable groups from accessing these services.

Measures to improve last-mile governance

1. **Basti-centric collaborative governance:** Urban governance should actively involve local communities in planning, implementation, and monitoring of public services.
2. **Devolution of untied funds:** Communities should receive untied financial resources so that they can address local priorities and improve the maintenance of public infrastructure.
3. **Community-managed public services:** Professional organisations and civil society groups should support communities in managing schools, health centres, sanitation facilities, and other public services.
4. **Strengthening primary healthcare:** Municipal governance should integrate a stronger public health focus by establishing accessible clinics with doctors, medicines, and diagnostic facilities in slum areas.
5. **Community learning centres:** Secondary schools should remain accessible beyond school hours so that children can use them as community learning centres despite overcrowded housing conditions.
6. **Women's empowerment through SHGs:** Self-Help Groups should be further strengthened because they promote savings, access to credit, leadership, and social support. Simultaneously, efforts should be made to reduce patriarchal barriers that limit women's financial and social autonomy.
7. **Greater local accountability:** Smaller governance units and elected representatives at the basti level should be created to improve accountability, trust, and responsiveness.
8. **Technology with community support:** Technology should be treated as a tool for improving service delivery and should be complemented by community-level assistance to prevent exclusion.

Conclusion: The major challenge in urban slums is not the lack of infrastructure but the absence of accountable and participatory governance. A basti-centric governance model based on devolved resources, stronger

community participation, enhanced women's agency, and improved local accountability can ensure effective and inclusive last-mile service delivery.

Question: Urban social infrastructure has expanded, but quality outcomes remain uneven due to weak institutional design and the absence of meaningful community participation. Discuss in the context of urban slums. Suggest measures to improve last-mile governance.

Source: [Business Line](#)

Give talent its space

Source: The post "Give talent its space" has been created based on "Give talent its space" published in "Financial Express" on 21st July 2026.

UPSC Syllabus: GS Paper 3 – Science & Technology

Context: India's space sector has expanded rapidly after opening it to private participation in 2020. However, the recent resignations of ISRO scientists and the Department of Space's decision to restrict their exits have raised concerns about balancing talent retention with the development of a vibrant space ecosystem.

Challenges in talent retention at ISRO

1. **Restricting resignations does not address the root causes of attrition.** A memorandum cannot create motivation or commitment among scientists working on critical missions like Gaganyaan.
2. **Exit restrictions may discourage young talent from joining ISRO.** Scientists are more likely to prefer institutions that provide professional freedom and career flexibility.
3. **Treating every resignation as a national loss ignores the changing space ecosystem.** Scientists moving to Indian private space companies continue to contribute to national space capabilities.
4. **India's growing private space sector requires experienced professionals.** Start-ups developing launch vehicles, satellites, propulsion systems, and space-based services depend on skilled personnel trained by ISRO.
5. **ISRO's traditional role needs to evolve.** The organisation should be evaluated by the ecosystem it creates rather than by how tightly it retains its workforce.
6. **Institutional issues within ISRO also contribute to attrition.** Slow promotions, delayed projects, rigid hierarchies, limited recognition, and reduced professional autonomy encourage scientists to leave.
7. **The absence of robust succession planning increases disruption.** The departure of experienced scientists affects critical missions when specialised expertise is concentrated in a few individuals.

Measures to strengthen India's space ecosystem

1. **ISRO should focus on institutional reforms instead of imposing exit restrictions.** Faster career progression, performance-based rewards, and greater professional autonomy can improve job satisfaction.
2. **Collaboration between ISRO and the private sector should be strengthened.** Partnerships should move beyond procurement to include joint missions, shared research facilities, and collaborative innovation.
3. **Talent mobility should be institutionalised.** Fixed-term deputations, fellowships, and opportunities for scientists to move between ISRO, industry, and academia should be encouraged.

4. **IN-SPACe should develop frameworks for safe talent mobility.** It can facilitate knowledge sharing while protecting sensitive technologies and strategic projects.
5. **ISRO should concentrate on frontier research and strategic missions.** Routine commercial activities can increasingly be undertaken by private companies.
6. **Stronger succession planning and deeper technical teams should be developed.** This will reduce dependence on individual experts and minimise disruptions caused by resignations.

Conclusion: A dynamic space ecosystem requires the free flow of talent, technology, and innovation across public and private institutions. Instead of restricting scientists from leaving, India should strengthen ISRO through institutional reforms, greater collaboration, and talent mobility to realise its long-term space ambitions.

Question: Talent mobility between public institutions and private industry is essential for building a robust space ecosystem. In this context, discuss the challenges of talent retention in ISRO and suggest measures to strengthen India's space sector.

Source: [Financial Express](#)

Canada-India Defence Collaboration for a Secure Future

Introduction

Canada and India are entering a new phase of defence cooperation as the global security environment undergoes rapid change. The rise of advanced military technologies, geopolitical uncertainty, and the need for trusted strategic partners have encouraged both countries to deepen defence engagement. Recent political initiatives, institutional reforms, defence industrial cooperation, technology partnerships, and collaboration in critical minerals together provide a strong foundation for building a secure, resilient, and long-term strategic partnership.

Changing Global Security Landscape

1. **Changing Nature of Warfare:** Modern conflicts are increasingly shaped by drones, autonomous systems, and weapons in orbit. These technologies are changing how wars are fought and reducing traditional security barriers.
2. **Emerging Security Risks:** Future conflicts can emerge much closer to national borders than before. Countries must therefore prepare for faster and more complex security threats.
3. **Changing Global Order:** The existing world order is undergoing a major transformation. Both Canada and India recognise that the present decade is marked by growing global uncertainty.
4. **Canada's Defence Modernisation:** Canada has announced a plan to rebuild, rearm, and reinvest in its armed forces. It is preparing its military for future security challenges.
5. **Higher Defence Spending:** Canada plans to spend 5% of GDP on defence by 2035 and had already crossed 2% of GDP in March 2026. This reflects its commitment to strengthening national defence.
6. **Need for Trusted Partnerships:** The new security environment requires dependable international partners. Canada views India as a natural partner for long-term defence cooperation.

Renewed Canada-India Strategic Engagement

1. **Political Commitment:** Meetings between Prime Ministers Mark Carney and Narendra Modi have renewed momentum in bilateral relations. Both leaders have agreed to strengthen cooperation across strategic sectors.
2. **Strategic Partnership:** Canada and India have shared a Strategic Partnership since 2018. Recent leadership meetings and the New Roadmap have expanded cooperation in defence, political and economic sectors.
3. **Institutional Defence Dialogue:** Both countries have agreed to establish a Defence Dialogue. This will help identify common priorities, improve coordination, and align defence capabilities.
4. **Strong Foundation of Trust:** Nearly 80 years of diplomatic relations and a shared history of cooperation, including common sacrifices during the Second World War, continue to strengthen mutual trust and support deeper defence collaboration

Strengthening Bilateral Defence Cooperation

1. **Defence Advisers:** Canada and India have accredited Defence Advisers in Ottawa and New Delhi. This improves direct communication between both defence establishments.
2. **Military Exercises:** The navies of both countries participated in the Rim of the Pacific (RIMPAC) and Talisman Sabre exercises. These engagements improve operational coordination and interoperability.
3. **Professional Military Exchanges:** A delegation from India's National Defence College visited Canada in June 2026. Direct exchanges with Canadian military colleges and bases strengthen professional learning.
4. **Defence Reforms:** Canada has established a Defence Investment Agency and launched a Defence Industrial Strategy to modernise procurement and diversify defence supply chains.

Major Pillars of Canada–India Defence Collaboration

1. **Defence Industrial Cooperation:** Canada has invited India to participate in co-development, subsystem manufacturing, and sustainment, creating opportunities for deeper industrial collaboration.
2. **Aerospace and Space Cooperation:** Canada has advanced aerospace, satellite, and space robotics capabilities, while India has the world's third-largest domestic aviation market, low-cost space platforms, and expanding manufacturing capacity. These complementary strengths support joint research, aerospace technologies, defence innovation, and the use of RADARSAT for strengthening India's naval capability.
3. **Defence Innovation:** Canada is investing half a billion dollars in next-generation defence technologies, including a drone innovation hub. This investment supports future collaboration in advanced defence technologies.
4. **Critical Minerals Partnership:** Critical minerals are essential for modern defence technologies. The Canada–India MoU on the Critical Minerals Value Chain supports stable and resilient supply chains between both countries.
5. **Canada's Strategic Resource Base:** Canada possesses 31 critical minerals, including the 10th largest rare earth reserves, the 3rd largest recoverable uranium resources, and 5% of global tungsten reserves. It was also the second-largest producer and exporter of uranium, accounting for 24% of global production in 2024.
6. **Economic Security and Defence Security:** The crisis in West Asia has shown that economic security and national security are closely linked. Trusted critical mineral partnerships can strengthen long-term defence preparedness.

Strategic Significance of the Partnership

1. **Combining National Strengths:** Canada's technology strengths complement India's manufacturing capacity. This creates mutual advantages in defence production and innovation.
2. **Strengthening Defence Industries:** Joint manufacturing, technology development, and industrial cooperation can improve defence capabilities in both countries.
3. **Diversified Defence Supply Chains:** Canada seeks to reduce reliance on a single supplier, while India seeks dependable technology partners. This creates a strong basis for long-term collaboration.
4. **Regional Security:** Defence cooperation, maritime capabilities, and advanced technologies can strengthen security in the wider region.
5. **Broader Strategic Relations:** Defence cooperation also supports stronger political, economic, and technological engagement between the two countries. It strengthens confidence across the overall partnership.
6. **Long-Term Partnership:** Regular dialogue, institutional cooperation, and strategic trust can transform Canada-India relations into a durable security partnership.

Conclusion

Canada and India are well placed to build a stronger defence partnership based on strategic trust, technology, industrial cooperation, and resilient supply chains. Continued political commitment, institutional engagement, defence collaboration, and innovation can help both countries respond to emerging security challenges while supporting long-term regional stability and a more secure future.

Question for practice:

Examine the significance of Canada-India defence collaboration in addressing emerging security challenges and strengthening the long-term strategic partnership between the two countries.

Source: [The Hindu](#)

Why Inflation is Rising in India

UPSC Syllabus: Gs Paper 3- Indian economy

Introduction

Inflation in India remained relatively low for more than a decade, except during the COVID-19 pandemic. However, it has increased sharply in recent months, with **Wholesale Price Index (WPI) inflation reaching nearly 10% in June** after remaining low until December. The current inflation is mainly driven by higher fuel prices, rising production costs, and disruptions in food supply. It reflects the growing influence of supply-side and cost-related factors rather than a sharp increase in consumer demand.

What is Inflation?

1. **Meaning of Inflation:** Inflation is the continuous rise in the general prices of goods and services over time. As prices increase, the purchasing power of money declines because the same amount of money buys fewer goods and services.
2. **Measures of Inflation:** Inflation in India is mainly measured through the Wholesale Price Index (WPI) and the Consumer Price Index (CPI). WPI tracks changes in wholesale prices of goods, while CPI measures changes in retail prices paid by consumers and also includes services.

3. **Components of WPI:** WPI is a weighted average of primary articles (food, minerals and other agricultural products), fuel and power, and manufactured products. The recent rise in WPI has mainly been driven by fuel and power and manufactured products.
4. **Need to Understand Inflation:** Inflation is often explained only through demand and supply. However, different goods follow different pricing mechanisms, making it necessary to understand the actual sources of rising prices.

Types of Inflation

1. **Types Based on the Rate of Price Rise:** Inflation is classified as creeping, walking, galloping, and hyperinflation depending on how rapidly prices increase. These categories explain the speed of inflation rather than the reasons behind it.
2. **Types Based on the Causes of Inflation:** Inflation can also be classified according to the factors responsible for rising prices. The main types include demand-pull, cost-push, structural, built-in, and protein inflation, each arising from different economic conditions.
3. **Demand-pull Inflation:** Demand-pull inflation occurs when demand grows faster than available supply. It is generally seen in primary commodities where production cannot increase immediately.
4. **Cost-push Inflation:** Cost-push inflation occurs when production costs increase. Producers pass higher input costs to consumers, resulting in higher prices of manufactured goods.
5. **Structural Inflation:** Structural inflation arises because different sectors of the economy respond differently to changes in demand and supply. Primary commodities and manufactured goods therefore do not experience inflation in the same manner.
6. **Present Nature of Inflation:** India's recent inflation is largely a combination of cost-push and structural inflation, as higher production costs and supply constraints have contributed more than excess demand.

Understanding the Recent Rise in Inflation

1. **Sharp Rise in WPI Inflation:** WPI inflation remained low or even negative until December but increased sharply from March and reached nearly 10% in June, indicating a rapid rise in wholesale prices.
2. **Major Contributors:** Fuel and power and manufactured products have contributed the most to the recent increase in WPI inflation. Primary articles have also contributed, but their role has been comparatively smaller.
3. **Imported Nature of Fuel Inflation:** Fuel and power prices are closely linked to international crude oil prices because India imports a significant share of its oil. Higher global crude prices have therefore increased domestic fuel prices.
4. **Structural Difference in Price Determination:** Primary articles (food, minerals, etc.) are mainly demand-determined because their supply remains almost fixed in the short run. A fall in production quickly raises prices. In contrast, manufactured goods are mainly cost-determined because factories usually increase production to meet higher demand. Their prices rise mainly when production costs increase, not simply because demand increases.

Why is Inflation Rising in India?

1. **Higher Material Costs:** The recent rise in manufactured inflation is mainly due to higher material costs rather than higher wage costs. Costlier inputs have increased production expenses across industries.

2. **Oil as the Main Input:** Oil is one of the most important inputs in industrial production. The movement of fuel and power prices almost matches manufactured inflation, showing that higher fuel costs directly increase manufacturing and transportation costs.
3. **Limited Role of Wages:** Although wages are part of production costs, they have not been the main driver of inflation because most Indian workers have little bargaining power and are largely price-takers.
4. **Food Supply Disruptions:** Weak monsoon conditions caused by the El Niño effect have reduced agricultural production and the availability of food items, increasing food prices.
5. **Impact of Drought:** Food inflation may also occur during periods of strong demand, but drought remains a sufficient, though not necessary, condition for a sharp rise in food prices.
6. **Supply-side Nature of Inflation:** The current inflation is mainly driven by supply constraints rather than excessive consumer spending. Higher fuel costs, increased production expenses, and lower food supply have together pushed up prices across the economy.

Measures to Control Inflation

1. **Reduce Dependence on Monsoon:** Agriculture should become less dependent on rainfall by investing in irrigation infrastructure. Stable irrigation can reduce production losses caused by poor monsoon conditions.
2. **Strengthen Agricultural Infrastructure:** Better agricultural infrastructure can improve food production and reduce supply shocks. This can help maintain stable food prices over the long term.
3. **Countercyclical Tax Policy:** The government can reduce customs and excise duties when international crude oil prices rise to limit domestic fuel prices. Earlier tax reductions helped keep pump prices stable, while withdrawal of this measure contributed to the sharp rise in WPI inflation.
4. **Control Production Costs:** Stable fuel prices reduce transportation and manufacturing costs. Lower production costs also reduce the need for industries to increase product prices.
5. **Supply-side Measures:** Improving supply efficiency and reducing production costs can help control inflation more effectively when inflation is driven by supply-side factors.
6. **Balanced Inflation Management:** Inflation management should not rely only on the inflation-targeting framework. Cost-side fiscal measures should also be used when inflation is mainly driven by supply constraints.

Conclusion

India's recent inflation is mainly the result of **cost-push and supply-side pressures** rather than excessive demand. Rising global crude oil prices, higher production costs, and weather-related disruptions have increased both manufactured and food prices. Long-term investment in irrigation, stronger agricultural infrastructure, efficient supply chains, and timely fiscal measures to moderate fuel costs can reduce inflationary pressures and support greater price stability in the future.

Question for practice:

Discuss the major factors responsible for the recent rise in inflation in India and suggest measures to control it.

Source: [The Hindu](#)

EPFO 3.0: India's Universal Pension Reform to Reshape Social Security

Source: The post "EPFO 3.0: India's Universal Pension Reform to Reshape Social Security" has been created based on "EPFO 3.0: India's Universal Pension Reform to Reshape Social Security" published in "Indian Express" on 22nd July 2026.

UPSC Syllabus: GS Paper II – Social Justice

Context: The Employees' Provident Fund Organisation (EPFO) is proposing **EPFO 3.0** to extend social security coverage to the entire workforce, including gig, platform and unorganised workers. The reforms aim to create a flexible, technology-driven and universal pension system.

Key Features of EPFO 3.0

1. Universal Pension Cover

- a. EPFO 3.0 proposes a universal pension scheme based on a **defined contribution framework** for all workers.
- b. At the time of retirement, members will have the option to choose either an **annuity** or a **Systematic Withdrawal Plan (SWP)**.

2. Multiple Sources of Contributions

- a. The pension corpus will be built through contributions from workers, employers, government co-contributions for low-income workers, aggregators, CSR funds and other third parties.
- b. This is the first time that EPFO is proposing such a flexible contribution model.

3. Target Retirement Sum (TRS)

- a. Members will be able to set a **Target Retirement Sum (TRS)** according to their retirement goals.
- b. The system will calculate the required contribution amount and frequency and will allow members to revise their retirement target whenever required.

4. Personalised Digital Dashboard

- a. Every member will have access to a personalised dashboard displaying total contributions, real-time corpus status and progress towards the Target Retirement Sum.
- b. The dashboard will help members monitor and plan their retirement savings effectively.

5. Pension Simulation and Inflation-adjusted Projections

- a. The platform will allow members to simulate their future pension based on variables such as age, retirement age, corpus and interest rate.
- b. It will also provide optional inflation-adjusted projections and compare multiple retirement scenarios to support informed decision-making.

6. Flexible Withdrawal Options

- a. Members opting for the Systematic Withdrawal Plan will be able to increase or decrease their monthly withdrawals after retirement.

- b. Lower withdrawals will allow interest to accumulate, while higher withdrawals will draw from the principal amount.

7. Inclusion of Gig and Platform Workers

- a. EPFO 3.0 aims to extend pension and provident fund benefits to nearly **2.5 crore** gig workers and Building and Other Construction Workers (BOCW) over the next five years.
- b. A single Universal Account Number (UAN) will be linked with multiple employers and aggregators while maintaining separate contribution records.

8. Third-party and Aggregator Contributions

- a. The proposed system will allow contributions from NGOs, individuals, donor organisations, CSR funds and aggregators.
- b. It will also facilitate flexible co-contribution models for delivery partners, drivers and other platform workers.

9. Family and Survivor Pension

- a. The proposal includes pension benefits for spouses, children and orphans through a pooled **Family Benefit Fund** managed on actuarial principles.
- b. This provision aims to strengthen social security for workers' families.

10. Integration of Existing Provident Funds

- a. Members of EPF, GPF and other provident funds may be allowed to transfer their accumulated balances into the new pension framework.
- b. This will improve portability and consolidation of retirement savings.

11. Adoption of Core Banking Solution (CBS)

- a. EPFO plans to adopt a **Core Banking Solution (CBS)** to handle real-time transactions and improve service delivery.
- b. The upgraded platform is designed to support the social security needs of over **60 crore** workers.

12. Alignment with the Code on Social Security

- a. EPFO 3.0 supports the implementation of the **Code on Social Security** by extending provident fund and pension coverage to gig and unorganised workers.
- b. The platform will also support split-payment mechanisms for seamless social security contributions.

Significance

1. EPFO 3.0 will significantly expand social security coverage to the unorganised, gig and platform workforce.
2. It will provide workers with greater flexibility in retirement planning through multiple pension options.
3. It will improve transparency by providing real-time access to retirement savings and contribution records.

4. It will strengthen retirement income by allowing contributions from multiple stakeholders.
5. It will enhance portability of benefits for workers with multiple employers.
6. It will create a robust, technology-driven social security ecosystem capable of serving India's expanding workforce.

Conclusion: EPFO 3.0 marks a major step towards universal and inclusive social security by extending pension coverage beyond the organised sector and creating a flexible, technology-enabled retirement framework for India's workforce.

Question: EPFO 3.0 seeks to expand India's social security architecture beyond the organised workforce. Discuss the key features of the proposed reforms and their significance.

Source: [Indian Express](#)

A checklist for a new-age courtroom

Source: The post "A checklist for a new-age courtroom" has been created based on "A checklist for a new-age courtroom" published in "Indian Express" on 22nd July 2026.

UPSC Syllabus: GS Paper II – Governance

Context: The Supreme Court has released **draft regulations** for the use of Artificial Intelligence (AI) in courts to govern AI adoption, create oversight institutions and prescribe approval processes. As AI is still at an early stage in the judiciary, the regulatory framework must remain adaptable while establishing strong institutional and technical foundations.

Key Concerns in the Use of AI in Courts

1. Lack of Long-term Institutional Framework

- a. The draft regulations propose multiple AI governance bodies at the Supreme Court, High Court and district levels.
- b. Creating separate institutions for every new technology may fragment accountability and delay decision-making.
- c. The judiciary requires a permanent institution capable of managing all technology-related functions rather than technology-specific committees.

2. Absence of Uniform Technical Standards

- a. The regulations specify **who** will approve AI systems but do not define **what standards** AI systems must satisfy before approval.
- b. The absence of common benchmarks may result in inconsistent evaluation of AI systems.

3. Risk of Inconsistent Justice

- a. Each High Court may independently decide what constitutes an acceptable AI system.
- b. Differences in technical capacity across High Courts could lead to varying approval standards and inconsistent judicial outcomes.

4. Lack of Clear Performance Benchmarks

- a. The regulations do not specify the level of explainability required from AI systems.
- b. They also do not define acceptable error rates for different judicial functions such as bail decisions and case scheduling.
- c. The source and quality of AI training data have also not been prescribed.

5. Conflict between Standard-setting and Procurement

- a. The same institution should not both set standards and procure AI systems.
- b. Combining these functions may compromise neutrality and transparency in AI governance.

Measures for Responsible AI Adoption

1. Establish a Permanent Technology Institution

- a. The judiciary should create a permanent institution that integrates existing e-Committee functions with future AI governance.
- b. Such an institution would provide continuity, expertise and clear ownership of technology reforms.

2. Develop Uniform National Standards

- a. Standardised benchmarks should define explainability, accuracy, acceptable error rates and training data requirements for AI systems.
- b. Uniform standards would ensure consistency across all courts.

3. Create an Independent Standards Body

- a. The proposed **Centre of Research and Excellence on AI (CoRE-AI)** should function as an independent technical body with no procurement role.
- b. It should focus exclusively on developing and updating AI standards.

4. Separate Standards from Procurement

- a. A permanent technical institution should procure AI systems based on established standards.
- b. A judicial committee should independently approve AI systems to maintain transparency and accountability.

5. Build Future-ready Governance

- a. AI regulations should establish principles that remain relevant as technology evolves.
- b. The governance framework should support future technological innovations beyond AI.

Conclusion: AI has the potential to improve judicial administration, but its adoption must be guided by strong institutions, uniform standards and independent oversight. A future-ready governance framework will ensure that AI strengthens efficiency without compromising consistency, fairness and the integrity of the justice system.

Question: Discuss the key concerns in the use of Artificial Intelligence (AI) in the Indian judiciary. Suggest measures for ensuring responsible AI adoption in courts.

Source: [Indian Express](#)

Coming to Grips with Rare Earths

UPSC Syllabus: Gs Paper 3- Infrastructure

Introduction

India is trying to build a domestic rare-earth magnet industry to reduce its dependence on imports and strengthen critical mineral security. The government has introduced financial incentives and policy measures to develop a complete mine-to-magnet value chain. However, the biggest obstacle is not the availability of minerals or funding. Success depends on acquiring advanced refining technology, manufacturing expertise, and industrial experience needed to produce high-quality rare-earth magnets at a commercial scale.

About Rare-Earth Magnets

1. **Definition:** Rare-earth magnets are **permanent magnets** made from alloys of rare-earth elements. They produce very strong magnetic fields despite their compact size.
2. **Major Types:** The two most common rare-earth magnets are **Neodymium-Iron-Boron (Nd-Fe-B)** and **Samarium-Cobalt (SmCo)**. Nd-Fe-B magnets contain **neodymium, iron, and boron**, while SmCo magnets contain **samarium and cobalt**.
3. **Key Properties:** These magnets have **high magnetic strength, high energy density, and excellent performance** compared to ordinary magnets. However, they are brittle and prone to corrosion, so they are usually coated with nickel.
4. **Major Uses:** Rare-earth magnets are used in **electric vehicles, wind turbines, MRI and PET scanners, smartphones, hard drives, industrial motors, aviation, defence equipment, consumer electronics, and jewellery**.
5. **Cannot Be Easily Replaced:** Their unique atomic structure gives them exceptional magnetic strength. For high-temperature applications, **dysprosium and terbium** are added to maintain magnetic performance.

Strategic Importance of Rare-Earth Magnets

1. **Foundation of Modern Technologies:** Rare-earth magnets are essential for **electric vehicles, wind turbines, industrial motors, semiconductors, data centres, jet aircraft, and guided missiles**. Their supply is vital for both economic growth and national security.
2. **Critical for Green Energy Transition:** Rare-earth elements support renewable energy technologies and clean mobility. Their demand is rising as countries expand electric transport and renewable power generation.

3. **Growing Strategic Market:** The global rare-earth market exceeded **\$7.2 billion in 2025** and is projected to reach **\$12.6 billion by 2035**. Its strategic value is much greater than its market size because it supports advanced technologies.
4. **India's Heavy Import Dependence:** India imports **85–90%** of its rare-earth magnets, with almost all supplies coming from **China**. This creates a major strategic and industrial vulnerability.
5. **Supply Disruptions Can Halt Industries:** China's export restrictions in **2025** disrupted automobile production across several countries and sharply increased the price of neodymium outside China.
6. **Limited Domestic Buffer:** At the time of the export restrictions, India's rare-earth magnet stocks were estimated to last only **two to three weeks**, exposing the country's weak supply security.

Government Initiatives and Policy Support

1. **Rare-Earth Magnet Incentive Scheme:** India has announced a **₹7,280 crore** incentive scheme to support **five manufacturers** in establishing **6,000 tonnes** of annual magnet production capacity.
2. **National Critical Minerals Mission:** The government has launched the **₹34,300 crore National Critical Minerals Mission** to strengthen domestic critical mineral production and improve supply security.
3. **Rare-Earth Industrial Corridors:** The Union Budget has proposed **rare-earth corridors in four States** to promote investment and build a domestic manufacturing ecosystem.
4. **Pilot Manufacturing Facility:** A **pilot rare-earth magnet plant at Hyderabad** has been planned to support domestic production and technology development.
5. **Building the Complete Value Chain:** The overall objective is to create a complete domestic chain covering mining, refining, processing, and magnet manufacturing.

Why Rare-Earth Magnet Manufacturing is Technologically Challenging

1. **Processing is More Difficult than Mining:** Rare-earth deposits are available in many countries, but converting them into usable materials requires advanced processing technologies.
2. **Refining Determines Competitiveness:** Refining produces magnet-grade material and is the most valuable stage of the value chain. Countries that master refining control the industry.
3. **Unique Magnetic Properties:** Neodymium magnets retain strong magnetic performance because of their atomic structure, making them far more powerful than ordinary iron magnets.
4. **Role of Heavy Rare Earths: Dysprosium and terbium** are added to magnets used in electric vehicles, wind turbines, and guided missiles because they help maintain magnetic strength at high temperatures.
5. **Perfect Grain Alignment is Essential:** A magnet performs well only when millions of microscopic magnetic grains are aligned in one direction. Poor alignment significantly reduces magnetic performance.

6. **Complex Multi-Step Manufacturing:** Producing a rare-earth magnet requires **more than a dozen precision steps**, including separation, powder preparation, magnetic pressing, furnace treatment, machining, coating, and magnetisation.
7. **Know-How Cannot Be Purchased Easily:** Maintaining powder purity, preventing contamination, and controlling furnace conditions require specialised knowledge that develops only through years of practical experience.

China's Dominance in the Global Rare-Earth Value Chain

1. **Early Investment Created Leadership:** China invested heavily in rare-earth refining and manufacturing from the early **1990s**, allowing it to build unmatched industrial capabilities over three decades.
2. **Control Beyond Mineral Reserves:** China produces about **60%** of the world's magnet-grade rare earths but carries out nearly **91%** of global refining, giving it greater control over the supply chain.
3. **Complete Production Ecosystem:** China remains the only country with a complete rare-earth production cycle, covering mining, refining, processing, magnet manufacturing, and related technologies.
4. **Dominance in Permanent Magnets:** China supplies nearly **94%** of the world's permanent magnets, making global manufacturing highly dependent on its production capacity.
5. **Use of Export Controls:** China has strengthened its position through **export controls, production quotas, technology restrictions, and equipment controls** on strategically important rare-earth materials.
6. **Strategic Economic Leverage:** China uses its dominance to influence global prices, regulate supplies, and strengthen its position in technological and economic competition with other major powers.
7. **Technology is the Real Advantage:** China's greatest strength is not simply its mineral deposits. Its real advantage comes from decades of refining expertise, manufacturing experience, and continuous industrial learning that other countries are still trying to develop.

Key Challenges Before India

1. **Technology Dependence:** Companies require specialised refining technology, furnace expertise and manufacturing know-how. Without access to these capabilities, domestic production cannot expand rapidly.
2. **Manufacturing Complexity and Quality Risks:** Rare-earth magnet production involves more than a dozen precision steps. Small errors reduce product quality, while rejected batches increase manufacturing costs.
3. **Long Industrial Learning Curve:** Manufacturing becomes economical only through repeated production, experimentation and process improvements. Financial incentives cannot replace years of industrial learning.

4. **Limited Domestic Production Capacity:** Indian Rare Earths (IREL) Limited currently produces only 400–500 tonnes of key refined material annually, while it aims to increase production to 10,000 tonnes by 2027. This gap highlights India's limited refining and processing capacity.
5. **Supply Chain Vulnerability:** Heavy dependence on imported magnets exposes India's industries to export restrictions, price volatility, and disruptions in global supply chains.

Way Forward

1. **Invest in Technology and Skilled Manpower:** Focus on refining technology, chemistry, furnace operations and technical expertise.
2. **Strengthen Domestic Refining Capacity:** Increase refining capacity because refining is the most critical stage of the value chain.
3. **Support Industrial Learning:** Policy support should recognise that manufacturing expertise develops gradually through continuous production, quality improvement, and practical experience rather than one-time financial incentives.
4. **Promote Rare-Earth Recycling:** India imports magnets within motors, drives, speakers, and electronic products. Recovering magnets from discarded equipment can reduce dependence on fresh processing and skip several complex manufacturing stages.
5. **Leverage International Partnerships:** India should utilise its mineral partnerships with **Australia, Japan, and Western countries** to gain access to technology, expertise, and industrial knowledge while strengthening domestic capabilities.
6. **Develop a Complete Domestic Value Chain:** Long-term success requires integrating mining, refining, processing, magnet manufacturing, and technology development into a single domestic ecosystem.
7. **Focus on Technology Security:** Lasting self-reliance will depend on mastering production technologies and manufacturing skills rather than only securing access to mineral resources.

Conclusion

India's rare-earth challenge is ultimately a technology challenge rather than a resource challenge. Financial incentives alone cannot build a competitive magnet industry without strong refining capabilities, manufacturing expertise, and continuous industrial learning. Developing a complete domestic value chain through technology, recycling, skilled manpower, and international partnerships will strengthen supply-chain resilience, reduce import dependence, and improve India's long-term strategic and technological security.

Question for practice:

Discuss the importance of rare-earth magnets and examine the challenges in developing a domestic rare-earth magnet industry in India.

Source: [Businessline](#)

New Trade Pact: A Win-Win for India and the U.K.

UPSC Syllabus: Gs Paper 2-International Relations

Introduction

The India–U.K. Comprehensive Economic and Trade Agreement (CETA), which came into force on July 15, marks a significant milestone in bilateral relations. More than a conventional tariff reduction pact, it reflects the strategic alignment of two major democracies seeking deeper economic cooperation in a changing global order. Aligned with the India–U.K. Vision 2035, the agreement expands trade, investment, technology, and temporary business mobility while supporting the shared goal of increasing bilateral trade to over \$100 billion by 2030.

Key Features of the India–U.K. CETA

1. **Strategic Economic Partnership:** The agreement is one of India's most comprehensive trade agreements. It provides a stable institutional framework to deepen cooperation in trade, investment, technology, climate, and innovation.
2. **Large-Scale Tariff Liberalisation:** India has secured **zero-duty access for 99% of its exports** to the U.K. Tariffs ranging from **70% on processed foods** and **12% on textiles** will be reduced to zero, making Indian products more competitive.
3. **Balanced Market Access:** Steel export concerns have been addressed through arrangements that reduce market disruption and provide certainty for exporters. Electric vehicle imports will follow tariff-rate quotas with phased tariff reduction, while **agriculture and dairy remain protected through safeguards**.
4. **Expanded Market Opportunities:** Indian firms can now participate in a wider range of U.K. government procurement contracts, especially in **infrastructure services and consulting**, creating new business opportunities.
5. **Future-Oriented Trade Rules:** Modern provisions cover **digital trade, labour, gender, intellectual property, and innovation**. These provisions support integration into global value chains and encourage investment in emerging sectors.

Major Benefits for India

1. **Boost to Labour-Intensive Exports:** Zero-duty access is expected to increase exports from **textiles, leather, footwear, marine products, and gems and jewellery**, where lower prices improve competitiveness.
2. **Support for High-Value Manufacturing:** Engineering goods and chemicals will gain from stable market access. Better export conditions can improve margins and expand market opportunities.
3. **Growth in Services Sector:** Indian providers in **IT, education, healthcare, financial services, and professional services** will receive wider access to the U.K. market, strengthening India's role as a global services hub.

4. Expanded Business Mobility: The agreement provides greater certainty for temporary movement under existing visa categories and expands access for business visitors, intra-company transferees, graduate trainees, contractual service suppliers, independent professionals, and expansion workers. It also introduces an annual quota of 1,800 visas for chefs de cuisine, yoga teachers, and classical musicians.

5. Temporary Business Mobility: The agreement facilitates short-term movement of professionals for business assignments. It does not create a new immigration route or pathway to permanent settlement in the U.K.

6. Technology and Investment Opportunities: The agreement supports investment in **fintech, green technologies, startups, and Global Capability Centres**. It also encourages collaboration in emerging technologies such as **Artificial Intelligence (AI)**.

7. Higher Investment Flows: The **U.K. is India's sixth-largest investor** and has contributed around **5% of cumulative FDI equity inflows since April 2000**. The agreement is expected to increase bilateral investment further.

8. Balanced Protection for Domestic Interests: India has protected sensitive sectors such as agriculture and dairy, adopted tariff rate quotas for electric vehicles, and secured arrangements to reduce uncertainty for steel exports, balancing trade liberalisation with domestic priorities.

What the Agreement Does Not Change

1. No New Immigration Route: The agreement does not create any new pathway for Indians to obtain employment in the United Kingdom (U.K.). It only facilitates **temporary business mobility** through existing visa categories.

2. No Settlement or Citizenship Benefits: The agreement does not provide **permanent residency, British citizenship, or visa-free travel**. It is not intended as a route for long-term migration or settlement.

3. Existing Immigration Rules Continue: Applicants must continue to satisfy all existing U.K. immigration requirements, including **employer sponsorship, salary thresholds, qualification criteria, visa fees, and the Immigration Health Surcharge**.

4. U.K. Retains Full Immigration Control: The U.K. government continues to have the authority to revise immigration policies, sponsorship rules, salary thresholds, and visa conditions. The agreement does not limit this power.

5. Visa Violations Continue to Attract Penalties: Overstaying or breaching visa conditions can still lead to **deportation, re-entry bans, and difficulties in obtaining future visas**. The agreement does not relax immigration enforcement.

Strategic Gains for the United Kingdom

1. Stronger Presence in a Fast-Growing Economy: The agreement strengthens the U.K.'s long-term economic partnership with one of the world's fastest-growing major economies. It creates new opportunities for trade and investment.

2. **Greater Commercial Opportunities:** The agreement gives U.K. businesses wider opportunities to expand trade, investment, and commercial activities in India's growing market through a stronger institutional framework.
3. **Education Partnership:** The provision allowing U.K. institutions to establish campuses in India increases educational cooperation. It also supports long-term skill and knowledge partnerships.
4. **Long-Term Investment Prospects:** The agreement supports the shared objective of increasing **bilateral trade to over US\$100 billion by 2030**. It also strengthens the institutional framework needed to achieve this target.

Implementation Priorities and Role of Industry

1. **Improving Product Quality:** Indian industries need to invest in **quality upgradation, standards compliance, and sustainability** to fully benefit from the agreement.
2. **Using Mobility Provisions:** Indian companies should use professional mobility provisions to strengthen their presence in the U.K. services market. Building partnerships and long-term capabilities will improve competitiveness.
3. **Supporting MSMEs:** Industry bodies should help **Micro, Small and Medium Enterprises (MSMEs)** understand compliance requirements and procurement opportunities. This will allow smaller businesses to benefit from new export opportunities.
4. **Sector-Focused Guidance:** Special support is needed for sectors such as **processed foods, textiles, handicrafts, IT-enabled services, and business services**. Proper guidance can improve participation in the U.K. market.

Broader Economic and Strategic Significance

1. **Strengthening Rules-Based Trade:** The agreement reinforces the importance of **open, rules-based international trade** at a time when many countries are increasing regulatory barriers.
2. **Supporting Atmanirbhar Bharat:** Better market access and higher competitiveness help strengthen the objectives of **Atmanirbhar Bharat** while encouraging domestic industries to compete globally.
3. **Complementing National Initiatives:** The agreement supports **Make in India** and **Digital India** by expanding manufacturing opportunities, services exports, and professional mobility.
4. **Reshaping Trade and Investment Flows:** A stronger institutional framework can increase bilateral trade and investment, creating new economic opportunities for both countries.
5. **Promoting Employment and Innovation:** Higher exports and investment can create **quality jobs** and help India move towards a more **innovation-driven economy**.
6. **Setting a Benchmark for Future FTAs:** The agreement serves as a model for India's future trade agreements by combining market access with modern trade provisions.

7. Building Trilateral Economic Partnerships: It creates opportunities to combine **India's manufacturing strength and skilled workforce** with the **U.K.'s financial, technological, and commercial networks** for wider economic cooperation.

8. Strengthening Regional Value Chains: The **United Kingdom's membership in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)** and the proposed **India-European Union (EU) Trade Agreement** can help Indian businesses integrate into wider regional value chains, diversify exports, and strengthen supply chain resilience.

Conclusion

The India-U.K. CETA establishes a strong foundation for a long-term economic partnership by expanding trade, investment, services, technology, and temporary business mobility while preserving each country's policy priorities. It can strengthen competitiveness, create quality employment, and serve as a benchmark for future trade agreements, helping both countries achieve their shared goal of over **\$100 billion** in bilateral trade by **2030**.

Question for practice:

Examine the key features and broader economic and strategic significance of India-U.K. Comprehensive Economic and Trade Agreement (CETA).

Source: [The Hindu](#)

EPFO 3.0: India's Universal Pension Reform to Reshape Social Security

Source: The post "EPFO 3.0: India's Universal Pension Reform to Reshape Social Security" has been created based on "EPFO 3.0: India's Universal Pension Reform to Reshape Social Security" published in "Indian Express" on 22nd July 2026.

UPSC Syllabus: GS Paper II – Social Justice

Context: The Employees' Provident Fund Organisation (EPFO) is proposing **EPFO 3.0** to extend social security coverage to the entire workforce, including gig, platform and unorganised workers. The reforms aim to create a flexible, technology-driven and universal pension system.

Key Features of EPFO 3.0

1. Universal Pension Cover

- EPFO 3.0 proposes a universal pension scheme based on a **defined contribution framework** for all workers.
- At the time of retirement, members will have the option to choose either an **annuity** or a **Systematic Withdrawal Plan (SWP)**.

2. Multiple Sources of Contributions

- The pension corpus will be built through contributions from workers, employers, government co-contributions for low-income workers, aggregators, CSR funds and other third parties.
- This is the first time that EPFO is proposing such a flexible contribution model.

3. Target Retirement Sum (TRS)

- a. Members will be able to set a **Target Retirement Sum (TRS)** according to their retirement goals.
- b. The system will calculate the required contribution amount and frequency and will allow members to revise their retirement target whenever required.

4. Personalised Digital Dashboard

- a. Every member will have access to a personalised dashboard displaying total contributions, real-time corpus status and progress towards the Target Retirement Sum.
- b. The dashboard will help members monitor and plan their retirement savings effectively.

5. Pension Simulation and Inflation-adjusted Projections

- a. The platform will allow members to simulate their future pension based on variables such as age, retirement age, corpus and interest rate.
- b. It will also provide optional inflation-adjusted projections and compare multiple retirement scenarios to support informed decision-making.

6. Flexible Withdrawal Options

- a. Members opting for the Systematic Withdrawal Plan will be able to increase or decrease their monthly withdrawals after retirement.
- b. Lower withdrawals will allow interest to accumulate, while higher withdrawals will draw from the principal amount.

7. Inclusion of Gig and Platform Workers

- a. EPFO 3.0 aims to extend pension and provident fund benefits to nearly **2.5 crore** gig workers and Building and Other Construction Workers (BOCW) over the next five years.
- b. A single Universal Account Number (UAN) will be linked with multiple employers and aggregators while maintaining separate contribution records.

8. Third-party and Aggregator Contributions

- a. The proposed system will allow contributions from NGOs, individuals, donor organisations, CSR funds and aggregators.
- b. It will also facilitate flexible co-contribution models for delivery partners, drivers and other platform workers.

9. Family and Survivor Pension

- a. The proposal includes pension benefits for spouses, children and orphans through a pooled **Family Benefit Fund** managed on actuarial principles.
- b. This provision aims to strengthen social security for workers' families.

10. Integration of Existing Provident Funds

- a. Members of EPF, GPF and other provident funds may be allowed to transfer their accumulated balances into the new pension framework.
- b. This will improve portability and consolidation of retirement savings.

11. Adoption of Core Banking Solution (CBS)

- a. EPFO plans to adopt a **Core Banking Solution (CBS)** to handle real-time transactions and improve service delivery.
- b. The upgraded platform is designed to support the social security needs of over **60 crore** workers.

12. Alignment with the Code on Social Security

- a. EPFO 3.0 supports the implementation of the **Code on Social Security** by extending provident fund and pension coverage to gig and unorganised workers.
- b. The platform will also support split-payment mechanisms for seamless social security contributions.

Significance

- 1. EPFO 3.0 will significantly expand social security coverage to the unorganised, gig and platform workforce.
- 2. It will provide workers with greater flexibility in retirement planning through multiple pension options.
- 3. It will improve transparency by providing real-time access to retirement savings and contribution records.
- 4. It will strengthen retirement income by allowing contributions from multiple stakeholders.
- 5. It will enhance portability of benefits for workers with multiple employers.
- 6. It will create a robust, technology-driven social security ecosystem capable of serving India's expanding workforce.

Conclusion: EPFO 3.0 marks a major step towards universal and inclusive social security by extending pension coverage beyond the organised sector and creating a flexible, technology-enabled retirement framework for India's workforce.

Question: EPFO 3.0 seeks to expand India's social security architecture beyond the organised workforce. Discuss the key features of the proposed reforms and their significance

Source: [Indian Express](#)

A checklist for a new-age courtroom

Source: The post "A checklist for a new-age courtroom" has been created based on "A checklist for a new-age courtroom" published in "Indian Express" on 22nd July 2026.

UPSC Syllabus: GS Paper II – Governance

Context: The Supreme Court has released **draft regulations** for the use of Artificial Intelligence (AI) in courts to govern AI adoption, create oversight institutions and prescribe approval processes. As AI is still at an early stage in the judiciary, the regulatory framework must remain adaptable while establishing strong institutional and technical foundations.

Key Concerns in the Use of AI in Courts

1. Lack of Long-term Institutional Framework

- a. The draft regulations propose multiple AI governance bodies at the Supreme Court, High Court and district levels.
- b. Creating separate institutions for every new technology may fragment accountability and delay decision-making.
- c. The judiciary requires a permanent institution capable of managing all technology-related functions rather than technology-specific committees.

2. Absence of Uniform Technical Standards

- a. The regulations specify **who** will approve AI systems but do not define **what standards** AI systems must satisfy before approval.
- b. The absence of common benchmarks may result in inconsistent evaluation of AI systems.

3. Risk of Inconsistent Justice

- a. Each High Court may independently decide what constitutes an acceptable AI system.
- b. Differences in technical capacity across High Courts could lead to varying approval standards and inconsistent judicial outcomes.

4. Lack of Clear Performance Benchmarks

- a. The regulations do not specify the level of explainability required from AI systems.
- b. They also do not define acceptable error rates for different judicial functions such as bail decisions and case scheduling.
- c. The source and quality of AI training data have also not been prescribed.

5. Conflict between Standard-setting and Procurement

- a. The same institution should not both set standards and procure AI systems.
- b. Combining these functions may compromise neutrality and transparency in AI governance.

Measures for Responsible AI Adoption

1. Establish a Permanent Technology Institution

- a. The judiciary should create a permanent institution that integrates existing e-Committee functions with future AI governance.
- b. Such an institution would provide continuity, expertise and clear ownership of technology reforms.

2. Develop Uniform National Standards

- a. Standardised benchmarks should define explainability, accuracy, acceptable error rates and training data requirements for AI systems.
- b. Uniform standards would ensure consistency across all courts.

3. Create an Independent Standards Body

- a. The proposed **Centre of Research and Excellence on AI (CoRE-AI)** should function as an independent technical body with no procurement role.
- b. It should focus exclusively on developing and updating AI standards.

4. Separate Standards from Procurement

- a. A permanent technical institution should procure AI systems based on established standards.
- b. A judicial committee should independently approve AI systems to maintain transparency and accountability.

5. Build Future-ready Governance

- a. AI regulations should establish principles that remain relevant as technology evolves.
- b. The governance framework should support future technological innovations beyond AI.

Conclusion: AI has the potential to improve judicial administration, but its adoption must be guided by strong institutions, uniform standards and independent oversight. A future-ready governance framework will ensure that AI strengthens efficiency without compromising consistency, fairness and the integrity of the justice system.

Question: Discuss the key concerns in the use of Artificial Intelligence (AI) in the Indian judiciary. Suggest measures for ensuring responsible AI adoption in courts.

Source: [Indian Express](#)

Where does the law stand on internet shutdowns in India?

UPSC Syllabus: Gs Paper 2- Government policies and interventions for development in various sectors and issues arising out of their design and implementation. And Governance

Introduction

Internet shutdowns are legally permitted in India only under limited circumstances to address public emergency or public safety concerns. They are governed by the **Telecommunications Act, 2023** and the **Telecommunications (Temporary Suspension of Services) Rules, 2024**, which prescribe clear legal and procedural safeguards. However, repeated shutdowns and gaps in implementing these safeguards have raised concerns over **necessity, proportionality, transparency, accountability, and the protection of fundamental rights.**

Internet Shutdown: Meaning and Purpose

1. **Meaning of Internet Shutdown:** An internet shutdown is the **intentional disruption of internet or electronic communication services** in a specific area or for a particular group. It makes these services inaccessible or seriously limits their use to control the flow of information.

2. **Different Forms of Shutdown:** A shutdown may involve a **complete suspension of internet services**, slowing down internet speed, or blocking access to specific online platforms. The method depends on the objective of the order.
3. **Situations in Which Shutdowns Are Used:** Internet shutdowns are commonly imposed when large gatherings are expected during **political events, peaceful demonstrations, violent protests, or religious celebrations**. Authorities use them to prevent possible disturbances to public order.
4. **Legal Basis for Imposing Shutdowns:** Under **Section 20(2)(b) of the Telecommunications Act, 2023**, internet services can be suspended only during a **public emergency** or in the interest of **public safety**. The order must be based on the grounds specified in the law and supported by written reasons.
5. **Protest Is Not a Sufficient Ground:** A protest by itself is **not a lawful reason** to suspend internet services. The government must also show that the suspension is necessary for purposes such as maintaining **public order**.
6. **Consideration Before Suspension:** Before suspending internet services, authorities must examine whether less restrictive measures can achieve the same objective. Internet suspension should not become the first response.

Legal Framework Governing Internet Shutdowns in India

1. **Shift to the New Legal Framework:** Internet shutdowns were earlier governed by **Section 5(2) of the Indian Telegraph Act, 1885** and the **2017 Rules**. They are now governed by **Section 20 of the Telecommunications Act, 2023** and the **Telecommunications (Temporary Suspension of Services) Rules, 2024**.
2. **Grounds for Suspension:** A shutdown may be ordered only during a **public emergency** or in the interest of **public safety** for the grounds specified in the law, such as **public order, sovereignty and integrity of India, defence, State security, friendly relations with foreign States**, or preventing **incitement to an offence**.
3. **Competent Authority:** The **Central Government, State Government, or an authorised officer** can issue a shutdown order only by following the prescribed legal procedure.
4. **Statutory Requirements:** Every shutdown order must be issued in writing, record reasons, specify the affected area and duration, be published, and consider whether less restrictive measures can achieve the same objective.
5. **Scope of the 2024 Rules:** The **2024 Rules** seek to prevent arbitrary shutdowns by prescribing clear procedures and safeguards before internet services can be suspended.

Supreme Court Safeguards: *Anuradha Bhasin v. Union of India (2020)*

1. **Recognition of Fundamental Rights:** The Supreme Court held that access to the internet is closely linked to the freedoms under **Articles 19(1)(a) and 19(1)(g)**. Internet restrictions can therefore affect freedom of speech and the freedom to carry on trade or business.
2. **Legality of Shutdown Orders:** The Court held that every internet shutdown must have a **clear legal basis**. Authorities cannot suspend internet services without following the law.

3. **Necessity and Proportionality:** The Court ruled that a shutdown must pursue a **legitimate objective**, remain **necessary**, and be **proportionate** to the situation. Blanket restrictions cannot be imposed without proper justification.
4. **Least Restrictive Measure:** The Court observed that a complete suspension of telecom services should be imposed only when it is **necessary and unavoidable**. Authorities must first examine whether a less restrictive measure can achieve the same objective.
5. **Procedural Safeguards:** The Court directed that shutdown orders should contain **detailed reasons**, remain limited in **scope and duration**, be **published**, and undergo review by a competent committee.
6. **No Indefinite Suspension:** The Court held that **indefinite internet shutdowns are impermissible**. Further, under the **Telecommunications (Temporary Suspension of Services) Rules, 2024**, a suspension order cannot remain in force for more than **15 days**.
7. **Judicial Review:** The Court clarified that shutdown orders are open to **judicial review**. Such orders can be challenged before the **High Court under Article 226** or, in appropriate cases, before the **Supreme Court under Article 32**.

Issues in Implementation

1. **Continued Use of Repealed Provisions:** Several State governments have continued to issue internet shutdown orders under the **Indian Telegraph Act, 1885** and the **2017 Rules**, even after the **Telecommunications Act, 2023** and the **2024 Rules** came into force.
2. **Frequent Use Despite Strict Law:** Internet shutdowns continue to be imposed regularly in India, even though the law allows them only under limited and exceptional conditions. This has raised concerns about their repeated use.
3. **Generic Reasons in Shutdown Orders:** Many orders rely on broad statements such as the possibility of misuse of social media or threats to law and order. They often do not provide specific facts or evidence to justify the suspension.
4. **Failure to Meet Legal Standards:** Several shutdown orders do not satisfy the legal requirements of **necessity, proportionality, and reasoned justification**. Blanket suspensions have been issued without showing why they were the only available option.
5. **Limited Transparency:** Only a small number of shutdown orders are available in the public domain. Many became accessible only after applications were filed under the **Right to Information (RTI) Act**, reducing transparency and public scrutiny.
6. **Use of Similar Justifications Across States:** Shutdown orders issued in **Manipur, Jammu & Kashmir, Haryana, Rajasthan, Punjab, and Odisha** have shown a similar pattern of using vague and general reasons. This weakens accountability and raises the possibility of misuse.
7. **Administrative Overreach:** Some shutdown orders have gone beyond suspending internet services by also blocking **websites and mobile applications**. Such actions exceed the powers available under the **2024 Rules**.

8. **Poor Application of Mind:** Some orders blocked outdated platforms such as **Google+, Viber, and WeChat**, even though they were no longer operational in India. This indicates inadequate scrutiny before issuing the orders.
9. **Impact on Constitutional Rights:** Vague and unsupported shutdown orders restrict the **right to freedom of speech and expression**, including the right to access information under **Article 19(1)(a)**. They also conflict with the standards laid down by the Supreme Court in **Anuradha Bhasin (2020)**.

Internet Shutdowns in India: Current Scenario

1. **Global Position:** India continues to record **one of the highest numbers of internet shutdowns** in the world. According to **Access Now**, **65 shutdowns** were recorded across **12 States and Union Territories in 2025**.
2. **State-wise Distribution:** According to the **SFLC Internet Shutdown Tracker**, **Jammu & Kashmir** has recorded about **449 shutdowns since 2012**, followed by **Rajasthan (115)** and **Manipur (62)**.
3. **Recent Trend:** India recorded around **24 internet shutdowns in 2026** up to **22 July**, showing that the use of internet suspensions continues under the new legal framework.
4. **Continuing Concern:** The high number of shutdowns, along with repeated procedural shortcomings, shows that the challenge is no longer the absence of a legal framework but the **effective implementation of the existing safeguards**.

Way Forward

1. **Strict Compliance with the Law:** Authorities should issue internet shutdown orders only after fully satisfying the conditions laid down in the **Telecommunications Act, 2023** and the **2024 Rules**. Every order should contain specific and recorded reasons instead of general statements.
2. **Apply Shutdowns Only Under Prescribed Conditions:** Internet services should be suspended only during a **public emergency** or in the interest of **public safety** and only for the purposes allowed under the law. Authorities should also ensure that all prescribed safeguards are followed before imposing a shutdown.
3. **Strengthen Judicial and Administrative Oversight:** Review mechanisms should carefully examine whether every shutdown order complies with constitutional principles and statutory safeguards. Authorities who fail to follow the **2024 Rules** should also be held accountable.
4. **Improve Transparency and Public Access:** Governments should place all internet shutdown orders on the official website of the State Home Department. The orders should clearly explain the reasons for the suspension and should also be available in the regional language.
5. **Ensure Periodic Review:** Every shutdown order should remain **time-bound** and be reviewed regularly. This can prevent unnecessary continuation of restrictions beyond the period for which they are genuinely required.

6. **Use Shutdowns as the Last Resort:** Internet suspension should be imposed only when no less restrictive measure can achieve the same objective. It should remain an exceptional measure rather than a routine administrative response.

Conclusion

Internet shutdowns are lawful only when they strictly satisfy the conditions laid down under the Telecommunications Act, 2023, the 2024 Rules, and the Anuradha Bhasin (2020) judgment. The real challenge lies in ensuring faithful implementation of these safeguards so that internet suspensions remain an exceptional measure while balancing public safety with constitutional freedoms.

Question for practice:

Discuss the legal framework, constitutional safeguards, and implementation challenges related to internet shutdowns in India.

Source: [The Hindu](#)

India Must Lead in Securing the Strait of Bab el-Mandeb

UPSC Syllabus: Gs Paper 2- International Relation

Introduction

The **Bab el-Mandeb Strait** has emerged as a major maritime security concern after reports that Iran asked the Houthis to close the Strait if the **United States** attacked Iran. Any disruption could threaten **around one-third of India's trade**, disrupt global shipping, and increase economic risks. As uncertainty in the Red Sea grows, the situation highlights the need for **India to play a proactive role in securing this critical maritime route**.

Strategic Importance of the Bab el-Mandeb Strait

1. **Geographical Location:** The **Bab el-Mandeb Strait** lies between **Yemen and the Horn of Africa**. It connects the **Indian Ocean** with the **Red Sea** and the **Suez Canal**, making it a key maritime passage.
2. **Gateway for Global Trade:** Although the Strait is only **about 30 kilometres wide** at its narrowest point, it carries **around 12% of global trade**. It is one of the busiest shipping routes connecting **Asia and Europe**.
3. **Energy Transportation Corridor:** Nearly **11% of global maritime oil trade** and **about 8% of global LNG trade** pass through this route. Any disruption can affect global energy supplies and increase oil prices.
4. **Importance for India:** The Strait is vital for India's trade with Europe and supports **around one-third of India's overall trade**. It also ensures smooth movement of imports, exports and global supply chains.

Evolution of the Red Sea Crisis (2023–25)

1. **Origin of the Crisis:** After the **Gaza conflict** began in **October 2023**, the Houthis declared support for the Palestinians and started launching drones and missiles at Israel. They later expanded their attacks to commercial shipping in the Red Sea.
2. **Escalation of Houthi Attacks:** Between **November 2023 and March 2024**, the Houthis targeted **at least 40 commercial vessels**, claiming they were linked to or bound for Israel. These attacks disrupted one of the world's busiest maritime routes.
3. **International Response:** The **United States** and its partners launched **Operation Prosperity Guardian** in **December 2023** to ensure freedom of navigation in the Red Sea. The **United Nations Security Council Resolution 2722 (2024)** also called for safeguarding shipping, while Israel carried out separate strikes against the Houthis.
4. **India's Maritime Role:** The **Indian Navy** played an active humanitarian role by rescuing the crew of a British tanker that caught fire on **January 26–27, 2024**. India also engaged with Iran to help stop attacks on India-bound ships.
5. **Economic Consequences of the Crisis:** Marine insurers treated the region as highly risky, with **over 90% of global shipping insured by only 12 Protection and Indemnity (P&I) Clubs**. Between **November 2023 and March 2024**, **at least 2,000 ships** avoided the **Suez Canal** and sailed around the **Cape of Good Hope**, delaying supplies and increasing transport costs.
6. **Global Trade Disruptions:** The diversion of ships increased voyage time and freight costs as shipping routes returned to paths used nearly **170 years ago**. Egypt lost **about one-quarter of the Suez Canal's revenue**, while Israel's **Eilat Port** filed for bankruptcy by **July 2024**.

Why is the Strait Facing Renewed Security Risks?

1. **Iran-Houthi Coordination:** Reports indicate that Iran instructed the Houthis to close the **Bab el-Mandeb Strait** if the United States attacked Iran's power plants. Even if this is strategic signalling, it has created serious concerns over the security of the route.
2. **Risk of Simultaneous Maritime Crises:** India is already facing uncertainty around the **Strait of Hormuz**. A fresh disruption in the **Bab el-Mandeb Strait** could place two of the region's most important maritime routes under pressure at the same time.
3. **Growing Uncertainty in the Region:** Unlike 2024, **United States** forces are now more focused on Iran. This creates uncertainty over whether a similar international naval effort will be available to secure the Red Sea.
4. **Changing Diplomatic Environment:** India relied on Iran in 2024 to help stop attacks on India-bound ships. The present situation is different, making such diplomatic engagement more difficult.
5. **Weak International Consensus:** The **United Nations Security Council** is more divided than before, reducing the possibility of approving a coordinated international security mission. At the same time, China is expected to continue protecting its shipping through its own arrangements with the Houthis.

6. **Limits of Military Action:** Experts argue that military strikes alone cannot permanently secure the Strait. Continued instability could also threaten **Saudi Arabia's East-West Pipeline**, reduce flexibility in global oil supplies and increase pressure on major oil-importing countries.

Impact of a Disruption

A. Global Impact

1. **Disruption to Global Shipping:** If ships cannot use the **Bab el-Mandeb Strait**, they must travel around the **Cape of Good Hope**. This adds thousands of kilometres, increases travel time and raises fuel consumption.
2. **Higher Freight and Insurance Costs:** Longer routes and greater security risks increase freight charges and marine insurance premiums. These additional costs affect businesses and global supply chains.
3. **Pressure on Energy Markets:** Any disruption affecting Saudi oil exports through the Red Sea can tighten global oil supplies. This may push international crude oil prices higher.
4. **Reduced Strategic Oil Buffers:** Many countries have already used a large share of their strategic petroleum reserves during recent Middle East conflicts. This leaves less capacity to absorb another major supply shock.

B. Impact on India

1. **Risk to India's Trade:** The **Red Sea-Suez Canal** route is India's main maritime link with Europe. Disruptions can delay cargo movement and affect a significant share of India's international trade.
2. **Impact on Energy Security:** India imports **more than 85% of the crude oil** it consumes. Higher global oil prices can increase India's oil import bill even if most Indian crude does not pass through the Strait.
3. **Challenges for Indian Exports:** Products such as **engineering goods, chemicals, pharmaceuticals, textiles and agricultural products** largely move through the Red Sea route. Longer voyages increase delivery time and transport costs.
4. **Inflationary Pressure:** Rising freight charges, insurance costs and crude oil prices increase business expenses. If these conditions continue, they can add to inflation in the Indian economy.
5. **Concerns for Indian Seafarers:** India has already restricted Indian mariners from ships operating through the **Strait of Hormuz**. Applying similar restrictions to the much busier **Bab el-Mandeb Strait** would be difficult and could affect the safety and welfare of thousands of Indian seafarers.

Challenges in Securing the Strait

1. **Reduced Scope for International Naval Protection:** During the previous Red Sea crisis, the **United States** led a multinational naval mission to protect commercial shipping. The present situation is

different because U.S. military attention is now focused more on Iran, creating uncertainty over a similar response.

2. **Changed India-Iran Diplomatic Context:** In 2024, India engaged directly with Iran to help stop attacks on India-bound ships. The present diplomatic environment is different, making such engagement less certain.
3. **Divisions within the United Nations Security Council:** The **United Nations Security Council (UNSC)** is more divided than before. Even if it supports freedom of navigation, approving a force to enforce that decision is unlikely.
4. **China's Independent Maritime Approach:** China is expected to continue protecting its own shipping through separate understandings with the Houthis. Such unilateral actions may limit the scope for a coordinated international response.
5. **Balancing Maritime Security and Seafarer Welfare:** Restricting Indian mariners from operating through the **Bab el-Mandeb Strait** is not practical because it is one of the world's busiest shipping routes. Such restrictions could affect the safety, employment and welfare of thousands of Indian seafarers.

India's Response: The Way Forward

1. Building Strategic Maritime Partnerships

- **India-France-Japan Naval Cooperation:** India should work with **France** and **Japan** to create a proactive naval partnership for protecting commercial shipping. Both countries depend on safe Red Sea routes and have already conducted naval exercises with India.
- **Using Existing Regional Presence:** France and Japan maintain military bases in **Djibouti** near the Red Sea. Their existing presence can support quicker coordination and help prevent a repeat of the 2024 disruption.

2. Strengthening Regional Diplomacy

- **Engaging Egypt and Saudi Arabia:** India should deepen engagement with **Egypt** and **Saudi Arabia**, as both countries have strong economic interests in keeping the Red Sea open. The Houthi announcement of a **maritime embargo** on Saudi ships shows that regional stakeholders now face greater risks.
- **Coordinating with Regional Partners:** India should work closely with all concerned regional partners while keeping them informed about security efforts. Such cooperation can improve trust and strengthen collective action to secure the route from the **Suez Canal** to the **Bab el-Mandeb Strait**.

3. Creating a Rules-Based Maritime Security Framework

- **Trade Protection Task Force:** India should lead the creation of a **theatre-specific Trade Protection Task Force** instead of a broader military alliance. The task force should focus only on protecting commercial shipping and freedom of navigation.
- **Role of the Information Fusion Centre–Indian Ocean Region (IFC-IOR):** The **Information Fusion Centre–Indian Ocean Region (IFC-IOR)** can provide maritime domain awareness by sharing information on vessel movement and emerging threats. France and Japan can strengthen these efforts through logistics support from their regional bases.
- **Common Rules of Engagement:** Participating navies should agree on common rules for responding to hostile attacks. A coordinated approach will improve operational clarity during maritime emergencies.
- **Security for Commercial Shipping:** The task force should provide escorts and security cover to commercial and civilian vessels moving through the Strait, particularly ships travelling to or from **India, Europe and Japan**. This can reduce risks to trade and shipping.
- **Supporting the SAGAR Vision:** A coordinated maritime effort will demonstrate India's commitment to **Security and Growth for All in the Region (SAGAR)**. It will also reinforce respect for maritime rules and international norms.

Conclusion

The **Bab el-Mandeb Strait** has become a critical maritime chokepoint for global trade and India's economic security. As international coordination becomes more uncertain, India should take the lead in building a **rules-based maritime security framework** with like-minded partners. Such an approach can protect freedom of navigation, secure vital trade routes and strengthen **SAGAR** in the Indian Ocean Region.

Question for practice:

Discuss the strategic importance of the Bab el-Mandeb Strait and explain why India should lead efforts to secure it.

Source: [The Hindu](#)

Pitfalls of FCNR (B) scheme

Source: The post "**Pitfalls of FCNR (B) scheme**" has been created based on "**Pitfalls of FCNR (B) scheme**" published in "Business Line" on 24th July 2026.

UPSC Syllabus: GS-3- Economy

Context: The **Foreign Currency Non-Resident (Bank) [FCNR(B)] Deposit Scheme** aims to attract NRI dollar deposits, strengthen India's foreign exchange reserves, and support the rupee. However, while it provides immediate capital inflows, it may create long-term risks for India's external account and the RBI's balance sheet.

Benefits of the FCNR(B) Scheme

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1. The scheme attracts **NRI dollar deposits**, thereby increasing India's foreign exchange reserves.
2. Higher reserves help reduce pressure on the **rupee** and improve external sector stability.
3. The RBI has removed **interest rate ceilings**, making FCNR(B) deposits more attractive for NRIs.
4. Banks receive additional funding, helping address **domestic deposit shortages**.
5. Every dollar swapped with the RBI provides **rupee liquidity** for domestic lending.
6. The RBI bears the **hedging cost**, protecting banks from exchange rate risk.

Concerns Associated with the Scheme

1. The scheme depends heavily on **leveraged borrowing**, increasing financial risks.
2. Indian banks borrow dollars from **overseas markets**, raising dependence on external funding.
3. Increased foreign borrowing pushes up **global borrowing costs** and compresses bank margins.
4. Banks must generate adequate returns because FCNR(B) deposits offer **higher interest rates** than domestic deposits.
5. Current dollar inflows will become **future dollar outflows** when deposits mature.
6. The RBI implicitly commits to supplying dollars in the future, increasing **contingent foreign currency liabilities**.
7. The RBI's **short dollar forward position** increases, reducing the stock of unencumbered reserves.
8. Effective **reserve adequacy** and **import cover** decline after accounting for forward commitments.
9. Excessive emphasis on exchange rate management may affect the RBI's **monetary policy autonomy**.

Way Forward

1. Use FCNR(B) deposits only as a **temporary crisis-management tool**, not as a regular source of external financing.
2. Encourage **stable long-term capital inflows**, such as FDI, instead of relying on debt-like inflows.
3. Limit excessive **leverage** and strengthen monitoring of overseas borrowing by banks.
4. Maintain **adequate unencumbered foreign exchange reserves** to preserve reserve adequacy.
5. Strengthen **external sector resilience** through export growth, diversification of capital inflows, and prudent reserve management.
6. Ensure that exchange rate management does not compromise the RBI's **monetary policy independence**.

Conclusion: The FCNR(B) scheme offers short-term support to the rupee and foreign exchange reserves, but it also creates future obligations and external vulnerabilities. A balanced approach that combines temporary liquidity measures with stronger external sector fundamentals is essential for sustainable macroeconomic stability.

Question: FCNR(B) deposits can strengthen India's foreign exchange reserves in the short term, but they may also create long-term external sector risks. Discuss.

Source: [Business Line](#)

The right to protest and the lim-its of police power

Source: The post "The right to protest and the lim-its of police power" has been created based on "The right to protest and the lim-its of police power" published in "The Hindu" on 24th July 2026.

UPSC Syllabus: GS-2- Governance

Context: The **right to peaceful protest** is a fundamental democratic right guaranteed under **Article 19(1)(b)** of the Constitution. However, it is **not absolute** and is subject to reasonable restrictions under **Article 19(3)** to balance individual freedoms with public order and security.

Constitutional and Legal Framework Governing Protests

1. **Article 19(1)(b)** guarantees citizens the **right to assemble peacefully and without arms**.
2. **Article 19(3)** permits **reasonable restrictions** in the interests of **public order, sovereignty, and integrity of India**.
3. Under the **Bharatiya Nyaya Sanhita (BNS)**, an assembly of **five or more persons** becomes unlawful only if its **common object** involves criminal force, resisting law, committing an offence, or compelling others through force or threats.
4. Under **Section 163 of the Bharatiya Nagarik Suraksha Sanhita (BNSS)**, authorities may impose **prohibitory orders** to prevent protests in specified areas when necessary to maintain public order.
5. The **BNSS** empowers an **Executive Magistrate or authorised police officer** to order the dispersal of an unlawful assembly or one likely to disturb public peace. Force may be used only if the assembly refuses to **disperse**.

Standards Governing Police Action

1. The **NHRC Manual on Human Rights for Police Officers** states that democratic policing must protect both **public order and citizens' rights**.
2. The **UN Basic Principles on the Use of Force and Firearms** require police action to be **lawful, necessary, and proportionate**.
3. The **Code of Conduct for the Police in India** mandates that police should first use **persuasion, advice, and warnings**, and resort only to the **minimum force necessary**.
4. The **BNSS** requires police officers making arrests to display **clear identification**, though no similar requirement exists for officers engaged in crowd control.

Supreme Court's Stand

1. **Anita Thakur v. State of Jammu & Kashmir (2016)**: Excessive police force violates fundamental rights; police action must be reasonable and accountable.
2. **Mazdoor Kisan Shakti Sangathan v. Union of India (2018)**: Authorities may regulate protests but cannot extinguish the right to protest altogether.
3. **Amit Sahni v. Commissioner of Police (2020)**: The right to dissent is constitutional, but public spaces cannot be occupied indefinitely.

Way Forward

1. Ensure **uniform Standard Operating Procedures (SOPs)** for crowd management based on necessity and proportionality.
2. Strengthen **police accountability** through mandatory identification during crowd-control operations.
3. Promote **dialogue and negotiation** before resorting to coercive measures.
4. Designate **adequate protest sites** while ensuring meaningful public access and visibility.

5. Provide **judicial oversight** and prompt investigation into allegations of excessive police force.
6. Balance **fundamental rights** with **public order** through proportionate and transparent policing.

Conclusion: The right to protest is an essential feature of a constitutional democracy. While the State has a legitimate duty to maintain public order, restrictions and police action must remain lawful, necessary, proportionate, and accountable to preserve both democratic freedoms and the rule of law.

Question: "The right to protest is a cornerstone of democracy, but it is subject to reasonable restrictions." Discuss the constitutional and legal framework governing protests in India.

Source: [The Hindu](#)

Warning Signals for India from NATO's Ankara Summit

UPSC Syllabus: Gs Paper 2- International Relations **and** International organisation.

Introduction

The North Atlantic Treaty Organization (NATO) Ankara Summit (July 7–8, 2026) marked a major shift in the alliance's defence strategy through higher military spending, stronger industrial capacity and long-term military modernisation. These decisions reflect changing global security priorities and are expected to reshape the international defence market. For India, the summit highlights growing challenges in defence procurement and reinforces the need to strengthen self-reliance in critical defence technologies and manufacturing.

Key Outcomes of the Ankara Summit

1. **Collective Defence Commitment:** NATO's **32 member countries** reaffirmed their **ironclad commitment to collective defence under Article 5 of the Washington Treaty**. They also reiterated the importance of maintaining the transatlantic partnership despite differences among members.
2. **Higher Defence Spending:** NATO unanimously endorsed **The Hague Defence Commitment**, under which every member will spend **at least 5% of its GDP on defence by 2035**. This replaces the earlier **2% target** and marks the alliance's biggest defence spending commitment.
3. **Continued Support for Ukraine:** NATO pledged **unwavering support for Ukraine's freedom, sovereignty and territorial integrity**. It also committed to maintaining long-term military assistance as the conflict with Russia continues.
4. **Building a Strong Defence Industrial Base:** NATO decided to develop a **high-technology, high-capacity European Defence Industrial Base (DIB)**. This includes strengthening factories, research laboratories, skilled workers and manufacturing networks needed to sustain military power.
5. **Focus on Implementation:** The summit gave priority to converting political commitments into real military capability. NATO emphasised greater investment, industrial production and innovation to make its defence plans operational.

NATO's Changing Strategic Priorities

1. **Russia's View on NATO Expansion:** Russia considers NATO's eastward expansion into countries such as **Poland, Romania and the Baltic states** as a threat to its security. Moscow believes these regions traditionally belonged to its strategic sphere of influence.
2. **Ukraine Crisis and NATO Enlargement:** Russia's **2022 invasion of Ukraine** was partly driven by fears that Ukraine could join NATO. Although the war blocked Ukraine's entry, it led **Finland and Sweden** to abandon neutrality and become NATO's **31st and 32nd members**.
3. **Changing Security Environment:** NATO argues that it is responding to changing security conditions rather than pursuing expansion. It sees its recent decisions as necessary to protect Europe against emerging threats.
4. **Transformation After the Cold War:** After the **1990–91 end of the Cold War** and the dissolution of the **Warsaw Pact**, NATO shifted from territorial defence to **out-of-area operations**, including missions in the Balkans.
5. **Shift After the 9/11 Attacks:** Following the **2001 terrorist attacks** in the United States, NATO expanded its role by joining the **Global War on Terror**, showing its ability to adapt to new security challenges.
6. **Response to Great-Power Competition:** The growing strategic cooperation between **Russia and China** has created another major shift in NATO's priorities. The alliance is now preparing for long-term competition between major powers.

Why Defence Industrial Capacity Has Become a Priority

1. **Need to Match Commitments with Production:** Higher defence budgets alone cannot strengthen security unless military equipment is produced on time. NATO therefore placed equal importance on expanding industrial capacity.
2. **Europe's Production Challenges:** Even before the **5% defence spending pledge**, Europe's defence industry struggled to increase production. Defence companies such as **MBDA** and **Rheinmetall** warned about shortages in ammunition manufacturing.
3. **Lessons from Recent Conflicts:** The **U.S.-Israel bombing campaign against Iran (Operation Epic Fury)** showed how quickly modern wars consume weapons and ammunition. The United States fired **more than 850 Tomahawk cruise missiles**, while its annual production remains only **85 missiles**, meaning replacement would take almost **ten years**.
4. **Weak Alliance-Wide Coordination:** Many NATO countries possess capable defence industries, but production planning remains poorly coordinated across the alliance. This creates gaps in the supply of important military equipment.
5. **Critical Capability Gaps:** The Ukraine war exposed shortages in **air defence missiles, interceptors, precision-guided munitions and artillery rockets**. These deficiencies have become a major concern for NATO's future military readiness.

6. **Technology as a Force Multiplier:** NATO's modernisation plans also emphasise **artificial intelligence, cyber capabilities, autonomous systems and advanced missile defence**. These technologies are becoming central to future military preparedness.

Global Defence Market: Emerging Challenges

1. **Growing Dependence on the United States:** Without major improvements in Europe's defence industry, higher military spending will increase dependence on American suppliers. **Half of Europe's defence spending during 2022–2024 came from the United States, compared to 28% during 2019–2021.**
2. **Rapid Growth in U.S. Arms Sales:** Notifications for **U.S. Foreign Military Sales** to European customers increased fourfold since **2008**, reaching **\$76 billion in 2024**. This reflects Europe's growing reliance on American defence production.
3. **Rising Global Demand for Weapons:** NATO's large-scale military modernisation has sharply increased global demand for defence equipment. As more countries compete for the same supplies, production pressure is increasing across the defence industry.
4. **Shift Towards a Seller's Market:** The rapid increase in defence procurement is changing the international arms market from a **buyer's market to a seller's market**. Countries purchasing weapons may face longer delivery timelines and greater competition for advanced military systems.

Warning Signals for India

1. **Greater Competition for Defence Imports:** As NATO members increase defence spending and place larger orders, competition for military equipment is rising. This makes it more difficult for major buyers like **India** to obtain timely supplies.
2. **Supply Chain Delays:** The delay by **General Electric Aerospace** in supplying **F-404 fighter jet engines** for India's **Tejas Light Combat Aircraft** programme shows how global demand can affect India's defence preparedness.
3. **Pressure on Advanced Technologies:** Future military competition will increasingly focus on **drones, artificial intelligence, cyber warfare, electronic warfare and resilient networks**. India cannot depend on foreign suppliers that are already meeting their own countries' defence needs.
4. **Global Production Priorities:** Europe is expanding its defence production to meet its own military requirements. This can reduce export availability and increase delivery timelines for countries outside the alliance.
5. **Shift in the Global Arms Market:** NATO's increased defence spending is changing the international arms market from a **buyer's market to a seller's market**, making defence procurement more difficult for large importers like India.

Way Forward for India's Defence Preparedness

1. **Strengthen Defence Self-Reliance:** India should reduce dependence on foreign suppliers by building stronger domestic defence manufacturing capabilities. This will make defence preparedness more reliable during global crises.
2. **Develop Emerging Defence Technologies:** India should invest in **artificial intelligence, drones, cyber warfare, electronic warfare and resilient networks** to meet the demands of future warfare.
3. **Expand Indigenous Defence Industrial Capacity:** India should strengthen its defence industrial base by improving manufacturing capacity, technology development and skilled manpower for long-term military readiness.
4. **Build Resilient Supply Chains:** India should ensure that critical defence programmes are supported by reliable domestic production. Stronger supply chains will reduce disruptions caused by global conflicts and rising international demand.
5. **Focus on Long-Term Capability Building:** Defence preparedness should combine industrial capacity, technological innovation and sustained investment so that India can meet its future security needs independently.

Conclusion

The Ankara Summit reflects a long-term shift towards higher defence spending, stronger industrial capacity and advanced military technologies. As global competition for defence equipment increases, India cannot rely heavily on external suppliers. Strengthening indigenous defence manufacturing, developing emerging technologies and building resilient supply chains will be essential to ensure long-term defence preparedness and strategic autonomy.

Question for practice:

Discuss the key outcomes of NATO's Ankara Summit and examine the warning signals it presents for India's defence preparedness and self-reliance.

Source: [The Hindu](#)

Reclaiming Footpaths in Indian Cities

Introduction

Indian cities have become increasingly vehicle-centric, leaving pedestrians to face unsafe roads, broken footpaths and frequent encroachments. Poor walking infrastructure affects road safety, public health and inclusive urban mobility. Recognising these concerns, the Supreme Court in *Maniyar Iliyas @ Shaik Riyaz v. P. Ayyappan (2026)* held that walking on safe footpaths is a Fundamental Right under Articles 19(1)(d) and 21, making pedestrian safety a constitutional responsibility.

Supreme Court's Recognition of the Right to Walk

1. **Recognition as a Fundamental Right:** The Supreme Court held that walking on safe footpaths is protected under **Article 19(1)(d)** (freedom of movement) and **Article 21** (right to life). It recognised pedestrians as equal users of public roads.

2. **Judgment Triggered by a Preventable Tragedy:** The ruling followed the death of a five-year-old child who was hit by a tanker while walking to school because there was no footpath or pedestrian crossing. The Court observed that such accidents will continue unless roads are redesigned for safe pedestrian movement.
3. **Limits of Existing Law:** The Court noted that the **Motor Vehicles Act, 1988** mainly protects motor vehicles and does not recognise a fundamental Right to Walk. This has weakened the legal protection available to pedestrians.
4. **Shift from Vehicle-Centric Planning:** The Court criticised the focus on flyovers, expressways and wide roads while ignoring pedestrians. It stressed that footpaths should be continuous, safe, accessible, walkable and free from obstruction.
5. **Pedestrians Have Equal Rights on Roads:** The judgment rejected the idea that roads belong mainly to motor vehicles. It affirmed that walking is a constitutional right and not a privilege granted by the State.

Importance of Walkable Cities

1. **Protection of Life and Human Dignity:** Safe footpaths reduce the risk of accidents and allow citizens to move with dignity. Pedestrian safety therefore becomes a constitutional responsibility rather than only a traffic issue.
2. **Improving Public Health:** Walking is one of the simplest and lowest-cost ways to reduce diabetes, hypertension, fatty liver disease and obesity. Safe footpaths make regular physical activity possible in daily life.
3. **Addressing Physical Inactivity:** According to the **WHO India Physical Activity Profile 2024**, **49.4%** of adults, **57.2%** of women and **74%** of children aged **11–17 years** do not meet the recommended level of physical activity. **WHO** recommends at least **150 minutes** of moderate-intensity physical activity every week for adults.
4. **Safer and Inclusive Mobility:** Functional footpaths help children reach schools safely, support older persons, improve mobility for women and remove barriers for persons with disabilities. They make public infrastructure accessible to all sections of society.
5. **Road Safety Benefits:** According to **Road Accidents in India 2024**, pedestrians and two-wheeler riders together accounted for nearly **67%** of road fatalities, with around **1.28 lakh deaths**. **NCRB 2024** also reported that these vulnerable groups accounted for at least **60%** of road deaths.
6. **Environmental and Economic Benefits:** A **2019 Chennai study** found that **9% to 27%** of people shifted from motorised transport to walking after new footpaths were built. This reduced greenhouse gas emissions, particulate pollution and transport costs while promoting healthier lifestyles.
7. **Strengthening Public Spaces:** Well-planned footpaths are more than walking paths. They function as shared public spaces that improve everyday mobility and make cities more people-friendly.

Challenges to Pedestrian Rights

1. **Poor Pedestrian Infrastructure:** Many footpaths are broken, dug up, blocked or end abruptly, forcing pedestrians onto busy roads. The absence of safe crossings further increases accident risks.
2. **Vehicle-Centric Urban Planning:** Urban development has largely focused on roads for motor vehicles. This approach has treated pedestrians as obstacles instead of rightful road users.
3. **Encroachments and Competing Uses:** Footpaths are often occupied by parked vehicles, street vendors, debris, open drains and utility structures. At the same time, many homeless people use pavements for shelter, creating competing claims over limited public space.
4. **Accessibility Barriers:** Poles, trees, potholes and uneven pavements make movement difficult for persons with disabilities, older persons and children. Many footpaths also lack ramps and barrier-free access.
5. **Unsafe Walking Environment:** Many citizens prefer to walk or use public transport, but the absence of continuous, shaded and well-maintained footpaths discourages active mobility and increases dependence on private vehicles.

Measures to Reclaim Footpaths

1. **Strengthen Legal Enforcement:** Constitutional recognition alone is not enough. State Governments and municipal bodies should frame enforceable rules and ensure regular maintenance of safe, obstruction-free footpaths.
2. **Develop Pedestrian-First Infrastructure:** Every road project should include continuous, shaded, well-lit and barrier-free footpaths with safe pedestrian crossings. Footpaths should be wide enough for two people or a wheelchair and include ramps near bus stops.
3. **Ensure Fair Management of Public Spaces:** Cities should allocate separate spaces for walking, street vending, parking and public utilities. This protects pedestrians while addressing the livelihood needs of street vendors.
4. **Improve Urban Design:** Roads near schools, hospitals, markets, bus stops and metro stations should receive priority. Trees, benches, public toilets and lighting should be treated as essential pedestrian infrastructure.
5. **Launch a National Active Mobility Mission:** India should link urban development, transport, health and education to promote walking. Cities should be assessed by the number of safe walking kilometres created rather than only the length of roads or flyovers.
6. **Strengthen Municipal Accountability:** Municipal Commissioners should publish ward-level footpath maps and annual audits of encroachment-free footpaths to improve transparency and implementation.
7. **Promote Active Mobility and Citizen Participation:** Citizens should walk for short trips, combine walking with public transport and form community walking groups. Schools, employers and doctors should also encourage walking as part of daily life.

Conclusion

The Supreme Court has transformed safe walking from a municipal concern into a Fundamental Right. Realising this right now requires better planning, effective enforcement and active civic participation. Safe, accessible and encroachment-free footpaths will strengthen public health, road safety and inclusive mobility. The quality

of footpaths should become an important measure of constitutional governance and people-centred urban development.

Question for practice:

Examine the significance of reclaiming footpaths in Indian cities for ensuring pedestrian rights, public health and inclusive urban development.

Source: [The Hindu](#)

Fire Safety as a Critical Component of Urban Governance

Syllabus- GS 1- Urbanization, their problems and their remedies

Introduction

A series of recent fire incidents in hospitals, hotels, coaching centres, and high-rise buildings has highlighted the growing vulnerability of Indian cities to fire hazards. These incidents reflect deeper structural issues such as rapid and unplanned urbanisation, outdated regulations, and weak enforcement of safety norms. As India urbanises rapidly, fire safety has emerged as a critical component of urban governance, encompassing urban planning, infrastructure, institutional accountability, and disaster risk reduction

1. Structural Drivers of Fire Risk

- **Fast-paced urbanisation:** According to NITI Aayog, India's urban population is growing at roughly 2.7–2.8% annually, while urban built-up area is expanding at nearly double that rate - a mismatch that strains existing safety infrastructure.
- **Mixed land use:** Commercial coaching hubs, chemical storage units, and small manufacturing units increasingly operate within dense residential areas, placing combustible materials close to large populations.
- **Vertical growth outpacing capability:** The boom in high-rises to maximise real estate value has outstripped the reach of conventional firefighting equipment such as hydraulic ladders and high-pressure hoses.
- **Urban bottlenecks:** Narrow roads, encroachments, and tangled overhead wiring routinely delay fire tenders from reaching incident sites during the crucial first minutes of a fire.

2. Governance and Accountability Gaps

Fire safety responsibility in India is fragmented across multiple actors:

- Fire No-Objection Certificates (NOCs) are treated as a **one-time administrative formality** for occupancy certificates, not an ongoing safety commitment.
- Building bye-law violations are often treated as minor civil infractions rather than serious offences.
- Electricity distribution companies (DISCOMs) frequently release power connections without mandatory structural load audits of internal wiring.

This fragmentation among urban local bodies, electrical inspectors, and law enforcement produces a reactive, post-disaster response system rather than proactive risk reduction.

3. Constitutional and Regulatory Framework

- Fire services fall under the **State List**, further decentralised to Urban Local Bodies (ULBs) under **Article 243W (Twelfth Schedule)**.
- This results in no uniform national fire safety regime — regulations, budgets, and enforcement capacity vary widely across states.
- The **National Building Code (NBC), 2016**, issued by the Bureau of Indian Standards, sets technical benchmarks for fire compartmentation and egress (escape routes) based on occupancy load, but these remain **advisory** until adopted into local building laws.
- The **15th Finance Commission** allocated ₹5,000 crore under the NDRF for the **Scheme for Expansion and Modernisation of Fire Services (SEMFSS)**, on a 75:25 cost-sharing basis (90:10 for North-Eastern and Himalayan states).
- The Ministry of Health and Family Welfare has issued model guidelines mandating evacuation infrastructure and smoke management systems in high-risk zones like ICUs and neonatal units.

4. Core Implementation Gaps

- **No periodic safety audits:** Absence of a statutory requirement for audits after the initial NOC allows unsafe structural modifications and non-functional fire equipment to go unnoticed.
- **Electrical faults:** NCRB data shows short circuits cause about 17% of fire deaths nationally, and over 75% of urban structural fires in metros like Delhi and Mumbai. Rising power loads (ACs, appliances) without wiring upgrades or Arc Fault Circuit Interrupters (AFCIs) compound the risk.
- **Combustible building materials:** Widespread use of Aluminium Composite Panel (ACP) cladding — largely unregulated — allows small fires to bypass compartmentation and engulf entire high-rises rapidly.

Way Forward

- **Institutional strengthening:** Upgrade state fire services into independent statutory authorities empowered to conduct unannounced audits, issue binding compliance notices, and seal non-compliant structures.
- **Market-based compliance:** Link commercial property insurance renewals to third-party fire safety audits, using premium incentives to encourage compliance.
- **Technology integration:** Mandate AFCIs in building codes and integrate IoT-enabled smoke detectors with city Integrated Command and Control Centres (ICCCs) under the Smart Cities Mission for real-time alerts.
- **Capacity building:** Establish micro-fire stations in congested commercial zones and conduct mandatory fire drills in hospitals, schools, and coaching institutes to prevent panic-driven casualties like stampedes.
- **Alignment with global frameworks:** Integrate fire risk governance with Priorities 2 and 3 of the **Sendai Framework for Disaster Risk Reduction (2015–2030)** — strengthening disaster risk governance and investing in risk reduction.

Conclusion

Fire safety in India sits at the intersection of urban planning, constitutional federalism, and administrative accountability. As the country pursues the vision of Viksit Bharat by 2047, ensuring fire-safe cities is not merely a technical requirement but a marker of genuine urban development. A shift from reactive, certificate-based compliance to proactive, technology-enabled, and audit-driven governance is essential to prevent avoidable urban tragedies and safeguard the lives of citizens.

Question for Practice- Fire safety has emerged as a critical challenge in India's urban governance. Discuss the constitutional and institutional gaps in the existing fire safety framework and suggest measures to strengthen urban fire governance.

Source- [IE](#)

India's Move Towards Polymer Currency

Syllabus- GS 2/GS 3- Government policies and interventions for development/Indian Economy and issues relating to planning, mobilization of resources

Introduction

The Reserve Bank of India, through its note-printing subsidiary Bharatiya Reserve Bank Note Mudran Pvt. Ltd. (BRBNMPL), has floated a global Expression of Interest (EOI) for procuring Biaxially Oriented Polypropylene (BOPP) substrate embedded with advanced security features. This marks the strongest step yet toward introducing plastic currency in India since the idea was first proposed in 2009. As India seeks to modernise its physical currency ecosystem alongside the rapid rise of digital payments, the move raises important questions of cost, durability, security, sustainability, and self-reliance.

Opportunities of Polymer Currency

1. Greater Durability- Polymer notes last 2.5 to 4 times longer than conventional cotton-paper currency. Since lower denominations such as ₹10 and ₹20 see the heaviest circulation and wear, these are likely to be introduced first, easing pressure under the RBI's Clean Note Policy.

2. Stronger Counterfeit Resistance- Polymer substrates allow security features that are far harder to replicate than those on paper notes — transparent windows, metallic numerals, magnetic pseudo-threads, holograms, shadow images, iridescent patterns, and tactile markings for the visually impaired.

3. Improved Currency Management- Although polymer notes have higher initial production costs, their longer lifespan reduces expenditure on printing, transport, storage, and disposal. The RBI spends around ₹5,000 crore annually on currency management, while India destroys 20–24 billion soiled notes every year—costs that polymer notes could significantly reduce.

4. Environmental Gains- A TERI study commissioned by the RBI found that the longer lifespan of polymer notes could lower the need for repeated manufacturing and transport, giving them a smaller overall lifecycle carbon footprint compared to paper notes. Used polymer notes can also be recycled into other plastic products.

5. Global Precedent- Australia was the first country to fully adopt polymer currency, and nearly 60 countries - including Canada, the United Kingdom, New Zealand, Mexico, Brazil, Saudi Arabia, Romania, and Barbados - now use polymer notes in some form. Their experience broadly points to improved durability, enhanced security, and lower lifecycle costs despite higher initial production expenses.

Challenges in Adopting Polymer Currency

1. Higher Production Costs- Polymer notes cost 30–60% more to manufacture than paper notes, and in some countries, low-value polymer notes have cost as much as 20–24% of their face value to produce. Transitioning would also require recalibrating ATMs, note-sorting machines, vending machines, and cash-handling infrastructure nationwide.

2. Environmental Trade-offs- Since polymer notes are made from polypropylene, a petroleum-based material, their initial production carries a higher carbon footprint, demands specialised recycling facilities, and deepens dependence on fossil-fuel-derived raw materials.

3. Import Dependence- India currently imports around one-fifth of its polypropylene requirement, exposing note production to volatility in global crude oil prices — a risk heightened by geopolitical tensions in West Asia. This is despite domestic capacity expansion being planned by companies such as Reliance Industries and Indian Oil Corporation.

4. Relevance in a Digitalising Economy- Despite UPI processing over 24,000 crore transactions annually (about 85% of retail digital payments), currency in circulation has exceeded ₹41 lakh crore in 2025–26, with the currency-to-GDP ratio remaining above 11%. This reflects sustained cash demand due to the large informal economy, uneven digital infrastructure, and the continued importance of cash for financial inclusion and small-value transactions.

5. Past Setbacks- The RBI proposed polymer ₹10 notes in 2009, followed by a pilot in 2012 across five cities. However, the project was shelved due to technical challenges and the disruption caused by the 2016 demonetisation and currency redesign. The proposal has been revived in 2026 through BRBNMPL's global EOI, with field trials planned for ₹10 and ₹20 notes.

Way Forward

- Launch limited pilot projects for lower-denomination notes before scaling to a nationwide rollout.
- Promote domestic manufacturing of polymer substrates to reduce import dependence.
- Undertake thorough cost-benefit analysis and environmental impact assessments before wider adoption.
- Upgrade ATM and cash-handling infrastructure in a phased, non-disruptive manner.
- Allow paper and polymer notes to circulate together during the transition, avoiding any demonetisation-like shock.
- Align the currency reform with India's broader goals of Digital India, financial inclusion, and efficient cash management.

Conclusion

India's shift toward polymer currency reflects an effort to modernise its cash ecosystem through greater durability, tighter security, and improved lifecycle efficiency. Yet, concerns around cost, environmental impact, and import dependence call for a calibrated, evidence-based approach rather than a hurried transition. The objective should not be to simply replace paper with plastic, but to build a currency system that is cost-effective, secure, and sustainable - one suited to India's evolving and increasingly digital payments landscape.

Question for Practice- Discuss the opportunities and challenges associated with the introduction of polymer currency in India. How can the transition be made cost-effective and sustainable?

Source- [IE](#)

India's Foreign Policy Must Look Seaward

UPSC Syllabus: Gs Paper 2- Effect of policies and politics of developed and developing countries on India's interests,

Indian diaspora.

Introduction

India has emerged as one of the world's largest suppliers of seafarers, with **about 3.2 lakh seafarers (June 2025)** and **over 12% of the global workforce**. However, Indian seafarers work across multiple countries, legal systems and conflict zones, making responsibility for their safety, legal protection and repatriation difficult to determine. As maritime security risks increase, protecting Indian seafarers has become an important dimension of India's maritime governance and foreign policy.

Why Indian Seafarers Need Greater Foreign Policy Attention

1. **India's Expanding Maritime Workforce:** India had **about 3.2 lakh seafarers in June 2025**, nearly three times its strength in 2014. The **2026 Seafarer Workforce Report** ranks India **second after the Philippines**, contributing **just over 12% of the global seafaring workforce**.
2. **Global Nature of Seafaring Employment:** An Indian seafarer may be recruited in India, employed by a foreign company, work on a vessel registered in another country and operate in different international waters. This makes responsibility for their safety and rescue difficult to identify.
3. **Mobile Workplace Creates Protection Challenges:** Seafarers work abroad without permanently living abroad, and their workplace constantly changes. During one voyage, they may pass through several jurisdictions, while Indian missions may not know their location until an emergency occurs.
4. **Foreign Policy Beyond Shipping:** Seafarers are often treated as a shipping issue during normal times and become a consular issue only after a crisis. India needs to view them as an important foreign policy responsibility even before emergencies arise.
5. **Human Cost of Maritime Conflicts:** Since **February 2026**, **14 Indians** have lost their lives in attacks linked to the West Asia conflict, including **at least eight commercial seafarers**.
6. **Growing Threats Across Sea Routes:** Maritime risks now extend beyond West Asia. Ships face **missiles, drones and mines** in the **Black Sea and Red Sea**, while piracy and hostage-taking continue around the **Gulf of Aden and West Africa**.

Challenges in Protecting Indian Seafarers

1. **Fragmented Responsibility During Emergencies:** Responsibility is divided among the **flag State, shipowner, insurer, port authority and Indian mission**. This often creates confusion over who should rescue, assist or repatriate Indian seafarers.
2. **Crew Abandonment Remains a Serious Concern:** According to the **International Transport Workers' Federation**, **1,125 Indian seafarers were abandoned in 2025**, the highest number reported for any country. Such cases often move between several authorities before any action is taken.
3. **Territorial Consular System Has Limitations:** Indian missions are organised according to national territories, while seafarers move continuously across international waters. This limits timely consular support during maritime emergencies.

4. **Technology Has Limited Value During Emergencies:** Ship-tracking systems and monitoring dashboards can locate a vessel, but they cannot confirm the crew's condition, compel shipowners or flag States to act, or secure access to detained seafarers. Continuous tracking of every vessel is also not practical.
5. **Weak Enforcement by Flag States:** Some flag States register ships quickly but fail to enforce the **Maritime Labour Convention** when wages stop, crews are abandoned or repatriation becomes necessary.
6. **Limited Protection in Maritime Agreements:** India's bilateral maritime agreements mainly recognise Indian certificates and improve employment opportunities. They provide little support for **legal assistance, consular access and repatriation**.

Government Initiatives and Recent Measures

1. **Seafarer First Response:** Following recent attacks in West Asia, the Government launched the **Seafarer First** response to account for every Indian seafarer in the region, irrespective of the vessel's flag.
2. **Monitoring Dashboard and Family Support:** A dedicated dashboard tracks ships, security threats and crew welfare. Every affected family is also assigned a liaison officer for regular communication.
3. **Advisory for High-Risk Waters:** On 15 July, the Government advised shipowners, managers and recruitment agencies not to deploy Indian seafarers on vessels passing through the **Strait of Hormuz** until further orders. Similar arrangements should continue whenever any maritime region becomes high-risk.
4. **Continuous Security Monitoring:** The **Ministry of Ports, Shipping and Waterways, Directorate General of Shipping, Ministry of External Affairs, Indian Navy**, Indian missions and other stakeholders are jointly monitoring the security situation in the **Strait of Hormuz, Gulf of Oman and nearby waters**.
5. **Maritime Security Protocols:** Indian and foreign-flagged vessels carrying Indian seafarers have been advised to maintain the highest level of vigilance, follow maritime security protocols and continuously monitor official advisories.
6. **Emergency Response Mechanism:** Stakeholders have been directed to report every incident involving Indian seafarers immediately. Dedicated communication channels and round-the-clock emergency response systems remain operational to support seafarers and their families.
7. **Assistance After the MT Settebello Attack:** After the missile attack on **MT Settebello**, the Government coordinated with all concerned authorities, shipowners and recruitment agencies. The rescued crew were assisted, the deceased were identified for repatriation and **₹10 lakh** assistance was announced for each affected family through the **Seafarers Welfare Fund Society**.

What More Should India Do?

1. **Standing Maritime Consular Protocol:** India should establish a permanent maritime consular protocol that clearly identifies the authority responsible from the moment a distress signal is received. Whenever the system is activated, recruitment agencies should also provide updated crew details and voyage information received from shipowners and managers.
2. **Dedicated Maritime Officers in Indian Missions:** Indian missions in major shipping centres should appoint designated officers familiar with port authorities, hospitals, insurers and local lawyers. Such networks should be built before emergencies occur.
3. **Ensure Compliance by Flag States:** Some flag States register ships quickly but fail to enforce the **Maritime Labour Convention** when wages stop, crews are abandoned or repatriation is delayed. India should press them to fulfil these obligations.
4. **Strengthen Bilateral Maritime Agreements:** Existing maritime agreements mainly recognise Indian certificates and improve employment opportunities. They should also include **legal assistance, consular access and repatriation** for Indian seafarers.
5. **Promote Common International Standards:** India, the **Philippines** and **Indonesia** face similar challenges as major suppliers of global seafarers. They should jointly push for common standards on **repatriation, detention and deployment in conflict zones** through the **International Maritime Organization** and the **International Labour Organization**.
6. **Protect Commercial Shipping from Conflict:** Civilian crew members should not become targets because of the cargo carried or disputes involving shipowners. India should oppose attacks on commercial shipping, regardless of who carries them out.
7. **Strengthen Seafarers' Right to Information:** Before signing a contract, every seafarer should know the vessel's real owner, trading route, sanctions status, insurance validity and any previous record of crew abandonment. This information should be shared before employment.
8. **Protect the Right to Refuse High-Risk Deployment:** If a vessel is later directed to enter a designated high-risk region, seafarers should have the right to refuse deployment and return home without any penalty.
9. **Increase Recruitment Agency Accountability:** The **Directorate General of Shipping** has prohibited licensed recruitment agencies from placing Indian seafarers on **366 vessels** linked to crew abandonment unless prescribed conditions are met. Agencies should disclose this information before recruitment and face penalties for violations.

Conclusion

India's maritime ambitions should be measured not only by ports, shipping corridors and naval strength but also by how effectively it protects its seafarers. Indian citizens working at sea deserve timely protection and support wherever they are employed. A robust maritime foreign policy should ensure **clear accountability, timely consular assistance, effective international cooperation and stronger legal safeguards**. This will help safeguard Indian seafarers regardless of the flag under which their vessel sails.

Question for practice:

Discuss the challenges faced by Indian seafarers and examine the measures needed to strengthen their protection through India's foreign policy.

Source: [The Hindu](#)

India's Prudent Tax Administration

UPSC Syllabus: Gs Paper 3- Indian economy and Infrastructure

Introduction

India's tax administration has evolved from ancient principles of public revenue to a modern, technology-driven and information-based system. Continuous tax reforms have simplified laws, improved transparency and strengthened compliance. The **Income-tax Act, 2025**, which came into force from **FY 2026-27**, marks a significant milestone by replacing a six-decade-old law. Supported by digital governance and information-driven administration, it lays the foundation for a prudent, transparent and taxpayer-centric tax system.

Evolution of India's Tax Administration

1. **Ancient Taxation Tradition:** India has a long history of taxation. **Kautilya's Arthashastra** recognised public revenue as the foundation of good governance and viewed taxation as an important tool for the welfare of the state.
2. **Modern Income Tax System:** **Sir James Wilson** introduced income tax in British India on **24 July 1860**. Every **Income Tax Day** commemorates this milestone and reflects the continuous evolution of India's direct tax system.
3. **Taxation after Independence:** After **1947**, taxation became an important instrument to finance development, maintain fiscal prudence and support economic stability during challenges such as inflation, balance-of-payments crises and the **COVID-19 pandemic**.
4. **High-tax and Regulated System:** During the **1960s and 1970s**, India followed a highly regulated economic model with very high personal income tax rates. Heavy taxation and extensive controls encouraged tax evasion and made the tax system less efficient.
5. **Beginning of Tax Reforms:** During the **1980s**, the government started simplifying tax laws, reducing excessive tax rates and broadening the tax base. These reforms also focused on improving tax administration and compliance.
6. **Economic Liberalisation:** The **1991 economic reforms** reduced personal and corporate tax rates and lowered customs duties to promote trade and economic growth. The focus shifted towards a simpler and more competitive tax system.
7. **Digital Transformation of Tax Administration:** From the **2000s onwards**, reforms such as **Permanent Account Number (PAN)**, electronic filing, digital tax services and **Value Added Tax (VAT)** modernised tax administration. In the **2020s**, greater use of data analytics, Artificial Intelligence, pre-filled income tax returns and online grievance systems further strengthened digital compliance.

Modern Tax Reforms

1. **Income-tax Act, 2025:** The **Income-tax Act, 2025**, effective from **FY 2026–27**, replaced a law that had governed direct taxation for more than six decades. It reflects the need to modernise tax laws in line with a rapidly changing economy.
2. **Simplified Legal Framework:** The new Act uses simpler language, adopts a **single Tax Year**, reorganises provisions that had become fragmented over time and introduces concepts suited to an increasingly digital economy.
3. **Better Compliance and Lower Disputes:** A clearer and more accessible law makes compliance easier for taxpayers, professionals and administrators. It also helps reduce disputes and improves the efficiency of tax administration.
4. **Legislative Reform is the Beginning:** Rewriting the law alone is not enough. The next stage of tax administration depends on making better use of information and technology to improve compliance and governance.

Information-driven Tax Administration

1. **Shift in Tax Administration:** Earlier, tax authorities depended mainly on taxpayer disclosures, returns, audits and assessments because taxpayers possessed most financial informations.
2. **Digital Financial Records:** Banks, employers, securities markets and property registries generate digital records that create a comprehensive financial trail. This enables tax authorities to make better use of existing information.
3. **Global Tax Cooperation:** More than **100 jurisdictions** exchange financial information through the **OECD Common Reporting Standard (CRS)**, while the **OECD Pillar Two** framework addresses profit shifting.
4. **India's Opportunity:** India is well placed to lead this transition because it has integrated identity, financial reporting and tax administration at an unmatched scale.

India's Digital Tax Ecosystem

1. **Integrated Tax Information System:** India has developed one of the world's most comprehensive tax information ecosystems by integrating identity, financial reporting and tax administration.
2. **Connected Digital Platforms:** **PAN-Aadhaar linkage**, the **Annual Information Statement (AIS)**, **Goods and Services Tax (GST)** integration and **Tax Deducted at Source (TDS)** reporting create a comprehensive financial profile for taxpayers.
3. **Technology-driven Tax Services:** Digital taxpayer services, online filing, pre-filled income tax returns and electronic verification have made tax compliance simpler and more convenient.
4. **Faceless Tax Administration:** **Faceless assessment** and **faceless verification** reduce direct interaction between taxpayers and tax officials. This promotes greater transparency, fairness and efficiency.
5. **Foundation for Better Governance:** Together with the **Income-tax Act, 2025**, India's digital ecosystem supports a tax administration that is simpler, more efficient and more responsive.

Future Priorities for Prudent Tax Administration

1. **Technology-enabled Compliance:** Technology should increasingly help taxpayers comply correctly the first time instead of only detecting errors after they occur..
2. **Responsible Use of Artificial Intelligence:** Artificial Intelligence offers significant opportunities for tax administration, but it should support human judgment rather than replace it.
3. **Transparency and Accountability:** Decisions affecting taxpayers should remain transparent, explainable and subject to appropriate review. Strong data security and accountability are equally important.
4. **Trust and Voluntary Compliance:** Future reforms should build institutions that inspire public trust and encourage voluntary compliance rather than relying only on enforcement.
5. **Towards Viksit Bharat @ 2047:** Guided by **Kautilya's** principle that "**Kosha Mulo Danda**" (Revenue is the foundation of good governance), India should use responsible technology and trusted institutions to build a modern and globally respected tax system.

Conclusion

India's tax administration has evolved from a traditional revenue collection system into a transparent, technology-driven and information-based framework. The **Income-tax Act, 2025**, digital reforms and integrated tax ecosystem have strengthened efficiency, compliance and taxpayer services. Going forward, balanced enforcement, responsible use of technology, public trust and voluntary compliance will be essential to build a prudent and globally respected tax administration that supports **Viksit Bharat @ 2047**.

Question for practice:

Examine how tax reforms and digital governance have transformed India's tax administration into a prudent and taxpayer-centric system.

Source: [Businessline](#)

India's Mobile Phone Manufacturing Story

Source: The post "India's Mobile Phone Manufacturing Story" has been created based on "Factory reset" published in "Business Line" on 27th July 2026.

UPSC Syllabus: GS-3 - Economy

Context: India's mobile phone manufacturing sector has witnessed remarkable growth under the Production Linked Incentive (PLI) scheme. However, domestic value addition has remained low because most high-value components are still imported. The new **₹62,500-crore Mobile Phone Manufacturing Scheme (MPMS)** aims to increase localization, promote component manufacturing, and strengthen India's position in the global electronics value chain.

Achievements of India's Mobile Phone Manufacturing Sector

1. India has increased the number of mobile phone manufacturing units from **2 in 2014 to more than 300** today.
2. Mobile phone production has grown from **₹18,000 crore to nearly ₹5.5 lakh crore**.
3. India now produces around **325–330 million mobile handsets annually**.
4. Domestic manufacturing now meets almost the **entire demand for mobile phones** in the country.
5. Mobile phone exports have increased from **₹1,566 crore to over ₹2.6 lakh crore**, making smartphones one of India's fastest-growing export categories.
6. The **PLI scheme has played a major role** in transforming India into a global mobile phone assembly hub.

Limitations of the PLI Scheme

1. India has largely specialized in the **assembly of mobile phones rather than manufacturing high-value components**.
2. Most components such as **chipsets, displays, camera modules, printed circuit boards, and other electronic parts** continue to be imported.
3. Domestic value addition has remained **around 20%**, despite the rapid growth in production.
4. India's electronics import bill has crossed **\$110 billion in FY26** because of continued dependence on imported components.
5. The PLI scheme mainly rewarded **incremental production instead of encouraging deeper localization**.

Ways in which the Mobile Phone Manufacturing Scheme (MPMS) Improves Upon PLI

1. The MPMS shifts the policy focus from increasing production to **enhancing domestic value addition**.
2. Manufacturers will receive **incentives ranging from 2.25% to 5% on eligible sales**.
3. The scheme provides **additional incentives for sourcing components and sub-assemblies from domestic manufacturers**.
4. Companies investing in **product design and research and development (R&D)** will receive extra incentives.
5. The scheme encourages India to become a center for **innovation as well as manufacturing**.

The Mobile Phone Manufacturing Scheme Has Been Introduced at an Opportune Time

1. Global supply chains have changed because of the **COVID-19 pandemic, geopolitical tensions, and trade restrictions**.
2. Many multinational companies are adopting **China+1 and friend-shoring strategies** to diversify their manufacturing bases.
3. India has already emerged as a preferred destination for **final assembly of mobile phones**.
4. The next stage of growth requires the **development of a strong domestic supplier ecosystem**.

Role of MPMS Along with ISM 2.0

1. The MPMS will complement the proposed **₹1.25 lakh crore India Semiconductor Mission (ISM) 2.0**.
2. Both initiatives aim to promote **component manufacturing along with handset production**.
3. These initiatives can significantly **reduce India's dependence on imported electronic components**.

Challenges Ahead

1. Financial incentives alone cannot create a globally competitive electronics manufacturing ecosystem.
2. Component manufacturing requires **reliable infrastructure** for efficient production.
3. The sector also requires **affordable logistics** to reduce production costs.
4. India needs to develop a **skilled workforce** to support advanced manufacturing.
5. A **predictable regulatory environment** is essential to attract long-term investments.
6. Private companies must view these schemes as an opportunity for **long-term investment rather than short-term subsidies**.

Lesson from India's Automobile Industry

1. India's automobile industry became globally competitive because it developed **strong supplier networks around manufacturing clusters**.
2. The mobile phone industry must also build a **dense domestic supplier ecosystem** to move beyond assembly and increase value addition.

Way Forward

1. Ensure the effective implementation of MPMS and ISM 2.0 to strengthen the electronics ecosystem.
2. Promote domestic manufacturing of high-value components to increase value addition.
3. Improve infrastructure, logistics, and power supply to enhance competitiveness.
4. Strengthen skill development for advanced electronics manufacturing.
5. Maintain a stable and predictable regulatory environment to attract long-term investments.
6. Encourage R&D and product design to transform India into an innovation-driven manufacturing hub.
7. Develop manufacturing clusters with strong supplier networks to support component manufacturing.
8. Encourage long-term private investment beyond government incentives.

Conclusion: The Mobile Phone Manufacturing Scheme marks a significant policy shift from promoting assembly to encouraging localization, component manufacturing, and innovation. If it is supported by strong infrastructure, skilled manpower, regulatory stability, and long-term private investment, the scheme can help India reduce import dependence and emerge as a major global electronics manufacturing hub.

Question: "The Production Linked Incentive (PLI) scheme transformed India into a major mobile phone assembly hub, but deeper localization remains a challenge." Discuss how the Mobile Phone Manufacturing Scheme (MPMS) seeks to address this gap.

Source: [Business line](#)

Missing the Second Demographic Bonus

Source: The post "Missing: Second demographic bonus" has been created based on "Missing: Second demographic bonus" published in "New Indian Express" on 27th July 2026.

UPSC Syllabus: GS-3 - Economy

Context: India is experiencing a demographic dividend as the share of its working-age population continues to rise. However, household savings have declined to their lowest level in nearly two decades despite the growing working-age population. This indicates that India is yet to realize the **second demographic dividend**, which refers to wealth accumulation through savings and investments.

About Second Demographic Dividend

1. The **first demographic dividend** refers to higher economic growth resulting from a rising share of the working-age population.
2. The **second demographic dividend** refers to the increase in household savings and wealth accumulation as people save during their working years to support themselves in old age.
3. The second demographic dividend depends on strong institutions such as pensions, formal financial systems, and efficient labour markets.

Factors Responsible for the Decline in India's Household Savings Despite a Rising Working-Age Population

1. Weak Employment and Income Generation

- a. A large share of the working-age population is either unemployed, underemployed, or engaged in informal employment.
- b. Many workers earn low and unstable incomes, leaving little surplus for savings.
- c. Therefore, a growing working-age population has not translated into a proportionately larger saving population.

2. Low Female Labour Force Participation

- a. Female labour force participation remains low despite recent improvements.
- b. A significant proportion of women continue to work in the informal sector with limited and irregular incomes.
- c. As a result, nearly half of the potential workforce is unable to contribute fully to household savings.

3. Weak Social Security and Pension Coverage

- a. Formal pension coverage is available to only a small proportion of Indian workers.
- b. Social security arrangements for workers in the informal sector remain inadequate.
- c. Households lack confidence in retirement security, limiting their ability to build long-term financial assets.

4. Decline of Traditional Family Support Systems

- a. Smaller and geographically dispersed families have weakened the traditional system of children supporting elderly parents.
- b. India is ageing faster than it is developing institutional mechanisms for old-age security.

5. Rising Consumption and Household Borrowing

- a. Household borrowing through unsecured retail loans, credit cards, and consumer durable loans has increased significantly.
- b. Consumption expenditure has grown faster than household savings.
- c. A young population is increasingly financing present consumption instead of accumulating wealth.

6. Rising Debt Burden

- a. Household debt has increased while financial asset accumulation has remained slow.
- b. This has reduced the capacity of households to save for future needs.

International Comparison

1. Countries such as **Japan, South Korea, and China** recorded high household savings when their working-age populations peaked.
2. These countries converted their demographic dividend into a large pool of domestic capital through strong institutions and formal employment.
3. In contrast, India's household savings are declining even as its working-age population continues to increase.

Implications

1. Lower household savings reduce the availability of domestic capital for investment.
2. Greater dependence on government borrowing and external sources of finance may increase economic vulnerabilities.
3. India may fail to fully utilize its demographic dividend before the population begins to age.

Measures to Realize the Second Demographic Dividend

1. The government should promote quality employment and increase incomes through productive job creation.
2. Female labour force participation should be increased by improving employment opportunities and working conditions.
3. Pension coverage and social security should be expanded, especially for workers in the informal sector.
4. The formal financial system should be strengthened to encourage long-term household savings.
5. Household credit should be regulated to discourage excessive consumption-driven borrowing.
6. Policies should promote financial literacy and long-term investment habits among households.

Conclusion: India's demographic dividend alone cannot guarantee higher savings and long-term economic growth. The country must complement its favourable age structure with productive employment, strong financial institutions, wider social security, and greater financial inclusion. Only then can India convert its demographic advantage into a sustainable **second demographic dividend** that supports long-term investment and economic development.

Question: India's demographic dividend has not translated into a 'second demographic dividend' in the form of higher household savings. Examine the reasons and suggest measures to realize the second demographic dividend.

Source: [New Indian Express](#)

Why is China's AI Push Gaining Ground?

UPSC Syllabus: Gs Paper 2 - international relations And Gs paper 3- science and technology

Introduction

China has rapidly emerged as a strong competitor in the global artificial intelligence (AI) race. Despite restrictions on advanced chips, it has narrowed the gap with the United States by focusing on **open-source AI**

models, cost-efficient innovation, strong government support, and a broad AI ecosystem. This approach has increased the global adoption of Chinese AI models and reshaped competition in the AI sector.

China's Rise as a Global AI Power

1. **Rapid Catch-up with the U.S.:** China has reduced the gap with the United States in advanced AI from several years to only a few months. Models such as **Kimi K3** now perform close to, and in some benchmarks even match, leading U.S. models like **Claude**.
2. **Competitive AI Models:** Chinese companies have released several high-performing models, including **DeepSeek, Kimi K3, Qwen and MiMo**. These models are increasingly used by businesses, government services and developers.
3. **Performance at Lower Cost:** **Kimi K3**, a **2.8 trillion-parameter** model, delivers strong performance while using much less computing power. It provides advanced AI capabilities at a much lower cost than many frontier U.S. models.
4. **From Follower to Challenger:** China has moved beyond copying foreign technology and is now producing globally competitive AI systems. Its AI companies are challenging the long-standing dominance of leading U.S. firms.
5. **Growing Global Recognition:** Chinese AI models have been downloaded **millions of times** from platforms such as **Hugging Face**. Developers are adapting them for specialised and local use cases it.

Key Drivers Behind China's AI Success

1. **Open-Source AI Strategy:** Many Chinese AI companies release **open-source or open-weight models**, allowing businesses and developers to download, modify and run them on their own systems. This has accelerated innovation and wider adoption.
2. **Long-Term Government Support:** China has consistently invested in AI research and encouraged both research laboratories and large technology companies to develop AI models. This long-term planning has strengthened the country's AI ecosystem.
3. **Strong Industry Participation:** Major companies such as **Alibaba, Tencent and Baidu**, along with startups like **DeepSeek** and **Moonshot AI**, are developing different types of AI models. Their combined efforts have created a diverse and competitive AI ecosystem.
4. **Efficient Use of Limited Resources:** Although China faces restrictions on advanced GPUs, it has compensated by using abundant electricity and a larger number of less advanced chips. This has enabled the development of powerful AI models despite hardware constraints.
5. **Focus on Practical AI:** Chinese firms have developed both large frontier models and lightweight models that can run on personal hardware. This makes AI more accessible for developers with different computing capacities.
6. **Protection of Domestic AI Industry:** The Chinese government has taken steps to prevent leading AI firms from becoming part of the U.S.-led AI ecosystem. It has also supported domestic companies in building independent technological capabilities.

7. **Global Developer Feedback:** Open-source AI models allow developers across the world to test, improve and adapt them for specialised applications. This has strengthened their quality and adoption.

China's AI Model vs U.S. AI Model

1. **Open Models vs Closed Models:** Many Chinese AI models are openly available, while leading U.S. companies such as **OpenAI, Anthropic and most of Google's AI models** mainly use proprietary systems. Open models allow wider participation by developers and businesses.
2. **Different Business Approaches:** U.S. companies largely earn revenue through subscriptions, licensing and paid AI services. Chinese companies have focused on expanding adoption by making many of their AI models openly available.
3. **Lower Deployment Cost:** Open-source models can be hosted by different infrastructure providers, increasing competition and improving cost predictability. This makes advanced AI more affordable for many users.
4. **Broad Developer Participation:** Developers can freely customise Chinese open models for specific needs. This has encouraged continuous testing, improvement and wider use by the global AI community.
5. **Different Innovation Priorities:** The United States continues to invest heavily in frontier AI to maintain technological leadership. China has focused on making advanced AI practical, affordable and widely deployable without sacrificing competitive performance.

Challenges and Emerging Concerns

1. **U.S. Chip Restrictions:** China still faces restrictions on accessing advanced GPUs needed for training and running AI models. These controls increase the cost and difficulty of building frontier AI systems.
2. **AI Distillation Allegations:** **OpenAI** and **Anthropic** have accused Chinese laboratories of using their models to train Chinese AI systems through **AI distillation**. China has rejected these allegations and described the U.S. response as technological bullying.
3. **Policy and Regulatory Response:** China's AI progress has prompted the United States to reconsider its earlier **laissez-faire** AI policy. Washington is exploring stricter measures, including possible sanctions and restrictions on Chinese AI models.
4. **High Cost of Open-Source AI:** Developing advanced open-source AI models requires significant computing power and financial resources. This makes it difficult to sustain frequent releases of high-quality open models.
5. **Sustainability of the Open-Source Model:** As development costs rise, companies may reduce the number of freely available models. **Alibaba** has already begun developing proprietary AI models that operate only on its own infrastructure.

6. **Trust and Geopolitical Concerns:** Chinese AI models continue to face a trust deficit in several countries, particularly **India**, because of broader geopolitical concerns. This affects their acceptance despite their growing technical capability.
7. **Strategic Competition in Frontier AI:** The United States continues to prioritise leadership in frontier AI because it considers the most advanced AI systems essential for future **military, economic and scientific** advantages.

Global Implications and India's Response

1. **Reshaping Global AI Competition:** China's progress has intensified competition with the United States and challenged the long-standing dominance of Western AI companies. The global AI race is now becoming much more balanced.
2. **Pressure on U.S. AI Companies:** Chinese AI models deliver comparable performance at a much lower cost. This could challenge the premium pricing strategy followed by several U.S. frontier AI companies once current subsidies decline.
3. **Growing Global Adoption:** Open-source Chinese models allow businesses and infrastructure providers to build customised AI services without depending on proprietary platforms. This is increasing their global reach and practical use.
4. **India's Balanced Approach:** India skipped the **Shanghai World AI Conference** despite hosting the **AI Impact Summit** earlier. At the same time, it continues to promote domestic AI firms such as **Sarvam AI** while not discouraging the use of open-source AI models.
5. **Investment and Market Competition:** Chinese AI firms such as **DeepSeek** and **Moonshot AI** are planning public listings, while major U.S. AI firms are also preparing IPOs. Investors are increasingly viewing China as a lower-cost alternative in the global AI market.

Conclusion

China's AI progress shows how **long-term planning, open-source innovation and efficient use of resources** can rapidly narrow the technology gap. While challenges such as trust, geopolitics and the future of open-source models remain, China has become a major AI competitor. The next phase of the AI race will be shaped by **innovation, commercial models and AI's expansion from the digital world to the physical world.**

Question for practice:

Examine how China's AI strategy has enabled it to rapidly emerge as a major challenger to the United States in the global artificial intelligence race.

Source: [The Hindu](#)

BitChat and its Blocking by India

UPSC Syllabus: Gs Paper 2- e-Governance And Gs Paper 3- Science and technology

Introduction

The **Union Ministry of Home Affairs** directed GitHub to remove repositories hosting **BitChat**, a decentralised Bluetooth-based messaging application developed by **Jack Dorsey**. The order cited concerns related to **public order, national security and law enforcement**. Critics argued that the government relied on **Section 79(3)(b)** instead of the prescribed blocking procedure under the IT Act. They also raised concerns over **constitutional safeguards, digital rights and transparency in government action**.

What is BitChat?

1. **Decentralised Messaging Platform:** BitChat is a **peer-to-peer messaging application** that works through **Bluetooth mesh networks**. It does not require the internet, central servers or phone numbers.
2. **Bluetooth Mesh Technology:** Every nearby device acts as both a client and a server. Messages move from one device to another through multiple hops, allowing communication over a wider area.
3. **No Central Infrastructure:** Unlike traditional messaging apps, BitChat does not depend on central servers that can be monitored, censored or shut down. It creates temporary communication networks among nearby devices.
4. **Privacy and Network Independence:** The platform is designed to provide **censorship resistance, surveillance resistance and infrastructure independence**. It continues to function during **internet shutdowns, protests, natural disasters and in areas with poor connectivity**.
5. **Anonymous Communication:** Users can communicate without mandatory registration, phone number verification or centralised logging of messages, making communication more private.

Government's Blocking Order

1. **Direction to GitHub:** On 23 July, the **Indian Cyber Crime Coordination Centre (I4C)** directed GitHub to disable access to **three BitChat repositories**, including the Android application and release files, within **three hours**.
2. **Legal Consequences for Non-Compliance:** The notice warned that failure to comply could lead to the loss of **safe harbour protection** and even **criminal prosecution**.
3. **Concerns over Law Enforcement:** The government stated that BitChat's decentralised design makes **lawful interception, attribution and investigation** by law enforcement agencies very difficult.
4. **Risk During Public Order Situations:** The order argued that the application could help users **avoid lawful surveillance** and bypass restrictions during **internet shutdowns, riots, organised crime, terrorism and public order situations**.
5. **Possible Security Threats:** According to the order, decentralised communication platforms could be exploited for **unlawful assemblies, violent protests, misinformation, radicalisation, criminal conspiracies and activities affecting the sovereignty, integrity and security of India**.

Legal Framework Governing Online Content Blocking in India

1. **Notice Under Section 79(3)(b):** The notice was issued under **Section 79(3)(b) of the IT Act, 2000** read with **Rule 3(1)(d) of the IT Rules, 2021**. It directed GitHub to disable access to the repositories.
2. **Safe Harbour Protection:** Section 79 allows intermediaries to enjoy **safe harbour protection**. This protection may be lost if they fail to remove unlawful material after receiving a valid government notice.
3. **Duty to Preserve Evidence:** The notice required GitHub to remove access **without destroying evidence**, so that future investigation is not affected.
4. **Section 79 Is Not a Blocking Power:** The provision deals with intermediary liability but does not itself authorise blocking of online content.
5. **Blocking Under Section 69A:** Public access to online information is generally blocked under **Section 69A of the IT Act** and the **Blocking Rules, 2009**.
6. **Procedural Safeguards:** Section 69A requires a hearing, written reasons and review before issuing blocking directions.
7. **Grounds for Blocking:** The law permits blocking only on grounds such as **national security, public order and prevention of incitement to cognisable offences**.

Major Concerns

1. **No Unlawful Content Identified:** The **Internet Freedom Foundation (IFF)** argued that the repositories do not contain any identified unlawful content. The order is based only on the application's possible misuse.
2. **Technology Rather Than Content Targeted:** IFF stated that the order objects to BitChat's ability to work during **internet shutdowns**, instead of pointing to any illegal communication.
3. **Challenge to the Legal Basis:** IFF argued that using **Section 79(3)(b)** for blocking bypasses the safeguards available under **Section 69A**.
4. **Questionable Legal References:** IFF also questioned the notice for referring to **Section 43 of the IT Act** along with conspiracy and abetment provisions of the **Bharatiya Nyaya Sanhita, 2023** against a platform that only hosts code.
5. **Three-Hour Deadline:** The notice required compliance within **three hours**, giving very limited time for legal examination or judicial recourse.
6. **Proportionality Concern:** IFF argued that the order fails the proportionality standard laid down by the Supreme Court in **Anuradha Bhasin (2020)**.
7. **Effectiveness of the Takedown:** Removing GitHub repositories does not remove BitChat from devices where it is already installed. The decentralised mesh network can continue functioning without central servers.

8. **Transparency and Accountability:** Critics demanded publication of takedown orders, internet suspension orders and the legal basis for deploying signal jammers to improve public accountability.

Way Forward

1. **Need for Legal Clarity:** The dispute raises questions about whether **Section 79(3)(b)** can be used for blocking or whether such actions should always follow the procedure under **Section 69A**.
2. **Publication of Blocking Orders:** IFF demanded that all takedown orders and the reasons behind them should be made public to improve accountability and legal scrutiny.
3. **Ensure Proportionate Restrictions:** Restrictions on communication platforms should remain limited to what is necessary. They should satisfy the **proportionality principle** laid down by the Supreme Court in **Anuradha Bhasin (2020)**.
4. **Improve Transparency:** Blocking directions, internet suspension orders and the recorded reasons should be made public to strengthen accountability and allow legal scrutiny.
5. **Balance Security and Rights:** Regulation of decentralised communication platforms should protect **national security and public order** while respecting **constitutional safeguards and lawful communication**.

Conclusion

The **BitChat** controversy highlights the challenge of balancing **national security, public order and constitutional freedoms**. It also raises questions about the legal procedure followed for online blocking. The issue underlines the need for **transparent government action and proportionate restrictions**. At the same time, it emphasises protecting **effective law enforcement and fundamental rights** within the existing legal framework.

Question for practice:

Discuss the features of BitChat and examine the legal and constitutional issues arising from the Government of India's decision to block its repositories.

Source: [The Hindu](#)

India's policy on urea

Source: The post "**India's Policy on Urea Production**" has been created based on "**India's policy on urea**" published in "The Hindu" on 28th July 2026.

UPSC Syllabus: GS 3 – Agriculture

Context: The Union Cabinet has approved the **National Investment Policy for Urea (NIPU), 2026** to promote self-reliance in urea production amid concerns over fertilizer shortages, import dependence, and rising demand.

Evolution of India's Urea Production Policy

1. The Government introduced the **National Investment Policy (NIP)** for the urea sector in **2012**, followed by modifications in **2013** and **October 2014** to encourage fresh investments.
2. Under the **2012 policy**, **six new urea plants** were established, including **four through Joint Venture Companies (JVCs)** of **nominated Public Sector Undertakings (PSUs)** and **two by private companies**.
3. India currently has **33 operational urea manufacturing units** with a total reassessed/installed capacity of **269.42 Lakh Metric Tonnes (LMT)**.
4. The Government amended the policy again in **May 2015** for **25 existing gas-based urea units** to increase domestic production.
5. The 2015 amendment resulted in an **additional annual production of 20–25 LMT of urea**.
6. India's urea production increased from **225 LMT in 2014–15** to **314.07 LMT in 2023–24**.
7. During **2025–26**, the country produced **293.30 LMT of urea**.
8. Despite higher domestic production, **India continues to import urea to bridge the gap between domestic demand and production**.

Key Features of the National Investment Policy for Urea (NIPU), 2026

1. The policy aims to **promote self-reliance in urea production** by encouraging investments in **new gas-based urea manufacturing units**.
2. The policy **separates fixed and variable costs** to improve transparency in determining production costs.
3. The policy introduces a **Return on Equity (RoE) band** with a **minimum of 12% and a maximum of 16%** to ensure financial viability for investors.
4. The policy reduces **foreign exchange risk** by converting the **fixed cost component into Indian Rupees after four years** based on prevailing exchange rates.

India's Fertilizer Subsidy

1. The total fertilizer subsidy increased from **₹1,77,162.06 crore in 2024–25** to **₹2,17,281.10 crore in 2025–26**.
2. The **urea subsidy** increased from **₹1,24,319.50 crore in 2024–25** to **₹1,42,175.74 crore in 2025–26**.
3. The subsidy for **phosphorus and potassium fertilizers** stood at **₹74,999.99 crore in 2025–26**, compared to **₹52,810 crore in 2024–25**.
4. The Government also provided **₹105.37 crore in 2025–26** and **₹32.56 crore in 2024–25** for promoting **organic fertilizers**.

Availability of Urea

1. The country's **kharif 2026 urea requirement** is estimated at **370.84 LMT**, while the **available quantity is 432.44 LMT**.
2. Out of the available quantity, **381.59 LMT will be sold through the Direct Benefit Transfer (DBT) system**.
3. Under the DBT system, **subsidized fertilizers are sold through Point of Sale (PoS) devices**, and beneficiaries are identified using **Aadhaar Card, Kisan Credit Card (KCC), Voter Identity Card, or other approved identity documents**.
4. During **2024–25**, the country's urea requirement was **364.01 LMT**, while availability stood at **443.83 LMT**.

Challenges in India's Urea Sector

1. **India continues to depend on urea imports** because domestic production remains insufficient to meet the growing demand.
2. **The fertilizer subsidy burden is increasing**, with the total fertilizer subsidy rising to **₹2,17,281.10 crore in 2025-26**, placing significant pressure on the government's finances.
3. **Overuse of urea and other chemical fertilizers** has led to concerns about nutrient imbalance, declining soil health, and environmental sustainability.
4. **Global geopolitical developments**, such as the **West Asia situation**, can disrupt fertilizer supply chains and create concerns about fertilizer availability during the agricultural season.
5. **Climate variability**, including **El Niño-induced higher demand**, increases pressure on fertilizer availability and distribution.
6. **Dependence on gas-based urea production** exposes the sector to fluctuations in natural gas prices and foreign exchange risks, although NIPU 2026 seeks to mitigate part of this risk.
7. **The adoption of Nano Urea remains limited** because of concerns regarding its scientific efficacy and field performance.
8. **Ensuring balanced fertilizer use remains a challenge**, despite government efforts to promote **Integrated Nutrient Management (INM)** and organic fertilizers.
9. **Efficient implementation of due investment and timely establishment of new gas-based urea plants** will be essential for achieving the objective of self-reliance in urea production.

Measures to Promote Balanced Fertilizer Use

1. The Government promotes **Integrated Nutrient Management (INM)** to ensure balanced and efficient use of fertilizers.
2. INM encourages the **scientific integration of organic sources, chemical fertilizers, and biological inputs** for sustainable nutrient management.
3. The objective of INM is to **meet crop nutrient requirements economically while maintaining long-term soil fertility**.
4. The Government has also promoted **Nano Urea**, although its adoption remains limited because of concerns regarding its scientific efficacy and field performance.

Conclusion: The **National Investment Policy for Urea, 2026** seeks to enhance domestic urea production, reduce import dependence, improve transparency in the sector, and strengthen India's fertilizer security while promoting sustainable nutrient management practices.

Question: Discuss the evolution of India's urea production policy. What are the key features of the National Investment Policy for Urea (NIPU), 2026?

Source: [The Hindu](#)

US Generic Drug Tariff Threat: Implications for Indian Pharma

Source: The post “US Generic Drug Tariff Threat: Implications for Indian Pharma” has been created based on “US Generic Drug Tariff Threat: Implications for Indian Pharma” published in “Indian Express” on 28th July 2026.

UPSC Syllabus: GS 3 – Economy

Context: U.S.A President Donald Trump has proposed imposing **100% tariffs on generic drugs after two years and 200% thereafter** to encourage pharmaceutical manufacturing in the U.S.A. Although such tariff proposals have largely remained unimplemented so far, they have created uncertainty for Indian pharmaceutical exporters, as the **U.S.A is India's largest pharmaceutical export market**.

Importance of the Proposed Tariff for India's Pharmaceutical Sector

1. **U.S.A accounts for nearly 40% of India's pharmaceutical exports**, making it the country's largest export destination for medicines.
2. Around **90% of India's pharmaceutical exports to the U.S.A consist of generic medicines**, making Indian companies particularly vulnerable to any tariff on generics.
3. In **2025, India exported pharmaceutical products worth \$9.7 billion** to the U.S.A.
4. The **U.S.A imported pharmaceutical products worth \$213 billion in 2025**, including **\$94.1 billion worth of finished medicines**, which includes generic drugs.
5. Any tariff on generic medicines could affect the competitiveness of Indian pharmaceutical companies in their largest overseas market.

Reasons behind Trump's tariff proposal

1. The proposed tariffs are intended to **encourage pharmaceutical companies to establish manufacturing facilities in the U.S.A**.
2. Trump has stated that companies that do not manufacture in the U.S.A would face financial penalties through higher tariffs.
3. Similar tariff threats have previously been issued to attract investment into the U.S.A rather than being immediately implemented.
4. So far, **pharmaceutical products have largely remained exempt** from tariff measures introduced under various U.S.A trade laws.

Impact on Indian Pharmaceutical Companies

1. Tariff uncertainty is encouraging **greater outbound investment by Indian pharmaceutical companies in the U.S.A**.
2. **Sun Pharmaceutical Industries** announced the acquisition of **Organon & Co.** for **\$11.8 billion**, making it the largest overseas acquisition by an Indian pharmaceutical company.
3. According to a **Grant Thornton** report, **April 2026 recorded 103 mergers and acquisitions worth \$18.7 billion**, the highest monthly deal value since May 2022, driven largely by outbound transactions.
4. India's outbound pharmaceutical investment to the U.S.A increased to **\$4.08 billion in FY26**, compared with **\$3.44 billion in FY25** and **\$2.44 billion in FY24**.
5. Several Indian pharmaceutical companies already operate **FDA-approved manufacturing facilities in the U.S.A**, including Sun Pharma, Zydus Lifesciences, Lupin, Aurobindo Pharma, Cipla and Dr. Reddy's Laboratories.
6. **Cipla** is expanding manufacturing capacity in **Massachusetts and New York**.
7. **Dr. Reddy's Laboratories** has indicated its willingness to expand U.S.A manufacturing if commercially viable.

Challenges in Relocating Generic Drug Manufacturing

1. **Generic medicines operate on extremely thin profit margins**, making large-scale relocation of production financially difficult.
2. Generic drug manufacturing depends on **global supply chains**, particularly for **Active Pharmaceutical Ingredients (APIs)**.
3. A significant share of APIs continues to be sourced from **India and China**.
4. Building an entirely domestic U.S.A pharmaceutical supply chain would require **substantial investment**.
5. Increased domestic manufacturing in the U.S.A is likely to **raise medicine prices** for consumers.

Challenges for India

1. Continued tariff uncertainty may encourage **greater relocation of investment and manufacturing** from India to the U.S.A.
2. Higher tariffs, if implemented, could reduce the **price competitiveness of Indian generic medicines** in the U.S.A market.
3. Indian pharmaceutical companies may face **higher compliance and investment costs** to establish manufacturing facilities in the U.S.A.
4. Greater overseas investment could potentially reduce future manufacturing expansion within India.

Way Forward

1. **Indian pharmaceutical companies should diversify their export markets** to reduce excessive dependence on the U.S.A, which currently accounts for nearly 40% of India's pharmaceutical exports.
2. **The Government should strengthen domestic pharmaceutical manufacturing**, particularly the production of Active Pharmaceutical Ingredients (APIs), to reduce supply chain vulnerabilities and improve global competitiveness.
3. **Indian companies should adopt a balanced investment strategy** by expanding manufacturing in the U.S.A where commercially viable while continuing to strengthen their manufacturing base in India.
4. **India should continue engaging with the U.S.A through bilateral trade dialogue** to ensure stable market access for affordable generic medicines and avoid disruptive tariff measures.
5. **The pharmaceutical industry should focus on improving innovation, operational efficiency, and cost competitiveness** to remain resilient against changing global trade policies and maintain its leadership in generic drug exports.

Conclusion: Although the proposed tariffs have not yet been implemented, they signal a policy push toward reshoring pharmaceutical manufacturing in the U.S.A India's pharmaceutical industry must balance continued access to its largest export market with diversification of markets, strengthening domestic manufacturing, and strategic overseas investments to remain globally competitive.

Question: Examine the implications of the proposed U.S.A tariff on generic drugs for India's pharmaceutical sector.

Source: [Indian Express](#)

AI's Next Test — Reaching India's Informal Women Worker

UPSC Syllabus: Gs Paper 2- science and technology And Paper 1- society

Introduction

India's journey towards **Viksit Bharat 2047** depends on whether the benefits of **Artificial Intelligence (AI)** reach everyone or remain limited to a few. AI is changing agriculture, healthcare, logistics and financial services. Its impact will depend on how these systems are designed, whose data they use, and whether they meet the needs of women working in the informal economy. Inclusive AI can strengthen growth, while exclusion can deepen existing inequalities.

AI and India's Informal Women Workers

1. **Informal employment dominates women's work:** According to the **ILO (2018)**, around **82% of working women in India** are employed in the informal sector. They work in agriculture, home-based production, domestic services and micro-enterprises.
2. **Women form a major agricultural workforce:** The **PLFS 2023-24** reports that **76.9% of rural women** are engaged in agriculture. This makes them one of the largest groups that can be affected by AI-based agricultural technologies.
3. **AI inclusion is an economic issue:** The impact of AI on women is mainly about **economic inclusion**. Whether women can access AI tools and opportunities will determine if AI reduces or widens existing inequalities.
4. **Design of AI will decide inclusiveness:** The benefits of AI depend on **who the systems are built for, whose data they use and which languages they support**. These choices will determine whether AI promotes inclusive growth or strengthens structural inequalities.
5. **Gender-responsive AI is essential:** **UN Women** has warned that AI can reinforce stereotypes, discrimination and digital violence if gender concerns are ignored in its design, testing and oversight.

Opportunities Created by AI

1. **Improving agricultural productivity:** AI can support farmers through precision agriculture, real-time crop health advice, better input use and improved market access. These services can help women farmers improve their productivity and income.
2. **Evidence of positive impact:** A **2024 Farmer.Chat study** conducted across **12 States** found that **61% of women users** reported an improved quality of life within **45 days**. Their engagement with the platform was **two to three times higher** than that of men.
3. **Importance of inclusive design:** Better outcomes were seen when AI tools considered women's language needs, land access patterns, mobility limits and livelihood requirements. This shows that technology becomes more useful when it is designed around users' realities.
4. **Opportunity beyond agriculture:** AI has the potential to support women involved in home-based work, self-help groups and other informal activities by improving access to information and economic opportunities.
5. **Expanding access to AI:** India's growing AI ecosystem creates an opportunity to extend digital tools to women who have traditionally remained outside formal technological systems.

Challenges and Risks

1. **Unequal access to AI benefits:** AI may increase inequality if its benefits remain concentrated among people who already enjoy better digital access and resources instead of reaching informal women workers.
2. **Bias in AI systems:** AI systems may produce unfair outcomes when they are trained on limited data or ignore women's realities. This can reinforce existing gender bias rather than reducing it.
3. **Risk of job displacement:** According to the **ILO**, women are **three times more likely** than men to lose their jobs because of AI-driven automation. This makes gender equality an important concern in AI adoption.
4. **Clerical jobs face the highest exposure:** Women are heavily represented in clerical and administrative work such as typing, bookkeeping and data entry. These repetitive and rule-based jobs are among the most vulnerable to generative AI.
5. **AI is reaching skilled occupations:** AI is also affecting software, finance and media jobs because these sectors depend heavily on digital work. This shows that automation is expanding beyond routine tasks.
6. **Technology-facilitated violence reduces participation:** Deepfakes, online harassment and non-consensual images discourage women from participating in digital spaces. Fear of such abuse can limit their economic opportunities.
7. **Digital access alone is not enough:** Simply providing AI tools cannot ensure inclusion. Without suitable skills, language support and safe digital environments, many women may still remain excluded.
8. **Need for timely policy action:** The growing impact of AI on women's employment highlights the need for governments, employers and labour organisations to prepare workers for technological change while protecting inclusion and equity.

Policy and Governance Priorities

1. **India AI Governance Guidelines (2025):** The **India AI Governance Guidelines (2025)** introduced **seven guiding principles**, including **fairness and equity**, to promote responsible and inclusive AI governance.
2. **IndiaAI Mission:** The **IndiaAI Mission** supports AI development, deployment and capacity building to expand AI adoption across different sectors.
3. **BHASHINI (BHASHa Interface for India):** The **BHASHINI** platform promotes multilingual access to AI and digital services, making AI more accessible to people speaking different Indian languages.
4. **Information Technology (Amendment) Rules, 2021:** The **Information Technology (Amendment) Rules, 2021** require grievance redressal mechanisms for harmful online content to improve protection against digital abuse.

5. **MeitY's proposed labelling of AI-generated synthetic content:** MeitY's proposed mandatory labelling of AI-generated synthetic content aims to improve transparency and reduce the misuse of AI-generated content.
6. **National Commission for Women's review of cyber laws:** The National Commission for Women's review of cyber laws provides recommendations to strengthen legal protection against technology-facilitated gender-based violence.
7. **Growing AI ecosystem:** The India AI Impact Summit 2026 showed that India's AI ambitions are supported by a growing ecosystem of practitioners, innovators and civil society.

Way Forward

1. **Gender-responsive AI design:** AI systems should be designed, tested and monitored by considering women's language, mobility, land access and livelihood needs so that technology expands opportunities instead of reinforcing inequalities.
2. **AI literacy through existing government programmes:** AI literacy should be integrated into **Deen Dayal Antyodaya Yojana–National Rural Livelihoods Mission (DAY-NRLM), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), Skill India and Mission Shakti's Sakhi network**. Training should match women's time constraints, literacy levels and livelihood needs.
3. **Inclusive AI deployment:** AI benefits should reach **women farmers, home-based workers, self-help group members and platform workers** through inclusive design, procurement standards and outcome-based implementation.
4. **Strengthen digital safety:** Legal safeguards and grievance redressal mechanisms should be effectively implemented in regional languages to protect women from deepfakes, online harassment and other forms of technology-facilitated violence.
5. **Prepare workers for AI-driven changes:** Governments, employers and labour organisations should work together to reduce job displacement risks and ensure that AI improves job quality, productivity and inclusion without widening gender inequalities.

Conclusion

India's AI success should be measured not only by technological progress but also by its ability to create **meaningful economic opportunities for women in informal work**. Gender-responsive governance, inclusive AI design, digital safety and skill development can ensure that AI supports **Viksit Bharat 2047** by making its productivity gains accessible to those who have traditionally remained excluded.

Question for practice:

Examine the role of Artificial Intelligence (AI) in promoting economic inclusion of India's informal women workers and discuss the policy measures needed to ensure gender-responsive AI governance.

Source: [The Hindu](#)

India's Road to Cleaner Mobility – Beyond CAFE Norms

UPSC Syllabus: Gs Paper 3- Infrastructure And Environment

Introduction

India is revising its Corporate Average Fuel Efficiency (CAFE) framework at a time when the global automobile industry is shifting from internal combustion engine (ICE) vehicles to cleaner mobility technologies. The proposed CAFE 2027 regulations seek to improve fuel efficiency through multiple technology pathways while reducing dependence on imported crude oil. The central debate is whether the new framework will simply ease regulatory compliance or drive a faster transition towards clean mobility, energy security and lower transport-sector emissions.

Evolution of Fuel Economy Regulations

1. **Purpose of CAFE Standards:** CAFE standards regulate the **sales-weighted average fuel consumption** of a manufacturer's passenger vehicle fleet instead of individual vehicle models. This encourages improvements across the entire fleet rather than a few efficient vehicles.
2. **Beginning of Fuel-Efficiency Rules:** The **United States introduced CAFE standards in 1975** after the **1973 Arab oil embargo** to reduce oil dependence and protect consumers from rising fuel costs. The regulations encouraged manufacturers to produce smaller and more fuel-efficient vehicles.
3. **Expansion to Climate Objectives:** From the **1990s**, fuel-efficiency regulations also became a tool to reduce **greenhouse-gas emissions**. Technology-neutral rules encouraged innovation in **hybrid vehicles and electric vehicles (EVs)** along with better engine efficiency.
4. **China's Regulatory Shift:** China introduced mandatory fuel-consumption standards in **2004**, initially regulating individual vehicle models based on weight. As oil imports and urban pollution increased, the standards became progressively stricter.
5. **Dual Credit System:** China adopted the **Dual Credit System** in **2018**, requiring manufacturers to meet both **Corporate Average Fuel Consumption (CAFC)** standards and **New Energy Vehicle (NEV)** credit requirements. Meeting fuel-efficiency targets alone is insufficient because manufacturers must also generate adequate NEV credits through EVs or plug-in hybrids.
6. **Credit-Based Incentive for Electrification:** Manufacturers that fail to generate enough **NEV credits** must purchase them from companies with surplus EV production. This creates a market that rewards faster electrification and discourages delays in adopting cleaner vehicles.
7. **Global Progress in EV Adoption:** According to the **International Energy Agency's Global EV Outlook 2026**, China sold **more than 13 million electric cars in 2025**, representing **almost 55%** of new passenger vehicle sales. Comparable figures were **about 27% in the European Union**, **nearly 10% in the United States** and **around 4% in India**, showing India's relatively slower transition.

India's Proposed CAFE 2027 Framework

1. **New Regulatory Direction:** The **Ministry of Power** has proposed **CAFE 2027** for **M1 passenger vehicles** from **1 April 2027**. The framework redesigns fuel-efficiency regulation to reflect the growing use of cleaner vehicle technologies and alternative fuels.

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2. **Technology-Neutral Framework:** The proposal moves away from treating conventional **ICE vehicles** as the regulatory benchmark. Manufacturers can improve compliance through **EVs, hybrids, flex-fuel vehicles, CNG and other approved low-carbon technologies**.
3. **Fleet-Average Compliance:** Every manufacturer must meet the prescribed **sales-weighted average fuel-consumption target** for its eligible passenger vehicle fleet. The framework continues to regulate the fleet as a whole instead of individual models.
4. **Progressively Stricter Targets:** The draft proposes tighter fuel-consumption limits from **FY2027–28 to FY2031–32**. It also aims to reduce average emissions from **around 113 gCO₂/km to 77 gCO₂/km by FY2031–32**.
5. **Multiple Technology Pathways:** Compliance is no longer based only on improving conventional engine efficiency. **Carbon Neutrality Factors (CNFs), approved efficiency technologies and super credits** allow different clean technologies to contribute towards fleet targets.
6. **Common Fuel-Consumption Method:** Different vehicle technologies are assessed using a **common petrol-equivalent fuel-consumption methodology**. This creates a common basis for comparing multiple clean mobility options.
7. **Market-Based Compliance:** Manufacturers performing better than their targets can generate **tradable compliance credits**. Companies with compliance deficits can use **credit trading, pooling arrangements or the Bureau of Energy Efficiency (BEE) buyout mechanism** to meet their obligations.
8. **Improved Monitoring and Testing:** The proposal introduces **manufacturer compliance passbooks** and requires reporting under both the **Modified Indian Driving Cycle (MIDC)** and the **Worldwide Harmonised Light Vehicles Test Procedure (WLTP)**. Manufacturers selling **fewer than 1,000 passenger vehicles annually** remain exempt from fleet-average compliance requirements.

Arguments Supporting the Draft

1. **Technology-Neutral Choice:** Instead of favouring one technology, the draft allows manufacturers to choose the most suitable clean mobility pathway.
2. **Multiple Compliance Pathways:** **Carbon Neutrality Factors (CNFs), technology credits and super credits** encourage manufacturers to adopt different clean mobility solutions according to their product portfolio.
3. **Greater Compliance Flexibility:** Credit trading, pooling arrangements and the BEE buyout mechanism reduce compliance costs while allowing manufacturers additional flexibility.
4. **Regulatory Modernisation:** The proposal introduces **manufacturer compliance passbooks** and gradual adoption of **WLTP** alongside **MIDC**, bringing India's testing framework closer to international practices.

Concerns and Criticisms

1. **Reduced Effective Stringency:** The combined effect of **CNFs, super credits, credit banking, BEE buyouts and multi-year compliance periods** substantially weakens the actual strength of the regulations.
2. **Uncertain Ethanol Incentives:** Manufacturers receive compliance benefits for higher ethanol-compatible vehicles even though the government has **not decided to move beyond E20 blending**. Ethanol is also costlier and provides lower mileage than petrol.
3. **Compliance Without Technological Change:** Companies can purchase compliance credits instead of upgrading their own technologies, reducing the incentive for cleaner vehicle development.
4. **Weak Push for Electrification: Strong hybrids** receive super-credit benefits despite relying mainly on **ICE technology**, while fewer low-emission vehicle sales are required because of the super-credit system.
5. **Lower Ambition Than Industry Plans:** Manufacturers have already announced **average EV targets of nearly 20% by 2030**, with several aiming for **30% or more**. The proposed framework therefore attempts only part of the industry's own transition plans.

Why Stronger Fuel-Efficiency Regulations Matter

1. **Regulation Should Shape Markets:** Fuel-efficiency regulations should create demand for cleaner technologies rather than simply accommodate existing market preferences. India's experience with **compressed natural gas (CNG)** shows that clear policy support and regulatory certainty encouraged manufacturers to rapidly introduce CNG vehicles..
2. **Energy Security:** India remains heavily dependent on imported crude oil, making the economy vulnerable to **geopolitical tensions**. Better fuel-efficiency standards can reduce long-term dependence on imported fuel.
3. **Macroeconomic Stability:** Lower crude oil dependence can reduce the impact of **imported inflation and currency pressures** arising from external energy shocks. Fuel-efficiency policy therefore has wider economic importance.
4. **Beyond Environmental Goals:** Stronger fuel-efficiency standards are not only an environmental objective. They also support **energy security, industrial policy and macroeconomic stability** while helping India meet its **Glasgow commitment on energy efficiency**.
5. **Global Competitiveness:** Revising CAFE norms provides India with an opportunity to move closer to the world's leading automobile markets in the transition towards **low-carbon mobility**.

Conclusion

The proposed CAFE 2027 framework broadens India's fuel-efficiency regulation through technology neutrality, multiple clean mobility pathways and market-based compliance mechanisms. However, excessive flexibility may weaken its intended impact. India should ensure that fuel-efficiency regulations encourage genuine technological transformation while strengthening energy security, industrial competitiveness, lower transport-sector emissions and progress towards low-carbon mobility.

Question for practice:

Discuss the key features and significance of the proposed CAFE 2027 framework for India's transition to cleaner mobility.

Source: [The Hindu](#)

India–Australia Relations: A New Chapter

Source: The post “India–Australia Relations: A New Chapter” has been created based on “India–Australia Relations: A New Chapter” published in “Indian Express” on 29th July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: India–Australia relations have entered a new phase characterised by concrete outcomes in trade, investment, energy, education, sports, culture, and people-to-people exchanges. Prime Minister Narendra Modi's recent visit to Australia demonstrated that the bilateral partnership is now increasingly defined by implementation and delivery rather than only future potential.

India–Australia partnership: From potential to delivery

1. Investment and Infrastructure

- AustralianSuper, Australia's largest superannuation fund, has announced an investment of **A\$500 million** in the Mumbai-based National Investment and Infrastructure Fund (NIIF).
- With this investment, AustralianSuper's total investments in India have increased to **A\$3.3 billion**.
- This investment reflects Australia's confidence in India's economic growth and infrastructure transformation, especially in western India.

2. Trade and Economic Cooperation

- Bilateral trade between India and Australia has crossed **A\$50 billion**, demonstrating the growing economic partnership.
- The **Australia–India Economic Cooperation and Trade Agreement (ECTA)** has significantly strengthened bilateral trade.
- Since January, all Indian goods exported to Australia have become tariff-free, improving the competitiveness of Indian exporters.
- Indian service exports to Australia have increased by **58%** since the implementation of ECTA.

3. Energy Security and Clean Energy

- Both Prime Ministers issued a **Joint Statement on Energy Security** to strengthen cooperation in reliable energy supplies.
- Australia has agreed to export uranium to India exclusively for peaceful purposes under **International Atomic Energy Agency (IAEA)** safeguards.
- Australia possesses nearly one-third of the world's known uranium reserves and is also a major supplier of critical minerals required for the clean energy transition.
- This cooperation strengthens India's long-term energy security and supports its clean energy goals.

4. Education and Innovation

- Eight Australian universities have committed to establishing campuses in India.
- The **University of Western Australia** will establish its first Indian campus in Mumbai.
- Deakin University** and the **University of Wollongong** have already established campuses in Gujarat's GIFT City.

- d. These initiatives will promote research collaboration, skill development, innovation, and greater academic exchanges.

5. Sports Cooperation

- a. India and Australia have adopted a **Sports Collaboration Roadmap** to strengthen cooperation in sports science, capability development, and major sporting event management.
- b. Australia can support India's preparations for hosting international sporting events, including the proposed **2036 Olympic Games**.
- c. The **G'Day-Namaste** programme and the Australia-India Sports Summit in Mumbai will further strengthen sports diplomacy.

6. Cultural Cooperation

- a. Prime Minister Narendra Modi acknowledged the contribution of the **Indian Film Festival of Melbourne** in promoting Indian cinema globally.
- b. The announcement of **Silkyara 41**, a joint film project involving Australian and Indian partners, reflects growing collaboration under the India-Australia Co-Production Agreement.
- c. These initiatives strengthen cultural diplomacy and deepen mutual understanding.

7. People-to-People Relations

- a. More than **one million Australians** are of Indian heritage, making the Indian diaspora an important bridge between the two countries.
- b. More than **140,000 Indian students** studied in Australia in 2025.
- c. More than **one million visits** were made between the two countries during the year.
- d. ECTA has also created greater opportunities for skilled professionals to work and contribute in both countries.

8. Strategic Significance

- a. India and Australia have emerged as trusted strategic partners in the Indo-Pacific region.
- b. Their complementary economies and shared democratic values provide a strong foundation for long-term cooperation.
- c. Western India is expected to become a major centre for investments, education, innovation, clean energy, and sports cooperation under this growing partnership.

Challenges

- 1. The bilateral partnership still depends heavily on the effective implementation of announced agreements and projects.
- 2. Trade and investment can be affected by global economic uncertainties and supply chain disruptions.
- 3. Differences in regulatory frameworks and investment procedures may slow the execution of projects.
- 4. Expanding educational and research collaborations will require sustained institutional coordination.
- 5. Ensuring uninterrupted cooperation in critical minerals and clean energy will require long-term policy stability and mutual trust.

Way Forward

- 1. **Both countries should ensure the effective implementation of commitments made under the Australia-India Economic Cooperation and Trade Agreement (ECTA)** to further expand bilateral trade and investment.

2. **India and Australia should deepen cooperation in infrastructure, clean energy, critical minerals, and energy security** to support sustainable economic growth and the global energy transition.
3. **They should strengthen collaboration in education, research, innovation, and skill development** by facilitating the establishment of Australian university campuses and promoting joint research programmes.
4. **Both countries should enhance strategic cooperation in the Indo-Pacific** through greater coordination on regional security, resilient supply chains, and maritime cooperation.
5. **People-to-people ties should be further strengthened** by promoting student mobility, tourism, cultural exchanges, sports cooperation, and opportunities for skilled professionals.
6. **Greater private-sector participation should be encouraged** to increase investments in infrastructure, technology, manufacturing, and emerging sectors such as critical minerals and clean energy.
7. **Regular high-level political dialogue and institutional mechanisms should be strengthened** to ensure timely implementation of agreements and address emerging challenges.
8. **Western India should be leveraged as a key hub for bilateral cooperation**, particularly in infrastructure, education, innovation, and clean energy projects, to maximise the benefits of the growing partnership.

Conclusion: India–Australia relations have evolved into a mature and action-oriented partnership that delivers tangible outcomes across multiple sectors. By addressing implementation challenges and expanding cooperation in emerging areas, both countries can further strengthen their strategic partnership and contribute to sustainable economic growth and stability in the Indo-Pacific region.

Question: "India–Australia relations have moved from being a partnership of potential to a partnership of delivery." Discuss in the light of recent developments. Also examine the challenges and suggest the way forward.

Source: [Indian Express](#)

AI Inclusion for Informal Women Workers

Source: The post "AI Inclusion for Informal Women Workers" has been created based on "AI Inclusion for Informal Women Workers" published in "The Hindu" on 29th July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: Artificial Intelligence (AI) is transforming sectors such as agriculture, healthcare, logistics, and financial services. However, India's journey towards **Viksit Bharat 2047** depends on whether the productivity gains from AI are shared equitably, particularly among informal women workers, who constitute the majority of India's female workforce.

Why AI must empower informal women workers

1. Women form the backbone of the informal economy.

- According to the **ILO (2018)**, around **82% of working women in India are employed in the informal sector**, including agriculture, domestic work, home-based production, and micro-enterprises.
- Therefore, AI-led economic growth will be inclusive only if it reaches this large workforce.

2. AI can improve agricultural productivity and livelihoods.

- AI-enabled precision agriculture can provide real-time crop advisory, crop health monitoring, input optimisation, and better market access.
- According to **PLFS 2023-24, 76.9% of rural women are engaged in agriculture**, making them a key beneficiary of AI-based agricultural solutions.

3. Evidence shows that women benefit significantly from AI tools.

- A **2024 Farmer.Chat study** across 12 States found that **61% of women users reported an improved quality of life within 45 days**.
- The study also found that women's engagement with the platform was **two to three times higher than that of men** when AI tools were designed according to their language, mobility, and livelihood needs.

4. Gender-responsive AI promotes inclusive economic growth.

- India's **AI Governance Guidelines (2025)** recognise principles such as fairness and equity.
- Gender-responsive AI can improve women's access to employment, welfare schemes, financial services, and digital opportunities.

5. AI can strengthen financial and digital inclusion.

- AI can help women access government entitlements, digital platforms, financial services, and better livelihood opportunities.
- This can increase productivity and economic participation among informal women workers.

Challenges

1. AI systems may reinforce existing gender inequalities if they are not designed with a gender-responsive approach.
2. AI models often suffer from biased data, limited representation of women, and inadequate support for regional languages.
3. Women in the informal sector face low digital literacy, limited access to smartphones, and poor digital infrastructure.
4. The absence of gender impact assessments may result in AI systems producing discriminatory outcomes in areas such as credit, employment, and welfare delivery.
5. Technology-facilitated gender-based violence, including deepfakes, online harassment, and non-consensual imagery, discourages women from participating in digital platforms.
6. Weak grievance redressal mechanisms and the lack of accessible remedies in regional languages reduce trust in AI-enabled services.

Way Forward

1. Gender impact assessments should be made an integral part of AI systems that affect employment, welfare delivery, financial inclusion, and women's safety.
2. AI investments should adopt Gender Responsive Budgeting by assessing which women will benefit, which barriers are being addressed, how outcomes will be measured, and how corrective action will be financed.
3. AI literacy should be treated as public infrastructure and integrated with schemes such as DAY-NRLM, DDU-GKY, Skill India, and Mission Shakti through the Sakhi network.
4. AI tools should be designed in regional languages and should address women's mobility, literacy, land ownership, and livelihood constraints.
5. Strong implementation of the IT (Amendment) Rules, 2021 and mandatory labelling of AI-generated synthetic content should be ensured to protect women from online harms.
6. Accessible grievance redressal mechanisms and survivor-centric remedies should be made available in regional languages to enhance trust in AI systems.

7. AI policies should promote inclusive design, ethical governance, and continuous monitoring to ensure that productivity gains reach women farmers, home-based workers, self-help group members, and platform workers.

Conclusion: Artificial Intelligence has the potential to become a powerful driver of inclusive growth in India. However, its success should not be measured only by technological advancement but by whether it expands opportunities, enhances productivity, and improves the livelihoods of informal women workers. A gender-responsive AI ecosystem will be essential for achieving the vision of **Viksit Bharat 2047**.

Question: "Artificial Intelligence (AI) can become a powerful tool for inclusive development only if it empowers India's informal women workers." Discuss. Also examine the challenges and suggest a way forward.

Source: [The Hindu](#)

The Urban Nightmare — A Fire with No Escape

UPSC Syllabus: Gs Paper 3- Disaster Management

Introduction

The fire in an unauthorised commercial building at Aliganj, Lucknow, which claimed **15 lives on June 22, 2026**, exposed a deeper crisis in India's urban governance and disaster risk management. Similar incidents in Delhi, Rajasthan and Tamil Nadu show that these tragedies are not isolated events but the result of weak enforcement, political interference, corruption and poor urban planning. As India's cities expand rapidly, strengthening urban resilience and risk reduction has become essential for protecting lives and ensuring sustainable urban development.

Root Causes of India's Urban Governance Crisis

1. **Illegal construction and unsafe land use:** Commercial establishments continue to operate from residential areas and unauthorised buildings without proper fire exits or safety measures. Such violations convert ordinary buildings into death traps during emergencies.
2. **Failure to enforce existing laws:** Fire safety laws, building regulations and licensing requirements already exist, but repeated violations continue because authorities fail to implement them effectively. People die despite the presence of laws, not because of their absence.
3. **Political patronage and corruption:** Political interference, vote-bank considerations and corruption allow illegal constructions to survive for years. Officials often overlook violations because of political pressure or personal gains, weakening the entire enforcement system.
4. **Violations continue without consequences:** Unsafe buildings remain functional even after repeated notices and known violations. When offenders rarely face strict action, illegal practices become normal across many cities.
5. **Growing human and economic cost:** India records around 13,000–15,000 fire deaths every year, while 39 people died in fires in Delhi during the first quarter of 2026 itself. Rising heatwaves are also increasing electrical fire risks, making urban safety an even bigger concern.

6. **Urban growth is increasing risk exposure:** India's cities are concentrating more people, infrastructure and economic activity in limited spaces. Rapid urbanisation, informal settlements and increasing vulnerabilities make the impact of disasters much more severe.

Governance Deficit and Institutional Challenges

1. **Weak Urban Local Bodies:** More than three decades after the 74th Constitutional Amendment, most Urban Local Bodies continue to have limited authority. Municipal corporations carry responsibilities but lack adequate powers to enforce effective urban governance.
2. **Fragmented institutional responsibilities:** Urban functions are divided among development authorities, municipal corporations, public works departments, water boards and other agencies. This fragmented system creates confusion over responsibility and weakens accountability.
3. **Lack of accountability after disasters:** Major accidents usually lead to inquiries, arrests and committee reports, but meaningful institutional reforms rarely follow. Repeated tragedies across different cities show that accountability remains weak regardless of the government in power.
4. **Response receives greater attention than prevention:** Disaster management continues to focus more on emergency response and relief than on reducing risks before disasters occur. This approach limits long-term resilience and allows preventable hazards to persist.
5. **Urban risks are not fully understood:** Urban risks arise not only from natural hazards but also from poor planning, social vulnerabilities, weak institutions and environmental pressures. However, policies continue to focus mainly on hazard-prone areas instead of addressing wider urban vulnerabilities.
6. **Planning and regulatory gaps remain:** Project approvals, land-use decisions and building regulations often do not adequately consider disaster risks. Existing planning frameworks also lack a comprehensive multi-hazard approach for rapidly growing cities.
7. **Limited institutional capacity and data systems:** Local governments often lack technical expertise, reliable risk data and long-term monitoring systems needed for effective planning. Weak institutional capacity reduces their ability to identify vulnerabilities and prevent future disasters.
8. **Technology exists but governance is weak:** Satellite imagery, drones, GIS, digital property databases and Artificial Intelligence can identify violations and monitor compliance. However, technology alone cannot improve urban safety without strong political will, transparent governance and effective enforcement.

Initiatives for Urban Risk Reduction

A. Global Initiatives

1. **UN-Habitat – New Urban Agenda (2016):** Adopted at the UN Conference on Housing and Sustainable Urban Development (Habitat III), it promotes **safe, inclusive, resilient and sustainable cities** through risk-sensitive urban planning, resilient infrastructure, better land-use

management and stronger urban governance. It also encourages cities to integrate disaster risk reduction into long-term urban development.

2. **Sendai Framework for Disaster Risk Reduction (2015–2030):** It provides a global framework to strengthen disaster risk governance, develop national and local disaster risk reduction strategies, improve early warning systems and build resilient infrastructure to minimise disaster losses.
3. **Making Cities Resilient 2030 (MCR2030):** A United Nations Office for Disaster Risk Reduction (UNDRR) -led global partnership that supports municipalities in strengthening urban resilience through the **Ten Essentials for Making Cities Resilient**, the **MCR2030 Dashboard**, technical assistance and peer learning among cities.
4. **Sustainable Development Goal (SDG) 11:** It aims to make cities **inclusive, safe, resilient and sustainable** by promoting resilient infrastructure, better urban planning and reduced disaster risks, although disaster risk reduction is not treated as a separate standalone goal.
5. **Paris Agreement (2015):** It supports climate adaptation and resilience by encouraging countries to address climate-related urban risks through adaptation planning and climate finance, although enforcement mechanisms remain limited.
6. **World Bank City Resilience Program (CRP):** It supports cities through tools such as **City Scan** and **Urban Climate Risk Analysis**, helping municipalities identify urban risks and prioritise resilient infrastructure and policy interventions.

B. Indian Initiatives

1. **National Disaster Management Framework:** The Disaster Management Act, 2005, National Disaster Management Policy, 2009 and National Disaster Management Plan, 2016 strengthen disaster risk reduction through preparedness, mitigation, institutional capacity and resilience, providing an important framework for managing urban risks..
2. **Risk Governance Framework (NDMP, 2016):** It promotes **urban disaster resilience** by integrating disaster risk reduction into development planning, strengthening institutions, encouraging community participation and improving governance.
3. **Climate Smart Cities Assessment Framework (CSCAF):** Developed by the **Ministry of Housing and Urban Affairs (MoHUA)**, it helps Urban Local Bodies integrate climate resilience and disaster risk indicators into city planning and improve urban liveability.
4. **NDMA–NIDM State Collaborations:** The **National Disaster Management Authority (NDMA)** and **National Institute of Disaster Management (NIDM)** work with States to integrate geotechnical investigations, landslide mitigation, resilient public infrastructure and disaster risk assessments into urban master plans.
5. **Urban Development Missions: AMRUT, Smart Cities Mission, Pradhan Mantri Awas Yojana (PMAY) and Swachh Bharat Mission (Urban)** provide opportunities to integrate resilience into urban infrastructure and service delivery. However, disaster risk reduction remains only partially integrated into these programmes.

6. **Disaster Financing Mechanism:** The **National Disaster Response Fund (NDRF)** provides financial assistance for **emergency response, relief, rehabilitation and recovery**, while the **National Disaster Mitigation Fund (NDMF)** supports **pre-disaster mitigation projects** such as urban flood risk management, heatwave mitigation, resilient infrastructure and other disaster risk reduction measures. Together, they strengthen both response and preventive urban resilience.

Way Forward

1. **Strengthen Urban Local Bodies:** Urban Local Bodies should receive greater administrative and financial powers along with professional urban management to improve governance and service delivery.
2. **Shift from response to risk reduction:** Disaster management should prioritise prevention, preparedness and mitigation instead of focusing mainly on rescue and relief after disasters occur.
3. **Adopt a multi-hazard planning approach:** Urban planning should address multiple hazards together while considering vulnerability, exposure and local response capacity during development decisions.
4. **Strengthen planning and enforcement:** Land-use planning, project approvals and building regulations should fully integrate disaster risk assessments. Existing laws should be enforced without political interference or selective implementation.
5. **Improve technology and data systems:** Satellite imagery, GIS, drones, Artificial Intelligence and digital databases should support compliance, while local governments should build strong data collection, monitoring and evaluation systems for long-term planning.
6. **Build institutional and community capacity:** Governments should strengthen technical expertise, involve elected representatives, civil society, private organisations and local communities, and improve public awareness for disaster preparedness.
7. **Strengthen financial resilience:** Disaster mitigation funds, insurance coverage and better financial mechanisms should support long-term recovery and help cities rebuild more safely after disasters.
8. **Promote resilient and risk-sensitive urban development:** Urban planning should protect critical infrastructure, conserve natural ecosystems and follow the principle of "Build Back Better" during post-disaster recovery.

Conclusion

The repeated urban disasters show that the main challenge is not the absence of laws but weak governance, poor accountability and inadequate disaster risk reduction. Building safer cities requires empowered Urban Local Bodies, integrated risk-sensitive planning, strong institutions, effective enforcement and sustained political commitment. Urban governance should ultimately be judged by its ability to prevent avoidable tragedies, strengthen resilience and ensure that every citizen can live and work safely.

Question for practice:

Discuss the key governance challenges behind recurring urban disasters in India and suggest measures to build safer and more resilient cities.

Source: [The Hindu](#)

Co-existing with Tigers Outside Reserves

UPSC Syllabus: Gs Paper 3- Environment

Introduction

India has achieved remarkable success in tiger conservation through **Project Tiger**, making it home to **over 70% of the world's wild tigers**. However, the growing tiger population has increased dispersal beyond protected areas, with **35–40% of tigers now living outside Tiger Reserves**. This has created new conservation and governance challenges, as protecting tigers must now go hand in hand with safeguarding human lives and livelihoods, leading to the launch of the **Tigers Outside Tiger Reserves (TOTR)** initiative.

India's Tiger Conservation Success Story

1. **Project Tiger transformed tiger conservation:** Since its launch in **1973**, the protected area network has expanded from **9 reserves (18,278 sq km)** to **58 reserves (84,488 sq km)**, covering **about 2.6% of India's land area**.
2. **Remarkable recovery of tiger population:** India's tiger population increased from **1,411 in 2006** to **3,682 in 2022**, making the country home to **more than 70% of the global wild tiger population**.
3. **Success created a new conservation challenge:** As tiger populations increased and core habitats became saturated, more tigers naturally dispersed beyond protected areas.
4. **Growing presence outside reserves:** According to the **National Tiger Conservation Authority (NTCA)**, nearly **35–40% of India's tigers now live outside designated Tiger Reserves**, increasing interactions with people.
5. **Shared landscapes increase risks:** Tigers moving into areas with villages, farms, roads and other infrastructure face accidental encounters, livestock attacks, rescue operations and public anxiety, creating ecological, social and administrative challenges.

Tigers Outside Tiger Reserves (TOTR)

A. What is TOTR?

A new conservation initiative: Tigers Outside Tiger Reserves (TOTR) is an initiative of the **Ministry of Environment, Forest and Climate Change** to conserve tigers living outside protected areas. It extends active tiger management to shared landscapes where a large number of tigers now live.

B. Objectives

1. **Conserving tigers beyond protected areas:** TOTR aims to conserve tigers living outside Tiger Reserves through a **scientific, landscape-based approach**, while protecting human lives and livelihoods.

2. **Shifting to proactive conservation:** The initiative moves from responding to conflicts after they occur to preventing them through **technology, preparedness and community participation**.
3. **Strengthening coexistence:** TOTR seeks to create long-term coexistence by reducing conflict and building trust between local communities and forest departments.

C. Key Features

1. **Pilot-based implementation:** TOTR has been launched as a **pilot programme** so that future policy is based on evidence generated under real field conditions.
2. **Scientific selection of areas:** Based on the **All India Tiger Estimation 2022**, the pilot covers **40 forest divisions across nine States**, selected from **212 forest divisions** where tiger presence was recorded.
3. **Coverage beyond Tiger Reserves:** TOTR extends active tiger management to **205 forest divisions**, where nearly **one-third of India's tigers** live. It is supported by an **₹88 crore allocation** under the **Compensatory Afforestation Fund**.
4. **Two complementary pillars:** The first pillar strengthens conflict management through better communication systems, rapid response teams and rescue infrastructure. The second pillar promotes coexistence through community participation, awareness programmes and timely compensation.

Significance of TOTR

1. **Conservation beyond protected areas:** TOTR accepts that tigers move naturally across landscapes and cannot be conserved only inside protected reserves.
2. **Supporting habitat connectivity:** Managing forests outside reserves helps maintain movement between habitats, allowing dispersing tigers to find new territories and support genetic exchange.
3. **Building public trust:** TOTR treats villagers as conservation partners through awareness programmes, community engagement and timely compensation.
4. **Improving governance of shared landscapes:** TOTR broadens conservation from protected areas to reserve forests and other landscapes where ecological processes and human livelihoods exist together.
5. **Using technology for better management:** Camera traps, GPS-enabled monitoring systems, drones and Artificial Intelligence improve surveillance, early warning systems and evidence-based decision-making.

Challenges and Concerns

1. **Increasing human-tiger interactions:** More tigers outside reserves increase the chances of human deaths, livestock losses, accidental encounters and prolonged rescue operations, placing pressure on forest departments and district administrations.

2. **Need for stronger institutional capacity:** Technology alone cannot reduce conflict. Well-trained forest staff, veterinarians and rescue teams are essential for quick and effective field responses.
3. **Delays in compensation reduce public trust:** States have compensation systems, but delays often create resentment among local communities. Simpler procedures and regular outreach are needed to build confidence.
4. **Corridor protection remains a concern:** While TOTR aims to improve tiger movement outside reserves, the NTCA has reduced the number of officially recognised tiger corridors from **192 to 32**, raising concerns about habitat connectivity.
5. **Risk from infrastructure development:** Conservation experts warn that reduced official corridor recognition could expose important movement routes to mining, highways, power lines and other infrastructure projects.
6. **Implementation needs accountability:** The pilot programme will succeed only with sustained funding, clear coordination between the Centre and States, transparent use of the **₹88 crore** allocation and regular public reporting on tiger movement, mortality and conflict.

Way Forward

1. **Strengthen scientific implementation:** The pilot phase should generate reliable field evidence to guide future expansion of the programme.
2. **Protect ecological connectivity:** Forest corridors outside protected areas should remain connected so dispersing tigers can move safely between habitats.
3. **Build stronger community partnerships:** Timely compensation, awareness programmes and continuous engagement can improve trust between local communities and forest departments.
4. **Improve institutional preparedness:** States should invest in trained personnel, rescue systems and modern technology to ensure quick and coordinated responses during conflict situations.
5. **Ensure transparent governance:** Regular monitoring, sustained funding and public access to implementation data can improve accountability and strengthen long-term conservation outcomes.

Conclusion

India's tiger conservation has entered a new phase where protecting wildlife also means managing shared landscapes beyond protected areas. **TOTR** marks a shift towards science-based, landscape-level conservation that combines technology, community participation and better governance. Its success will depend on sustained implementation, ecological connectivity and cooperation between governments, local communities and conservation agencies to ensure long-term coexistence between people and tigers.

Question for practice:

Examine the significance of the Tigers Outside Tiger Reserves (TOTR) initiative in promoting human–tiger coexistence beyond protected areas.

Source: [The Hindu](#)

Unaddressed challenges: On India's crisis in education

Source: The post “Unaddressed challenges: On India's crisis in education” has been created based on “Unaddressed challenges: On India's crisis in education” published in “The Hindu” on 30th July 2026.

UPSC Syllabus: GS 2- Polity and Governance

Context: India's examination system has repeatedly faced crises that have raised serious concerns regarding its credibility, fairness, and institutional capacity. In response, the government has recently constituted a task force that has been entrusted with implementing the recommendations of the **K. Radhakrishnan Committee (October 2024)**, many of which have remained pending for nearly eighteen months.

Key Reforms Proposed for the National Testing Agency (NTA)

1. The committee has recommended converting the NTA into a statutory institution on the lines of the Union Public Service Commission (UPSC).
2. It has proposed a new leadership structure comprising a Director General and two Additional Directors General.
3. The reforms envisage ten specialised functional verticals dealing with cybersecurity, psychometrics, forensics, logistics, and other critical areas.
4. The committee has recommended establishing one thousand standardized testing centres across the country.
5. It has proposed a Digi-Exam framework integrating Aadhaar authentication, facial recognition, biometric verification, and continuous surveillance.
6. It has also recommended gradually shifting towards continuous, computer-adaptive testing instead of relying entirely on a single high-stakes examination.
7. The committee observed that regulatory bodies such as the National Medical Commission (NMC) and the IITs currently function as passive clients in the examination process.

Challenges in Implementing the Reforms

1. Recruitment for the proposed institutional structure is expected to take six to twelve months, slowing implementation.
2. Government pay scales are insufficient to attract highly skilled professionals from the private sector.
3. The creation of new cadres requires legislative approval, further delaying institutional reforms.
4. These constraints make the target of fully implementing reforms before **NEET 2027** particularly challenging.

Why the Crisis is More than a Technical Problem

1. The proposed reforms mainly focus on technology, surveillance, cybersecurity, logistics, and administrative capacity.

2. The task force is dominated by experts in technology, space research, intelligence, public administration, and logistics, while having only one academic member from IIT Madras.
3. The limited participation of career educators and assessment researchers prevents meaningful debate on what examinations should actually assess.
4. The government appears to have accepted the existing examination model without questioning whether the current system remains appropriate.

Structural Weaknesses in the Examination System

1. The recurring examination crises reflect weaknesses in educational institutions rather than merely failures in examination administration.
2. Unlike JEE Advanced, whose integrity is ensured through the active involvement of IIT faculty, the NTA lacks comparable academic ownership in conducting examinations.
3. JEE Advanced emphasizes fresh application of fundamental concepts, whereas NEET relies significantly on algorithmically assembled question banks.
4. The continued dependence on question banks strengthens the coaching industry and creates greater opportunities for malpractice.
5. The editorial suggests that one of the leading AIIMS institutions could be entrusted with preparing the NEET question paper every year to improve academic credibility.
6. Regulatory institutions such as the National Medical Commission and the IITs should become active partners in designing and conducting examinations rather than remaining passive stakeholders.
7. Similar concerns are evident in issues such as the CBSE marking controversy, which also reflects deeper institutional shortcomings instead of isolated technical failures.

Way Forward

1. The National Testing Agency should be transformed into a professionally managed statutory institution with adequate financial, technological, and human resources.
2. Career educators, assessment researchers, and subject experts should play a central role in designing examinations that assess conceptual understanding, analytical ability, and higher-order thinking.
3. Academic institutions such as the IITs and leading AIIMS institutions should be given greater responsibility in question paper setting and examination design to strengthen academic ownership.
4. The examination system should gradually transition towards continuous and computer-adaptive testing to reduce the excessive dependence on a single high-stakes examination.
5. Recruitment processes should be expedited, and competitive remuneration should be offered to attract experts in cybersecurity, psychometrics, data science, and educational assessment.
6. Regulatory bodies and premier educational institutions should be actively involved in examination governance instead of functioning merely as passive stakeholders.
7. Reforms should balance technological safeguards with measures that strengthen institutional autonomy, transparency, and accountability.
8. The government should prioritize building strong, autonomous, and academically driven educational institutions, as lasting examination reforms depend on institutional quality rather than technological solutions alone.

Conclusion: India's examination crisis is fundamentally an institutional and educational challenge rather than merely a technological or administrative problem. While technological reforms can improve the integrity and security of examinations, sustainable solutions require strong academic institutions, greater involvement of educators in assessment design, and autonomous governance mechanisms. Only a comprehensive approach

that combines institutional reform with technological innovation can ensure a fair, credible, and resilient examination system capable of serving the objectives of quality education.

Question: "India's recurring examination crises reflect deeper structural weaknesses in its education system rather than merely technical failures." Discuss in the context of the reforms proposed for the National Testing Agency (NTA).

Source: [The Hindu](#)

Ethanol push can deepen water woes

Source: The post "Ethanol push can deepen water woes" has been created based on "Ethanol push can deepen water woes" published in "The Hindu" on 30th July 2026.

UPSC Syllabus: GS-2- Governance

Context: India has implemented the **Ethanol Blending Programme (EBP)** under the National Policy on Bio-fuels to reduce crude oil imports, lower carbon emissions, and improve farmers' income. Although the programme provides significant economic and environmental benefits, its increasing dependence on water-intensive crops raises serious concerns about water security and sustainable agriculture.

Benefits of the Ethanol Blending Programme

1. Reduces Crude Oil Imports

- a. The programme helps reduce India's dependence on imported crude oil, as the country imports more than 85% of its crude oil requirements.
- b. The achievement of the E20 blending target can save nearly **₹40,000 crore** annually in foreign exchange by reducing crude oil imports.

2. Improves Environmental Quality

- a. Ethanol improves the combustion of petrol because it contains oxygen, which reduces the emission of harmful pollutants such as carbon monoxide and particulate matter.
- b. The programme contributes to reducing carbon emissions and supports India's clean energy transition.

3. Enhances Farmers' Income: The programme creates a guaranteed market for crops such as sugarcane, rice, and maize, thereby increasing farmers' income and strengthening the agricultural economy.

Challenges of the Ethanol Blending Programme

1. Dependence on Food Crops

- a. India mainly produces ethanol from primary food crops such as sugarcane, paddy, and maize instead of using crop residues or other advanced biofuel feedstocks.
- b. The diversion of food crops for ethanol production may reduce food availability and increase food prices in the long run.

2. High Water Consumption

- a. Agriculture already consumes more than **85% of India's available freshwater**, and ethanol feedstock crops require large quantities of water.
- b. The production of one litre of ethanol from sugarcane requires approximately **3,630 litres of water**.
- c. The production of one litre of ethanol from paddy requires up to **10,790 litres of water**, making it one of the most water-intensive feedstocks.
- d. The production of one litre of ethanol from maize requires nearly **4,670 litres of water**.

3. Groundwater Depletion

- a. The increased cultivation of water-intensive crops for ethanol can accelerate groundwater depletion in states such as Punjab, Haryana, Western Uttar Pradesh, Gujarat, Maharashtra, and Tamil Nadu.
- b. Subsidised electricity and assured procurement by distilleries may encourage excessive groundwater extraction for cultivating ethanol feedstock crops.

4. Long-Term Water Security Concerns

- a. According to long-term projections, India's total water demand may exceed the available water supply before **2050**.
- b. The expansion of water-intensive crops for ethanol may worsen India's future water crisis.

Measures to Make the Programme Ecologically Sustainable

1. Diversify Ethanol Feedstock

- a. The government should promote low-water-consuming coarse cereals such as **bajra, jowar, and ragi** as alternative feedstocks for ethanol production.
- b. These crops should be cultivated on rainfed lands to minimise pressure on groundwater resources.

2. Promote Water-Efficient Irrigation

- a. The government should make micro-irrigation systems such as drip and sprinkler irrigation compulsory for sugarcane and maize cultivation.
- b. Micro-irrigation technologies can reduce water use by **40–50%** while increasing crop productivity.

3. Link Incentives with Water Conservation: Government subsidies, procurement prices, and distillery licences should be linked with the adoption of water-saving irrigation technologies.

4. Promote Water Recycling in Distilleries: Distilleries should be required to install **Zero Liquid Discharge (ZLD)** systems to ensure that industrial water is fully recycled and reused.

5. Adopt an Integrated Policy Approach: The Ethanol Blending Programme should be implemented through coordinated planning among the Ministries of Energy, Agriculture, and Water Resources to balance energy security with water sustainability.

Conclusion: The Ethanol Blending Programme is an important initiative for improving India's energy security, reducing import dependence, and lowering carbon emissions. However, the programme must follow an ecologically sustainable path by conserving water resources, promoting low-water crops, and encouraging efficient irrigation practices. A balanced approach will ensure that the goal of energy security is achieved without compromising India's long-term water security and agricultural sustainability.

Question: India's Ethanol Blending Programme offers economic and environmental benefits but also raises concerns regarding water security and sustainable agriculture. Discuss. Suggest measures to make the programme ecologically sustainable.

Source: [The Hindu](#)

Role of Ethics and Emotions in World Politics

UPSC Syllabus: GS2 (International Relations) and GS4 (Ethics, Integrity & Aptitude)

Introduction

For decades, International Relations (IR) was primarily understood through the lens of power, security and national interest. Classical realist thinker **Hans J. Morgenthau** argued that states pursue their national interests in an **anarchic international system**, where no authority exists above sovereign states.

However, recent developments from the Israel– Hamas conflict and the Russia–Ukraine war to debates over India's strategic autonomy- show that foreign policy is shaped not only by power but also by ethics, emotions, identity, public opinion and moral legitimacy

Understanding International Relations Beyond National Interest

International Relations (IR) is the study of interactions among states and other global actors. As an academic discipline, it developed mainly after the Second World War. Political scientist **Stanley Hoffmann** famously described it as "**an American Social Science.**"

For much of its history, **Realism** was the dominant theory of international relations. It argues that states primarily pursue power and national interest in an anarchic international system, where no authority exists above sovereign states. While this explains much of global politics, it cannot fully explain why countries provide humanitarian aid, defend human rights, impose sanctions on moral grounds, or cooperate on global challenges such as climate change and pandemics. This shows that national interest alone is no longer sufficient to explain contemporary international relations..

Understanding Ethics and Emotions in World Politics

To better understand such developments, scholars have increasingly highlighted the role of ethics and emotions in international relations.

Ethics refers to the moral principles and values that guide the behaviour of states, leaders and international institutions. It influences ideas of justice, human rights, humanitarian intervention and international law.

Emotions refer to feelings such as **fear, empathy, pride, anger and compassion** that shape how leaders and societies perceive threats, respond to crises and make foreign policy decisions.

Together, ethics and emotions help explain many foreign policy decisions that cannot be understood through national interest alone.

Why Ethics and Emotions Matter?

Earlier, emotions were often viewed as irrational and irrelevant to diplomacy. However, recent scholarship argues that **reason and emotion work together rather than against each other**.

According to **Neta Crawford**, emotions such as fear, grief, pride, empathy and anger shape leaders' perceptions of threats, influence national identity and generate public support for war or peace.

Ethics is equally important because it provides the moral basis for judging state behaviour, encourages respect for human rights and international law, and helps build trust and cooperation among nations. In other words, emotions are not the opposite of strategy—they are an essential part of strategic decision-making.

Ethics Has Always Been Part of World Politics

Although ethics is often viewed as a recent concern in diplomacy, history suggests otherwise.

During the **Cold War**, the United States projected itself as the defender of democracy, human rights and individual liberty, while portraying the Soviet Union as authoritarian. The rivalry was therefore ideological as well as strategic.

Mahatma Gandhi's philosophy of truth and non-violence inspired civil rights movements across the world. Likewise, **Nelson Mandela's** emphasis on forgiveness and reconciliation helped South Africa transition peacefully after apartheid.

How Ethics and Emotions Influence World Politics?

Ethics and emotions influence international relations in several important ways.

- **Decision-making:** Leaders' ethical beliefs and emotional responses shape decisions during wars, humanitarian crises and peace negotiations.
- **Conflict and cooperation:** Emotions such as fear, hatred and insecurity may intensify conflicts, whereas empathy, trust and forgiveness promote reconciliation and long-term peace.
- **Public opinion:** Real-time media coverage of conflicts, such as those in Gaza and Ukraine, generates public sympathy or outrage, placing pressure on governments to respond.
- **Global norms:** Ethical principles have influenced the evolution of international norms on human rights, climate justice and the Responsibility to Protect (R2P).
- **Soft power:** A country's values, humanitarian assistance and cultural diplomacy increasingly strengthen its global influence alongside military and economic power.

Globalisation, Technology and the Changing Nature of Diplomacy

Globalisation and Ethical Concerns- Globalisation has increased interdependence through trade, technology and international institutions. However, unequal benefits between the Global North and the Global South have raised ethical concerns about fairness, climate justice and inclusive development, making justice and shared responsibility central to global governance.

Technology and the Rise of Digital Diplomacy- The growth of AI, social media and digital communication has transformed diplomacy by making conflicts and humanitarian crises visible in real time. As a result, governments increasingly face pressure to respond on both strategic and ethical grounds.

Emerging Challenges for International Relations- Challenges such as cyberattacks, misinformation, climate change and pandemics have reshaped international security. They require countries to balance national interests with ethical responsibilities, making diplomacy increasingly dependent on both strategic thinking and moral credibility.

India's Perspective

India's foreign policy seeks to balance **strategic realism with ethical values**. While pursuing **strategic autonomy**, India also projects itself as a responsible global actor committed to democracy, pluralism, peaceful coexistence and inclusive development.

India's ethical approach to international relations is reflected in:

- **Vasudhaiva Kutumbakam** ("The World is One Family")
- Its status as the world's largest democracy
- Constitutional values and pluralism
- Its anti-colonial legacy
- Leadership of the Global South
- The legacy of the **Non-Aligned Movement (NAM)**, which promoted sovereign equality, peaceful coexistence and an equitable international order

This vision is also reflected in **Article 51** of the Constitution, which directs the State to promote international peace and security and encourage the peaceful settlement of international disputes. Together, these principles strengthen India's credibility as a responsible global power.

Way Forward

- Balance strategic realism with ethical diplomacy rather than treating them as competing approaches.
- Preserve strategic autonomy while remaining committed to humanitarian values and international law.
- Strengthen India's soft power through democratic values, cultural diplomacy and development partnerships.
- Reform global institutions to make them more representative and responsive to contemporary realities.
- Promote a fair, rules-based international order capable of addressing emerging challenges such as climate change, artificial intelligence, cybersecurity and pandemics.

Conclusion

International relations today extends far beyond power politics. While national interest remains central, ethics, emotions, identity and public opinion increasingly shape how states behave and how the international community evaluates their actions.

In a world that is more interconnected and transparent than ever before, countries that successfully combine **strategic interests with ethical leadership** will be better placed to build trust, exercise influence and shape a more stable and just international order.

Question for Practice- "National interest alone is no longer sufficient to explain state behaviour in contemporary international relations." Discuss in the context of the growing role of ethics and emotions in world politics.

Source- [TH](#)

Theaterization

What is Integrated Theatre Command (TC)?

- It is a military structure which seeks to integrate the capabilities of the three services– army, air force and navy– in order to optimally utilize their resources for wars and operations.
- These 'unified combat commands' are organized either on a geographical basis (with a defined mission in a specific 'area of responsibility' somewhere on the globe) or on a functional basis.
- Almost all major countries like China, Russia, the US, the UK and France work on a theatre command concept. **For example-** China's Western Theatre Command looks after the entire borders with India.

What is the existing command structure in India?

- India has 17 single service commands and only two tri-service commands.
- **Single Service Command: The 17 single service commands are divided as- Army – 7 commands; Airforce – 7 commands; Navy – 3 commands.**
- **Tri-Service Command:** The two tri-service commands are- Andaman and Nicobar Command (ANC), and The Strategic Force Command (SFC). The Andaman and Nicobar command is a full-fledged command raised as a tri-service command in 2001. The Strategic Force Command (SFC) handles nuclear weapons.

What are the benefits of Integrated Theatre Commands (ITC)?

1. **Increased efficiency:** It will lead to rationalization of war fighting resources, and efficiency of executions resulting in an integrated action to counter threats.
2. **Rationalization of the command structure:** The present command structure in the Indian military is pretty uneven. The Indian Army has seven commands, while a much smaller Indian Air Force has a similar number of commands and the Indian Navy has three commands. This structure will be rationalized under the theatre command concept.
3. **Effective neutralization of Chinese threat:** China's Western Theater Command looks after the entire borders with India, unlike India where it has multiple Commands and structures to respond with different officers at the top.
4. **Cost-effective in the long run:** Theaterization will help in better planning and military response and also bring down costs. While the cost may go up in the immediate future since all theaters would have to be armed with sufficient systems, it will prove to be cost-effective in the long term as all acquisitions will be a unified one.
5. **Operational Freedom:** The integrated theatre commander will not be answerable to individual Services, and will be free to train, equip and exercise his command to make it a cohesive fighting force capable of achieving designated goals.

What are the Challenges in the Establishment of Integrated Theatre Command in India?

1. **Knowledge Gap at the Top:** The Theatre Commander will command forces from all three services, but he or she is likely to have operational experience in at most two of them. This may create a knowledge gap at the highest level of command, which could prove critical during fast-paced, multi-domain conflicts such as Operation Sindoor (2025).
2. **Inter-Service Competition:** The intense focus of each service on its own assets and influence can hinder the creation of synergy among the services.
3. **Massive funding:** Creation of infrastructure for the Theatre commands will require huge amounts of funding.
4. **Different service cultures:** The service culture and way of functioning of the three services is very different. The Indian Army has regimental affiliations and is bound by its legacy. Merging services with unique values & cultures is a challenge & finding the right mix of service culture remains a challenge.
5. **Perception of Army Dominance:** There are concerns that the integration of the commands may perpetuate the perceived dominance of the army and provide it with greater operational control.
6. **Infrastructure and Logistical coordination issues:** Coordinating and synchronizing the infrastructure and logistics requirements across different services could be complex and resource-intensive.
7. **Lack of National Security Strategy (NSS):** Many retired military professionals have criticised implementing theatre commands without having a coherent National Security Strategy (NSS).
8. **Slower Decision Making:** The CDS and Vice CDS remain between the Theatre Commander and the Raksha Mantri. Although direct reporting is envisaged during combat, shifting from peacetime command practices may be difficult, potentially delaying decisions during fast-paced, high-intensity military operations.
9. **Delay in Implementation:** While China established Theatre Commands in about two years and the US evolved its system over a decade, India has spent nearly 25 years debating the reform. The greater challenge lies not in the structure itself, but in changing institutional mindsets.

What Should be the Way Forward?

1. **A supportive ecosystem:** In order for Theatre Commands to be effective, there needs to be a supporting ecosystem. India still remains the 2nd largest arms importer in the world. Hence, indigenous technology and hardware by self-reliance should be a priority.
2. **Managing internal & external security:** There needs to be an assessment of how the internal and external security will be managed under the theatre commands. It is because there are lakhs of paramilitary personnel and the Indian Coast Guard.
3. **Parliament's role:** The legislature needs to play a far more proactive role. A Dedicated Standing Committee of Parliament should be created. It needs to be staffed with military advisers and other professionals to independently monitor the transition very minutely.
4. **Geography-based theatres:** Keeping in mind the changing nature of threats, India can also aim for four geography-based theatres—Northern, Southern, Eastern, and Western—each equipped to use land, sea, air, space, and cyber power to handle all threats in their areas.
5. **Talent based appointments:** No theatre should 'belong' to any service, and command appointments should be decided based on talent and experience in joint operations.
6. **Clear working out of Budgetary allocations:** Budgetary allocations and the distribution of funds need to be clearly worked out to enable the setting up of a seamless theatre command system
7. **Modular structure:** In the theaterization debate, India must not forget to modularize its armed forces. The present big hierarchical formations need to be divided into many small networked brigades. Multiple studies have shown that these are superior to the division-based structure in terms of deployability, employability, and sustainability.

Conclusion

Integrated Theatre Commands can transform India's armed forces into a joint, agile and multi-domain combat force capable of addressing future security challenges. Their success will depend on a National Security Strategy, indigenous defence capabilities, and seamless inter-service integration. With sustained reforms and political commitment, theaterization can significantly strengthen India's deterrence, warfighting capability, and strategic role in the Indo-Pacific.

Question for Practise:

The Integrated Theatre Command (ITC) system represents a major shift in India's higher defence management. Discuss the significance of theaterization for India's national security. Also examine the challenges in its effective implementation.

Source: [The Hindu](#)

Have fast-track courts delivered on the prom-ise of speedy justice?

Source: The post "Have fast-track courts delivered on the prom-ise of speedy justice?" has been created based on "Have fast-track courts delivered on the prom-ise of speedy justice?" published in "The Hindu" on 31st July 2026.

UPSC Syllabus: GS 2– Polity & Governance

Context: Fast-track courts are specialised courts intended to ensure **expeditious disposal of priority categories of cases**. The debate has gained renewed importance after the proposal to establish fast-track courts for **paper-leak cases under the Public Examinations (Prevention of Unfair Means) framework**. However, with **nearly 2.45 lakh cases pending before FTSCs**, their ability to provide genuinely speedy justice requires closer examination.

Effectiveness of Fast-Track Courts

1. **Faster disposal of priority cases:** FTSCs provide dedicated judicial attention to selected categories, enabling them to move faster than they ordinarily would.
2. **Focused adjudication:** Special allocation allows judges to concentrate on a limited category of cases rather than handling a wide variety of disputes.
3. **Protection of vulnerable victims:** FTSCs established in 2019 prioritised **rape cases and offences under the POCSO Act**, recognising the need for time-bound justice in sensitive cases.
4. **Policy responsiveness:** Fast-track mechanisms allow the judicial system to respond quickly to categories requiring urgent attention, such as **paper-leak cases**.
5. **Reduction of delays in designated cases:** By prioritising hearings and limiting competing matters, FTSCs can reduce delays for the cases specifically assigned to them.

Limitations of Fast-Track Courts

1. **Backlog within FTSCs:** Nearly **2.45 lakh cases are pending**, showing that even specialised courts face significant pendency.
2. **Backlog merely shifts elsewhere:** Judges are generally reassigned from existing courts rather than additional judicial capacity being created. Thus, faster disposal of priority cases may **delay cases in regular courts**.
3. **Low case-clearance rate:** In 2025, around **1.4 lakh cases were instituted but only about 66,000 were disposed of**, causing accumulation of cases.
4. **System-wide pendency:** Trial courts face nearly **4.8 crore pending cases**, about **74% of which are criminal matters**. FTSCs cannot overcome this wider structural burden alone.

5. **Resource shortages:** Inadequate judges, prosecutors, investigators, support staff and **forensic laboratories** constrain their functioning.
6. **Procedural bottlenecks:** Delayed witness depositions, frequent adjournments and weak coordination among stakeholders slow proceedings.
7. **Lack of transparency:** Comparable data on the **actual time taken by FTSCs to dispose of cases** is unavailable, making their performance difficult to assess.
8. **Fair-trial concerns:** Rigid timelines may prevent adequate examination of voluminous evidence and restrict effective witness management.
9. **Equality concerns:** Arbitrary selection of cases for fast-tracking may raise **Article 14 concerns** and must therefore have a rational basis.

Way Forward

1. Create **additional judicial capacity** instead of merely reallocating existing judges.
2. Fill judicial vacancies and strengthen **prosecution, investigation and court-support staff**.
3. Expand **forensic and cyber-forensic infrastructure** for timely investigations.
4. Ensure predictable scheduling of witnesses, lawyers, investigators and prosecutors.
5. Minimise unnecessary adjournments and ensure timely compliance with court directions.
6. Publish reliable data on **case-clearance rates and disposal timelines** of FTSCs.
7. Keep timelines sufficiently flexible to balance **speedy justice with procedural fairness**.

Conclusion: Fast-track courts are useful for **prioritising urgent cases**, but they cannot substitute for comprehensive judicial reform. The ultimate objective should be a regular justice system with sufficient capacity to provide **timely, fair and equal justice without requiring special fast-track mechanisms**.

Question: “Fast-track courts can prioritise cases, but cannot by themselves cure the structural causes of judicial delay.” Examine the effectiveness of Fast-Track Special Courts (FTSCs) in ensuring speedy justice in India and suggest institutional reforms.

Source: [The Hindu](#)

NEET paper leaks: Diagnosing the real disease

Source: The post “NEET paper leaks: Diagnosing the real disease” has been created based on “NEET paper leaks: Diagnosing the real disease” published in “BusinessLine” on 31st July 2026.

UPSC Syllabus: GS 2 – Governance

Context: The government has constituted a **high-powered committee** to strengthen the examination system, prevent paper leaks, improve security and enhance transparency in NEET. However, the larger issue is whether NEET should remain primarily an **elimination and ranking examination** or evolve into a system that identifies candidates with the potential to become **competent, ethical and compassionate physicians**.

Limitations of the Present NEET System

1. **Narrow conception of merit:** A single multiple-choice examination primarily assesses **scientific knowledge and academic preparedness**, rather than the full range of qualities required in medicine.

2. **Fairness does not ensure appropriateness:** Conducting the same examination fairly for everyone ensures procedural equality, but does not necessarily mean that the examination selects the **most suitable future doctors**.
3. **Neglect of professional attributes:** Qualities such as **compassion, integrity, ethical judgment, communication, resilience and commitment to service** cannot adequately be assessed through multiple-choice questions.
4. **Medical seats are societal investments:** Admission to medical education is not merely an educational opportunity because society ultimately entrusts doctors with **human life, suffering and critical decisions affecting families**.
5. **Medicine is based on trust:** Scientific competence alone is insufficient because the doctor-patient relationship also requires **empathy, honesty and social responsibility**.
6. **Changing nature of medicine:** With **AI and digital technologies** increasingly performing routine cognitive and informational tasks, doctors will increasingly function as **interpreters, counsellors and trusted guides**.

Key Attributes Medical Selection Should Identify

1. The purpose of medical admission should shift from merely **ranking and eliminating candidates to identifying future doctors**.
2. Selection should combine **scientific competence with integrity, compassion and social responsibility**.
3. The definition of merit should therefore be broadened without sacrificing **objectivity and transparency**.
4. The system should recognise that education connects the **economic and developmental role of professionals** with the **civilisational values of integrity, justice, empathy and compassion**.

Way Forward

1. **Secure the examination process:** Paper leaks must be prevented through stronger security, transparency and credible examination governance.
2. **Retain scientific assessment:** NEET can continue to assess the scientific preparedness necessary for medical education.
3. **Broaden assessment of merit:** A scientifically rigorous framework should identify professional attributes such as **ethical judgment, communication, compassion and resilience**.
4. **Avoid arbitrary subjectivity:** Reform should not mean replacing NEET with **subjective interviews or discretionary admissions**.
5. **Develop a nationally acceptable framework:** Any new mechanism must remain **transparent, objective, scientifically validated and uniformly applicable**.
6. **Align selection with future healthcare:** Medical admissions should reflect the changing role of doctors in an **AI-enabled healthcare system**, where human interaction and ethical judgment will become increasingly important.

Conclusion: The success of NEET reform should not be judged merely by whether the next examination is **free from paper leaks**. The deeper reform lies in transforming medical admissions from a mechanism for **eliminating candidates into one capable of identifying competent, ethical and compassionate future doctors**.

Question: Recent controversies surrounding NEET highlight that reforming medical entrance examinations requires going beyond examination security to reconsider the very meaning of merit in medical education. Discuss.

Source: [Business Line](#)

SHANTI Doctrine

What is India's SHANTI Doctrine?

- SHANTI Doctrine is a foreign policy and global governance vision unveiled by the External Affairs Minister Subrahmanyam Jaishankar during the launch of India's campaign for a non-permanent seat on the UN Security Council (UNSC) for the 2028–29 term.
- It presents India's approach towards building a secure, peaceful, and equitable world based on rules, cooperation, and inclusive development.
- SHANTI stands for: Securing Holistic Advancement through Norms, Trust and Integrity.
- SHANTI is India's latest strategic framework, building upon the earlier SAGAR (Security and Growth for All in the Region) and MAHASAGAR frameworks.

What is the significance of India's SHANTI Doctrine?

1. Strengthens India's Bid for UNSC Term: SHANTI provides a values-based campaign platform for India's candidature for the 2028–29 non-permanent seat, competing against Tajikistan for the sole Asia-Pacific Group slot.
2. Supports India's UNSC Aspirations: By explicitly mentioning that reform limited only to the non-permanent category would be a "failure," SHANTI boosts India's permanent seat ambition even while pursuing a non-permanent term.
3. Promotes Rules-Based Global Order: The SHANTI Doctrine reaffirms India's commitment to international law, the UN Charter, peaceful dispute resolution, and multilateralism. Thus, it will help in fostering a stable, predictable, and equitable global order based on shared norms and mutual trust.
4. Advances the Interests of the Global South: The SHANTI Doctrine reinforces India's role as the voice of the Global South by advocating equitable global governance, greater representation in international institutions, development cooperation, climate justice, and inclusive, sustainable growth.
5. Strengthens Maritime Security: The SHANTI Doctrine complements SAGAR and MAHASAGAR by promoting a free, open, secure, and rules-based maritime order, strengthening maritime cooperation, ensuring freedom of navigation, and enhancing security across the Indo-Pacific region.
6. Promotes Peace and Stability: The SHANTI Doctrine emphasizes peaceful dispute resolution, and dialogue-based conflict management, contributing to regional and global peace, stability, and a rules-based international order.
7. Encourages Responsible Use of Technology: The SHANTI Doctrine advocates the ethical, secure, and inclusive use of emerging technologies such as Artificial Intelligence, cyber technologies, and digital platforms through international cooperation, robust governance, and global standards.
8. Strengthens India's Indo-Pacific Strategy: The SHANTI Doctrine complements the Act East Policy, and the Indo-Pacific Oceans Initiative (IPOI) by promoting a free, open, inclusive, and rules-based Indo-Pacific through enhanced maritime cooperation, connectivity, and regional partnerships.

How can the Bay of Bengal play an important role in implementing India's SHANTI Doctrine?

1. Strengthening Maritime Security: The SHANTI doctrine enables India to enhance maritime security in Bay of Bengal through coordinated naval exercises, Maritime Domain Awareness (MDA), intelligence sharing, and joint efforts against piracy, terrorism, trafficking, and illegal fishing.
2. Promoting a Rules-Based Maritime Order: SHANTI enables India to uphold UNCLOS, freedom of navigation, peaceful dispute resolution, and respect for international maritime law, fostering stability, trust, and secure maritime commerce in the Bay of Bengal region first & then in the Indo-Pacific region.
3. Enhancing Regional Connectivity: SHANTI Doctrine will enhance the regional connectivity in the Bay of Bengal littoral countries by improving multimodal connectivity through the Kaladan Project, India-

Myanmar-Thailand Trilateral Highway, ports, and coastal shipping, fostering trade, economic integration, and regional trust.

4. **Advancing the Blue Economy:** The SHANTI Doctrine promotes sustainable fisheries, marine resource management, offshore renewable energy, maritime tourism, and resilient port infrastructure in the Bay of Bengal, fostering inclusive growth, regional cooperation, and environmental sustainability.
5. **Climate Resilience & Disaster Management:** The Bay of Bengal is one of the world's most cyclone-prone marine basins, directly threatening millions of coastal residents. Under the SHANTI doctrine's widened security scope, India leads joint HADR exercises & early-warning data sharing across the littoral states.
6. **Strengthening BIMSTEC:** SHANTI will eventually help in strengthening & operationalizing the BIMSTEC by enhancing regional cooperation in maritime security, trade, connectivity, disaster management, and capacity building, while fostering trust, inclusive development, and a rules-based order in the Bay of Bengal.

What are the major challenges in implementing India's SHANTI Doctrine?

1. **Veto Power and Structural Stalemate:** The core pillar of SHANTI calls for reforming the UNSC. However, the five permanent members (P5) remain reluctant to dilute their veto powers or agree on text-based negotiations, making it difficult for India to achieve concrete reforms and expand the Security Council.
2. **Regional Security Threats:** Persistent terrorism, piracy, illegal fishing, trafficking, maritime disputes, and transnational crime in the Indo-Pacific and Bay of Bengal can undermine regional stability, making effective implementation of the SHANTI Doctrine more challenging.
3. **China's Expanding Maritime Presence:** China's expanding naval deployments, port infrastructure under the Belt and Road Initiative (BRI), and growing influence in the Indian Ocean challenge India's efforts to promote a secure, rules-based, and cooperative maritime order under the SHANTI Doctrine.
4. **Weak Regional Cooperation:** Divergent strategic interests, political differences, and uneven institutional capacities among regional countries can hinder consensus-building, limiting effective cooperation on maritime security, connectivity, climate action, and implementation of the SHANTI Doctrine.
5. **Climate Change and Natural Disasters:** Frequent cyclones, sea-level rise, and coastal erosion in the Bay of Bengal threaten maritime infrastructure, connectivity, and livelihoods, making climate resilience, disaster preparedness, and regional cooperation essential for the effective implementation of the SHANTI Doctrine.
6. **Resource Constraints:** Implementing the SHANTI Doctrine requires sustained investment in maritime infrastructure, naval modernization, connectivity projects, technology, capacity building, and development partnerships. Limited financial and institutional resources may constrain its effective implementation and long-term sustainability.
7. **Erosion of Strategic Autonomy:** India's broader maritime challenges involve balancing its desire to counter China's influence without engaging in the arms race or becoming entangled in formal alliances - which is a tightrope walk that impacts all its maritime doctrines.

Conclusion: The success of the SHANTI Doctrine will depend on India's ability to strengthen the regional institutions, build maritime and technological capacities, and translate its vision of Norms, Trust, and Integrity into practical outcomes through sustained diplomacy and partnerships.

Question for practise

What is India's SHANTI Doctrine? How can the Bay of Bengal serve as an ideal region for its operationalisation before expanding it to the wider Indo-Pacific?

Source: [The Hindu](#)

AI as the Next Digital Public Infrastructure (DPI)

UPSC Syllabus- GS Paper II: Government policies, DPI & e-Governance. GS Paper III: AI, Digital Infrastructure, Science & Technology.

Introduction

India's digital transformation over the last decade has been driven by the **JAM trinity** and its extensions- **Aadhaar** (identity), **UPI** (payments), and **DEPA/Account Aggregator** (data)-which together form one of the world's most advanced **Digital Public Infrastructure (DPI) ecosystems**. By making these services widely accessible at minimal cost, India turned digital infrastructure into a public utility that millions rely on every day. As artificial intelligence (AI) begins to reshape the global digital economy, an important question arises: can India replicate this model by making AI the next public utility through the same approach of building shared digital infrastructure and bringing down the cost of access?

1. India's DPI Success: Lessons for AI

India has repeatedly demonstrated that **state-enabled competition**, rather than subsidies alone, can make essential digital services affordable and accessible.

- **Affordable data:** Between 2016 and 2019, mobile data prices fell sharply due to infrastructure expansion and market competition, bringing nearly **500 million people online** within a few years.
- **Affordable identity:** Aadhaar enrolled over a billion residents, replacing costly paper-based identity verification with a low-cost, API-driven digital system.
- **Affordable payments:** UPI transformed digital payments into a near-free public utility by enabling seamless interoperability across banks and payment applications.

In each case, the government created the digital infrastructure, standards, and regulatory framework, while competition among private players reduced costs and expanded access.

2. India's Comparative Advantage in Digital Public Infrastructure

Unlike many countries that have developed digital systems in isolated sectors, India has integrated **identity, payments, and data-sharing** into a single interoperable public digital ecosystem.

- **Estonia** has an advanced digital identity system but lacks an equivalent public payments infrastructure.
- **Brazil's Pix** provides an efficient instant-payment platform but functions largely as a standalone system.
- **Singapore's Singpass and SGFinDex**, along with **Europe's open banking framework**, offer data portability but only in limited domains.

India's strength lies not in any one platform, but in the seamless integration of **Aadhaar, UPI, and the Account Aggregator framework** as interoperable digital public goods. This unique ecosystem provides a strong foundation for extending the DPI approach to artificial intelligence.

3. Why India Needs an AI-DPI

Despite its success in digital public infrastructure, India occupies a relatively weak position in the global AI value chain.

- Indian engineers develop and fine-tune frontier AI models that are largely created abroad.
- India's digitised public life-including languages, transactions, and documents—serves as valuable training data for foreign AI models.

- Indian universities and the Indian diaspora contribute significantly to global AI research.

Yet, Indian startups often have to buy back AI capabilities through expensive, dollar-denominated API services controlled by foreign companies and hosted outside India's jurisdiction.

This resembles India's historical experience during the colonial textile trade, where raw cotton was exported cheaply while finished cloth was imported at a premium. Similarly, India today exports **data, talent, and AI usage**, while importing finished AI capabilities on terms set by others. This underscores the need for an AI ecosystem built on India's own digital public infrastructure.

4. Building an Indian AI-DPI Ecosystem

(a) Democratising Compute

Through the **IndiaAI Mission**, backed by significant government investment, India has adopted a **public-private partnership model** for AI compute. Instead of creating a state-owned data-centre monopoly, the government has empanelled private cloud providers and aggregated national demand.

- Tens of thousands of GPUs have already been onboarded, with plans for further expansion.
- This enables startups and researchers to access computing resources at a fraction of global market costs.

A complementary proposal is to integrate AI compute requirements into **national electricity and grid planning**, treating power supply for data centres as strategic infrastructure, much like coal linkages were once prioritised for steel production.

(b) Promoting Open-Weight Foundation Models

Dependence on proprietary foreign AI models exposes Indian startups to pricing uncertainty and policy changes beyond their control.

The proposed approach includes:

- Aggregating anonymised public datasets—such as legal judgments, agricultural records, and educational content in India's official languages—for developing open-source AI models.
- Requiring that AI models built using publicly subsidised compute or public datasets be released under an **open-weights licence**.

This reflects the philosophy behind UPI, where the government builds and standardises the underlying infrastructure while private firms compete by creating innovative applications and services.

(c) Unified Intelligence Interface (UII): "UPI for AI"

Just as UPI's greatest strength lies in interoperability rather than free payments alone, the proposed **Unified Intelligence Interface (UII)** aims to provide a standardised API gateway through which applications can seamlessly access multiple AI models—both sovereign and private.

The UII would establish common standards for:

- Identity verification
- User consent
- Billing
- Safety and governance

This would enable startups, government departments, and educational institutions to access translation, vision, and text-generation services at minimal cost.

5. Financing Inclusive AI Access

To ensure broad and affordable access, proposals include introducing an **Aadhaar-linked freemium token model**, under which:

- Verified students, researchers, and startups would receive subsidised AI API tokens.
- Commercial enterprises would gradually shift to paid access, helping cross-subsidise free users.

Another proposal is to reallocate a portion of existing subsidy expenditure—for example, from fertiliser subsidies—to support AI access for schools, universities, and research institutions.

6. Transformative Potential of AI-DPI

If AI becomes affordable and widely accessible, it could significantly improve service delivery across multiple sectors.

- **Healthcare:** India-trained AI models could strengthen healthcare delivery in underserved rural areas.
- **Education:** Personalised multilingual tutoring could become accessible to hundreds of millions of learners.
- **Agriculture and governance:** Voice-enabled services in Indian languages could simplify access to crop insurance, public services, and grievance redressal.

This would not only reduce the cost of accessing intelligence but also make AI a powerful tool for inclusive development across the country.

Challenges and Concerns

- **Data privacy and consent:** Large-scale use of public datasets raises concerns about anonymisation, surveillance, data misuse, and informed consent.
- **Quality of open-weight Indic models:** Building globally competitive AI models requires sustained investment in compute, skilled talent, and high-quality multilingual datasets.
- **Energy and infrastructure constraints:** Scaling AI infrastructure demands reliable electricity, robust data centres, and integration with long-term national energy planning.
- **Digital divide:** Affordable AI alone cannot ensure inclusion without widespread access to devices, internet connectivity, and digital literacy.
- **Global competitiveness:** Since frontier AI training is highly capital-intensive, India may achieve better outcomes by prioritising cost-effective inference capabilities alongside targeted model development.
- **Governance of open-weight models:** Open AI models require strong regulatory safeguards to address concerns related to misuse, safety, accountability, and responsible deployment.

Way Forward

- **Integrate AI into India's DPI framework:** Position the IndiaAI Mission and the proposed Unified Intelligence Interface within the broader Digital India architecture to ensure interoperability and common standards.
- **Treat AI compute as strategic infrastructure:** Integrate data-centre power requirements into the National Electricity Plan with dedicated renewable and nuclear energy support.
- **Promote open-weight innovation:** Encourage open licensing for AI models developed using public compute or datasets while incentivising private-sector innovation.
- **Strengthen data governance:** Build robust safeguards for anonymisation, consent, transparency, and independent oversight in the use of public datasets.
- **Bridge the digital divide:** Complement affordable AI access with continued investments in rural connectivity, affordable devices, and digital literacy.
- **Shape global AI governance:** Play an active role in international forums to shape norms on open-source AI, cross-border data flows, and AI infrastructure, positioning India as a rule-shaper rather than a rule-taker.

Conclusion

India's success with **Aadhaar, UPI, and data infrastructure** shows that open, interoperable digital public infrastructure can make essential services widely accessible. Applying this model to AI through affordable compute, open-weight models, and a Unified Intelligence Interface can help India become a global AI leader while ensuring that AI serves as an inclusive public good rather than a privilege for a few.

Question for Practice- India's success with Aadhaar, UPI, and the Account Aggregator framework provides a template for democratising Artificial Intelligence. Examine the feasibility of developing AI as the next Digital Public Infrastructure (DPI) in India

Source- [TH](#)