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Dear Aspirants,

Welcome to the June edition of **iMPACT by CSB IAS ACADEMY**. With the **UPSC Prelims results released**, aspirants are now entering the most crucial phase of preparation, where current affairs must be shaped into clear, analytical and Mains-ready content.

This edition focuses on several high-value themes relevant for GS Mains. Key topics include **El Niño and its climatic impact**, the **Right to be Forgotten** and digital privacy, **criminalisation of politics**, and the debate on **simultaneous elections**. It also covers important governance and social-sector issues such as **Universal Health Coverage** and the **National Family Health Survey**.

On the economy and environment front, the edition discusses the **RBI Annual Report**, **falling FDI in India**, **green hydrogen**, and the **space sector of India**. In international relations and security, it examines **India and the G7**, **India–Myanmar relations**, **India–Nepal relations**, and emerging concerns around **terrorism** and the **Northeastern region**.

Together, these topics will help aspirants develop multidimensional perspectives and strengthen answer writing for Mains.

Wishing you focused preparation and steady progress.

Happy Learning!

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GENERAL STUDIES-I

1. EL NIÑO

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Geography > Climatology

REFERENCE NEWS:

- The U.S. National Oceanic and Atmospheric Administration's ENSO Diagnostic Discussion Report, 2026, has indicated a **high probability of El Niño emerging soon**. It mentions an **82% chance of El Niño during May-July 2026** and a **96% chance of its continuation through the winter of 2026-27.**
- Also, the **India Meteorological Department** has projected the **southwest monsoon rainfall for 2026 at 92%** of the long-period average, placing it in the **"below normal"** category.
- This combination is significant because a weak monsoon in India does **not merely mean less rain**. It can affect sowing patterns, reservoir levels, groundwater recharge, food production, rural demand and inflation.

EL NIÑO AND ENSO:

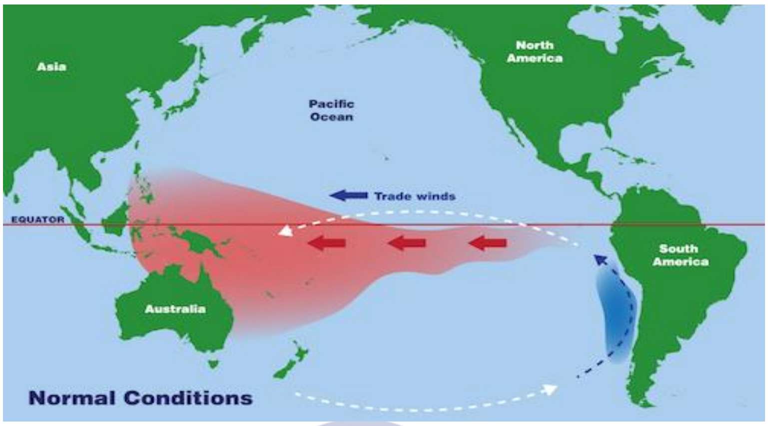
- El Niño is the **warm phase of the El Niño-Southern Oscillation**, a coupled ocean-atmosphere phenomenon in the **tropical Pacific Ocean**.
- It is marked by the **unusual warming of sea surface waters** in the central and **eastern equatorial Pacific.**
- ENSO has three broad phases**: El Niño, La Niña and neutral**.
- **La Niña is the cool phase**, marked by **unusual cooling** of surface waters in the **eastern tropical Pacific**.
- The **Southern Oscillation** refers to the **atmospheric pressure changes** associated with these oceanic shifts.
- El Niño and La Niña usually occur **every two to seven years,** but not on a fixed schedule.
- **El Niño generally occurs more frequently** than La Niña.

Southern Oscillation (SO):
- The **interaction of the atmosphere and ocean** is an essential part of El Niño and La Niña events.
- During an El Niño, **sea level pressure tends to be lower in the eastern Pacific** and **higher in the western Pacific** while the **opposite tends to occur during a La Niña.**
- **This see-saw in atmospheric pressure** between the eastern and western tropical Pacific is called **the Southern Oscillation,** often **abbreviated as simply the SO.**

MECHANISM:

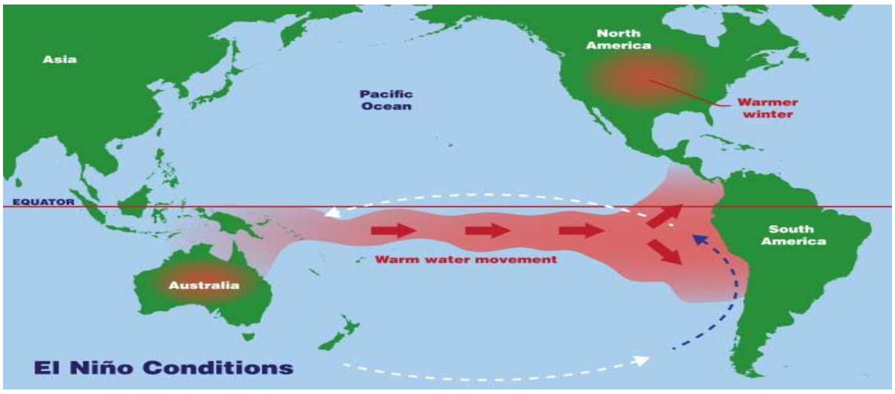
What happens during normal years?

- A surface **low pressure** develops in the region of **northern Australia and Indonesia** and a high-pressure system over the coast of Peru.
- As a result, the **trade winds** over the Pacific Ocean move strongly from **east to west.**
- These carry **warm surface waters westward**, bringing **convective storms (thunderstorms) to Indonesia, coastal Australia, and India.**



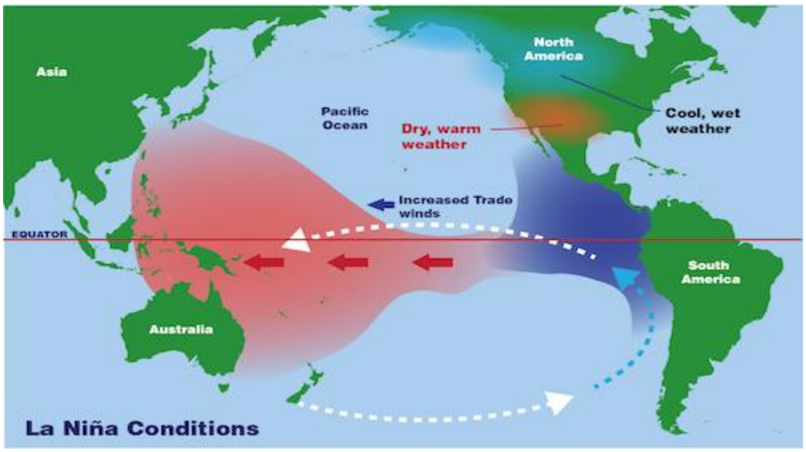
What happens during El Niño years?

- **Air pressure drops** over large areas of the central Pacific and along the coast of South America.
- The **normal low pressure system** is replaced by a **weak high pressure system in the western Pacific.**
- This results in the **trade winds to be reduced** and **accumulation of Warm Ocean water along the coastlines of Peru and Ecuador.**



What happens during La Niña years?

- The equatorial winds are much stronger than usual. This brings **warmer waters to the western margins**.
- This means that places like **Indonesia and Australia can get much more rain than usual (rain clouds normally form over warm ocean water).**
- However, the cold water in the eastern Pacific causes less rain clouds to form there. So, places like the southwestern United States can be much drier than usual.



EL NIÑO'S IMPACT ON INDIA:

- **El Niño and Indian monsoon:**
  - **El Niño and Indian monsoon** are generally **inversely related.**
  - According to statistics, about **60 percent of the time there will be a probability of drought** in India during an El Niño year.
  - The chances of **below-normal rain will be 30 percent**, while the prospect of normal rain remains very rare at 10 percent, they add.
  - However, El Niño conditions have been known to be **unpredictable as well**.
  - For instance, even the **strongest El Niño** has given **normal Monsoon rains of 102 per cent in 1997,** while **weak El Niño** conditions resulted in **severe drought in 2004** to the tune of 86 per cent**.**
- **Drought Risk:**
  - According to a 2014 **ICRIER** (Indian Council for Research on International Economic Relations) **paper on El Niño and Indian droughts by Ashok Gulati** and others**, not all El Niño years resulted in droughts** (where rainfall falls below 10% of the long-term average) for India, **but the majority of droughts occurred during El Niño years.**
  - The paper observes that there is a higher chance of an El Niño turning into a drought **if the warming of the oceans were to occur between April and November,** rather than between October and April.
- **Impact on Agriculture:**
  - El Niño disrupts normal precipitation patterns, severely affecting agriculture.
  - For instance, a **2026 Reuters report on India's monsoon outlook** noted that the southwest monsoon supplies nearly **70% of rainfall** needed to water crops and recharge reservoirs and aquifers.
  - The **kharif crop**, which forms around **50% of India's total agricultural output**, is especially vulnerable due to its heavy monsoon dependence.
  - El Niño can delay sowing, reduce soil moisture, damage standing crops and raise irrigation costs, affecting small and marginal farmers the most due to volatile prices, rising input costs and limited financial security.
  - For instance, during the **2015-16 El Niño event**, agricultural production showed significant stress and fluctuations.
- **Rural Economy and Incomes:**

- El Niño affects not only crops but the wider rural economy. A weak monsoon can reduce **farm income, lower demand for agricultural labour and weaken rural consumption.**
- For small farmers, the crisis becomes **double-sided: output may fall while irrigation and input costs rise.** Agricultural labourers may also lose work if sowing, weeding or harvesting activity declines.
- Thus, El Niño can **weaken rural purchasing power and deepen income insecurity.**

- **Water Scarcity and Groundwater Stress:**
  - A weak monsoon reduces reservoir storage, tank levels and groundwater recharge. This directly affects **irrigation, drinking water supply and urban water availability.**
  - When **rainfall is uncertain**, farmers increase groundwater **extraction through borewells and pumps,** which raises costs and worsens long-term water stress.Thus, El Niño can turn rainfall deficiency into a wider water-management crisis.
- **Heat Stress and Informal Workers:**
  - El Niño years are often **linked with higher temperatures**. This **affects workers who cannot avoid outdoor exposure**, such as construction labourers, agricultural workers, street vendors, delivery workers and daily-wage workers.
  - **Heat stress lowers productivity**, reduces working hours and increases health risks. For daily-wage earners, fewer working hours directly mean lower income. Thus, a hotter El Niño year **makes livelihood more difficult for India's informal workforce.**
- **Food Inflation:**
  - Food prices are where climate stress reaches every household. Weak monsoon rainfall can reduce crop output and push up prices of vegetables, pulses, cereals and other essentials.
  - According to the Ministry of Statistics and Programme Implementation's **Consumer Price Index Press Release (2026), food inflation rose to 4.2% in April 2026,** raising concerns that a weaker monsoon could intensify price pressures further.
  - This creates a policy dilemma: El Niño can **weaken agricultural growth and rural incomes while also increasing inflation.**
- **Urban Inequality:**
  - Urban India is increasingly becoming a heat trap due to the **urban heat island effect**, driven by concretisation, shrinking green cover, dense construction and heat-absorbing surfaces.
  - **During El Niño-linked heat conditions, this stress becomes sharper**.
  - **The burden is unequal:** wealthier households can adapt through cooling, better housing and reliable water access, while poorer households face overcrowding, water scarcity and prolonged heat exposure. Thus, El Niño can intensify urban heat stress and widen urban inequalities.
- **Developmental Significance:**
  - El Niño exposes the fragility of India's climate-sensitive development model. It affects rainfed agriculture, informal workers, groundwater-dependent irrigation, urban poor households and food security.
  - Hence, it should not be viewed merely as a monsoon disturbance. It is a **development challenge** where climate risk becomes economic risk.

GLOBAL CLIMATIC IMPACT:
El Niño and La Niña have wide-reaching effects on global climate patterns, influencing weather conditions across continents with varying degrees of severity.

El Niño:

- **North America:** In the southern regions, warmer winters with reduced precipitation exacerbate drought conditions, while the northern areas may experience unusually cold weather and storms.
- **South America:** There is an increased risk of wildfires, particularly affecting the western and central regions due to dryer conditions.
- **Australia:** The continent frequently faces severe drought conditions, impacting water reserves and agriculture significantly.

La Niña:

- **North America:** The southern United States may experience drought and higher temperatures, whereas the northwest could see cooler temperatures and increased rainfall.
- **Africa:** Southern Africa typically receives more rainfall, benefiting agriculture, while eastern Africa suffers from decreased rainfall.
- **Australia and Southeast Asia:** Increased rainfall aids in replenishing water reserves but also increases the risk of flooding and cyclones.

WAY FORWARD:

- **Strengthen Forecasting and Preparedness:** Improve ENSO monitoring, IMD forecasting models and region-specific early warning systems to identify areas most vulnerable to weak rainfall, drought and heat stress.
- **Climate-Resilient Agriculture:** Promote drought-resistant crops, crop diversification, timely sowing advisories, micro-irrigation and better crop insurance to protect small and marginal farmers from El Niño-linked rainfall uncertainty.
- **Better Water Management:** Prepare contingency plans for reservoir management, groundwater recharge, rainwater harvesting and community watershed development to reduce dependence on emergency extraction during weak monsoon years.
- **Protect Informal and Outdoor Workers:** Strengthen heat action plans with shaded workspaces, drinking water access, rest breaks, health alerts and flexible work timings for construction workers, street vendors, delivery workers and agricultural labourers.
- **Heat-Resilient Cities:** Address urban heat island effects through cool roofs, more green cover, shaded public spaces, better ventilation and reliable water supply, especially in low-income settlements.
- **Food Security and Inflation Management:** Strengthen buffer stocks, public distribution systems, supply-chain monitoring and timely market intervention to prevent El Niño-induced crop stress from turning into food inflation.
- **Mainstream Climate Adaptation in Governance:** Integrate climate adaptation into development planning through better inter-agency coordination, rapid aid delivery and local community participation in disaster and water management.

CONCLUSION:

- El Niño **should not be treated merely as a monsoon disturbance**. For India, it can affect agriculture, water security, food prices, informal livelihoods and urban inequality. Hence, the response must shift from **reactive relief to anticipatory governance, climate adaptation and protection of vulnerable communities.**

PRACTICE QUESTION

Q. Explain the ocean-atmosphere mechanism behind El Niño. Examine how El Niño transforms into an economic and developmental risk for India. (15 marks, 250 words)

APPROACH

Q. Explain the ocean-atmosphere mechanism behind El Niño. Examine how El Niño transforms into an economic and developmental risk for India. (15 marks, 250 words)

Introduction
- Define El Niño as the warm phase of ENSO caused by abnormal warming of central and eastern equatorial Pacific waters.

Body
- Explain the ocean-atmosphere mechanism behind El Niño with diagrams.
- Examine how El Niño transforms into an economic and developmental risk for India

Conclusion
- Provide way forward and conclude.

MODEL ANSWER

El Niño is the warm phase of the **El Niño-Southern Oscillation (ENSO)**, marked by unusual **warming of sea surface waters** in the central and eastern equatorial Pacific Ocean. As per the **NOAA ENSO Diagnostic Discussion Report, 2026**, there is an **82% chance of El Niño during May-July 2026** and **96% chance of its continuation through winter 2026-27**.

Mechanism of El Niño:

During **normal years**, a low-pressure system develops near **northern Australia and Indonesia**, while high pressure prevails near the **coast of Peru**. Strong trade winds blow from east to west across the Pacific, pushing warm surface waters towards the western Pacific. This supports convection and rainfall over Indonesia, Australia and parts of the Indian monsoon region.

<Include diagram showing normal year>

During **El Niño years**, air pressure drops over the central Pacific and along the South American coast, while the normal low-pressure system over the western Pacific weakens. Trade winds weaken, causing warm

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waters to accumulate near **Peru and Ecuador**. This shifts convection eastward and disrupts normal tropical rainfall patterns.

<Include diagram showing El Niño years >

How El Niño Transforms into an economic and developmental risk for India:

1. Monsoon and Drought Risk: El Niño and the Indian monsoon are generally inversely related. Experts note that during El Niño years, India has around **60% probability of drought**, **30% chance of below-normal rainfall**, and only around **10% chance of normal rainfall**. However, the link is not automatic: the strong El Niño of **1997** gave normal rainfall of **102%**, while weak El Niño conditions in **2004** caused severe drought with rainfall around **86%**.

2. Agriculture and Rural Economy: El Niño disrupts precipitation and affects kharif agriculture. A **2026 Reuters report** noted that the southwest monsoon supplies nearly **70% of rainfall** needed for crops, reservoirs and aquifers. The **kharif crop**, forming around **50% of India's agricultural output**, is especially vulnerable. Weak rainfall delays sowing, reduces soil moisture, damages standing crops and raises irrigation costs, hurting small and marginal farmers most.

3. Water and Groundwater Stress: A weak monsoon reduces reservoir storage, tank levels and groundwater recharge. Farmers increase borewell and pump-based extraction, raising costs and worsening long-term groundwater depletion. Thus, rainfall deficiency can become a wider water-management crisis.

4. Heat Stress and Informal Livelihoods: El Niño-linked heat affects construction workers, agricultural labourers, street vendors, delivery workers and daily-wage earners. Heat stress reduces working hours, lowers productivity and directly cuts income.

5. Food Inflation and Urban Inequality: Weak monsoon rainfall can reduce crop output and raise prices of vegetables, pulses, cereals and essentials. As per the **MoSPI CPI Press Release, 2026**, food inflation rose to **4.2% in April 2026**, raising concerns of further price pressure. Urban India also faces intensified heat due to the **urban heat island effect**, affecting poorer households more due to overcrowding, water scarcity and prolonged heat exposure.

Way Forward:

- Strengthen ENSO monitoring, IMD forecasting and region-specific early warning systems.
- Promote drought-resistant crops, crop diversification, timely sowing advisories and micro-irrigation.
- Expand crop insurance and flexible credit support for small and marginal farmers.
- Improve reservoir management, groundwater recharge, rainwater harvesting and watershed development.
- Strengthen heat action plans with drinking water, shaded workspaces, rest breaks and flexible work hours.
- Build heat-resilient cities through cool roofs, green cover, shaded public spaces and reliable water supply.
- Manage food inflation through buffer stocks, PDS strengthening, supply-chain monitoring and timely market intervention.

El Niño should not be treated merely as a monsoon disturbance. For India, it converts climate risk into economic and developmental risk by affecting agriculture, water security, food prices, informal workers and urban inequality. Hence, India needs anticipatory governance, climate adaptation and protection of vulnerable communities.

GENERAL STUDIES-II

2. SPECIAL INTENSIVE REVISION (SIR) OF ELECTORAL ROLLS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Constitution

REFERENCE NEWS:

The judgment of the Supreme Court of India, on the Special Intensive Revision of electoral rolls, has thrown up many disturbing questions about the powers, the role and the conduct of the Election Commission of India (ECI) in the context of the exercise of its powers in the preparation and revision of electoral rolls.

SPECIAL INTENSIVE REVISION:

Special Intensive Revision (SIR) is a comprehensive **voter-verification exercise** conducted by the **Election Commission of India (ECI)** to update, authenticate, and purify electoral rolls through **large-scale house-to-house verification**. It goes beyond routine annual revisions and seeks to ensure that:

- Every eligible citizen is included.
- Duplicate, deceased, shifted, or ineligible voters are removed.
- Electoral rolls remain accurate, inclusive, and credible.

The Supreme Court in **ADR v. ECI (2025-26)** upheld the ECI's power to conduct SIR under Article 324 of the Constitution and Section 21(3) of the Representation of the People Act, 1950.

- The Constitution envisages:
  - **Article 324** – ECI's superintendence, direction and control over elections.
  - **Article 325** – One general electoral roll; prohibition of exclusion based on religion, race, caste, or sex.
  - **Article 326** – Universal Adult Suffrage (18 years and above).
  - **Article 327** – Parliament's power to make laws regarding elections.
- India has periodically conducted intensive electoral roll revisions to maintain electoral integrity. The **last nationwide intensive revision** was conducted during **2002–2004**, after which only **summary revisions** were generally undertaken.
  - The recent Bihar SIR and the proposed extension to 12 States/UTs represent the first major exercise after more than two decades.
- **Representation of the People Act, 1950**
  - **Section 16:** Disqualifies non-citizens from electoral rolls.
  - **Section 19:** Provides eligibility to citizen of India, 18 years or above, ordinarily resident in the constituency.
  - **Section 21(3):** Empowers the ECI to order **Special Revision of Electoral Rolls** at any time after recording reasons.
- **Registration of Electors Rules, 1960:** Provide procedures regarding enrolment, revision, claims and objections and publication of electoral rolls.

- **Eligibility for Inclusion in Electoral Rolls:** A person must be Citizen of India, at least 18 years old, ordinarily resident in the constituency and not disqualified under any law.

KEY FEATURES OF SIR OF ELECTORAL ROLLS:

- **Hybrid Model of Electoral Revision:** Unlike routine revisions, the present SIR adopts a **hybrid approach**. Uses existing electoral rolls as the starting point (summary revision feature). Conducts fresh field verification through house-to-house surveys (intensive revision feature). This makes SIR more comprehensive than ordinary annual revisions.
- **House-to-House Enumeration:** A defining feature of SIR is **door-to-door verification by Booth Level Officers (BLOs)**
  - BLOs visit every household, distribute and collect Enumeration Forms, verify elector details, identify deceased, shifted, duplicate or ineligible voters. The ECI mandates multiple visits where necessary to ensure no eligible voter is left out.
- **Pre-Filled Enumeration Forms:** Each registered elector receives **Unique Enumeration Form (EF).** The form contains name, EPIC number, address, constituency details, existing electoral information. This reduces clerical errors and facilitates faster verification.
- **Documentary Verification of Electors:** The SIR requires verification through supporting documents. Indicative documents include birth certificate, passport, educational certificates, permanent residence certificate, government-issued identity cards, family registers, Forest Rights Certificates, electoral roll extracts from previous SIRs and Aadhaar (subject to ECI guidelines).
  - The Supreme Court also observed that documents such as Aadhaar, voter ID cards and ration cards may be considered to avoid exclusion of genuine voters.

- **Verification of Citizenship and Eligibility:** Under **Section 16 of the RP Act, 1950**, **Article 326 of the Constitution**, only Citizens of India, 18 years and above, ordinarily resident in the constituency, are eligible for enrolment.
  - The Supreme Court clarified that ECI may examine citizenship-related questions for electoral purposes. However, ECI cannot finally determine citizenship status; that power remains with authorities under the Citizenship Act.
- **Removal of Duplicate, Deceased and Shifted Voters:** SIR specifically targets duplicate registrations, multiple enrolments in different constituencies, deceased voters, permanently shifted electors and other ineligible entries. The objective is to ensure **"One Person, One Vote"** and prevent electoral fraud.
- **Inclusion of Left-Out Eligible Voters:** SIR is not merely a deletion exercise. It aims to identify first-time voters (18+), migrants, women, tribal populations, persons with disabilities and other underrepresented groups. New voters can seek enrolment through **Form 6 + Declaration Form.**
- **Multi-Tier Administrative Structure:** The SIR operates through a hierarchical mechanism Booth Level Officer (BLO) for field verification and **Electoral Registration Officer (ERO**) to draft roll preparation and decision on claims and objections. **Assistant Electoral Registration Officer (AERO)** assists ERO. **District Magistrate** forms the first appellate authority and **Chief Electoral Officer (CEO)** the second appellate authority.
- **Involvement of Political Parties:** Recognised political parties are formally involved through **Booth Level Agents (BLAs).** BLAs may assist voters, collect enumeration forms, certify forms and participate in scrutiny and objections. This is intended to increase transparency and confidence in the process.

- **Technology-Enabled Verification:** SIR incorporates online submission of Enumeration Forms, access to all-India electoral databases, computer-assisted matching and linking and digital tracking and verification mechanisms.
- **Rationalisation of Polling Stations:** The exercise also reviews polling infrastructure. Key provisions:
    - Polling stations should generally not exceed **1,200 electors**.
    - New polling stations may be created in: High-rise residential areas, urban clusters, slum settlements, rapidly growing localities.
- **Special Protection for Vulnerable Voters:** The ECI provides volunteers for senior citizens, assistance for Persons with Disabilities (PwDs) and facilitation for poor and vulnerable groups. The objective is to prevent genuine electors from being excluded or harassed.

NEED FOR SPECIAL INTENSIVE REVISION (SIR) OF ELECTORAL ROLLS IN INDIA:

- **Ensuring Free and Fair Elections:** The electoral roll is the foundation of democracy. The Supreme Court observed that free and fair elections depend fundamentally upon the integrity, accuracy and credibility of electoral rolls.
    - An inaccurate voter list can lead to electoral fraud, bogus voting, multiple voting and manipulation of electoral outcomes. Thus, SIR is viewed as a mechanism to preserve the constitutional principle of **"One Person, One Vote".**
- **Removal of Duplicate and Bogus Voters:** India experiences extensive internal migration, urbanisation and interstate mobility. As a result, many voters remain enrolled in native constituencies, destination constituencies simultaneously.
    - A migrant worker from Bihar working in Delhi may continue to remain registered in Bihar while also enrolling in Delhi.
- **Deletion of Deceased and Shifted Electors:** Routine electoral rolls often contain names of deceased voters, persons who permanently relocated and non-traceable electors. Such entries inflate electoral rolls, increase the possibility of fraudulent voting and distort voter turnout calculations. House-to-house verification enables BLOs to physically verify voter status and update records.
- **Inclusion of Left-Out Eligible Citizens:** SIR is also designed as an **inclusion exercise.** It helps identify newly eligible 18+ voters, women previously left out, migrants, tribal communities, persons with disabilities and homeless citizens
- **Addressing Rapid Demographic Changes:** India is witnessing large-scale urbanisation, internal migration, expansion of cities. According to Census and urbanisation trends hundreds of millions of Indians have changed residence over the last two decades.
- **Preventing Inclusion of Ineligible Persons: Identification of non-citizens or otherwise ineligible electors.** Under Section 16 of the Representation of the People Act, 1950, **non-citizens cannot be enrolled as voters.**
    - The Supreme Court recognised that ECI can examine citizenship-related questions for electoral purposes. Electoral inclusion is constitutionally linked to citizenship.
- **Addressing Political Parties' Concerns:** Political parties across ideological lines have repeatedly alleged fake voters, duplicate entries, electoral roll manipulation
    - Concerns regarding electoral roll accuracy have surfaced in Assam, West Bengal, Bihar, Telangana, Andhra Pradesh. SIR provides a systematic mechanism to address such complaints through verification and scrutiny.

- Strengthening Public Confidence in Elections: Democratic legitimacy depends not only on free voting but also on trust in the electoral process. If citizens believe electoral rolls contain bogus names, duplicate voters, non-existent electors confidence in election outcomes may erode.

CONCERNS AND CHALLENGES ASSOCIATED WITH SPECIAL INTENSIVE REVISION:

- **Risk of Mass Disenfranchisement:** The most serious concern is the possibility of **exclusion of genuine voters from electoral rolls.** Many citizens may not possess birth certificates, legacy documents, property records and parental records required during verification.
  - **Most Vulnerable Groups:** Scheduled Castes (SCs), Scheduled Tribes (STs), minorities, migrant workers, homeless persons, elderly citizens, women who migrated after marriage
- **Burden of Proof Shifted to Citizens:** Traditionally inclusion in an electoral roll creates a presumption of eligibility. Critics argue that SIR effectively reverses this principle by requiring voters to prove their eligibility through documentation.
  - In **Lal Babu Hussein v. Electoral Registration Officer (1995),** the Supreme Court held that an enrolled voter enjoys a presumption of citizenship unless proven otherwise. Petitioners argued that SIR undermines this principle by placing the burden on voters.
- **Citizenship Verification Concerns:** A major controversy concerns **whether ECI is indirectly determining citizenship.** Critics contend that citizenship determination falls within the domain of the Ministry of Home Affairs under the Citizenship Act. ECI's role should be limited to electoral administration.
  - SIR may blur the distinction between electoral verification and citizenship determination. The Supreme Court clarified that ECI can examine citizenship questions only for electoral purposes and cannot finally determine citizenship status.
- **Fear of a "Backdoor NRC":** Several civil society groups and political parties alleged that SIR resembles **a de facto National Register of Citizens (NRC).** Requirements relating to birth certificates, legacy records, parentage documentation have raised fears that citizenship scrutiny is being introduced through the electoral process.
  - **States where concerns were raised** Bihar, Assam, West Bengal especially among vulnerable and minority communities.
- **Timing Close to Elections:** Another criticism relates to **conducting intensive revision shortly before elections.**
  - The Bihar SIR was conducted close to Assembly elections. Critics argue that intensive revisions require substantial time. Large-scale verification immediately before elections may create confusion and exclusion.
  - Some legal scholars argue that traditionally only summary revisions are preferred close to elections. Intensive revisions are better suited during non-election periods.
- **Massive Administrative and Logistical Challenges:** India has nearly one billion electors, millions of households, diverse geographical conditions. Booth Level Officers (BLOs) are expected to conduct extensive house-to-house verification within a limited period, increasing the possibility of errors.
- **Documentation Barriers:** Many eligible citizens lack formal birth records, land ownership documents and school certificates. Civil registration systems historically had lower coverage in many rural areas. Documentation-heavy verification disproportionately affects poor households, rural populations, informal workers.

- The Supreme Court's suggestion to permit documents such as Aadhaar, Voter ID, Ration Card was partly intended to address this concern.

○ **Migrant Workers at Risk:** India experiences one of the world's largest internal migration flows. Migrants often change residences frequently, lack local documentation and remain absent during verification visits. Risk of deletion from original constituency and failure to enrol in destination constituency. This could significantly affect electoral participation.

○ **Uneven Implementation Across Regions:** Implementation quality depends heavily on BLO efficiency, local administration and availability of resources. Procedures may vary across districts, constituencies and states leading to inconsistency, arbitrary decisions, differential treatment of voters.

○ **Transparency and Due Process Concerns:** Critics argue that voters may not always receive adequate notice, deletions may occur without meaningful hearing, appeals mechanisms may be inaccessible for vulnerable citizens.

- Raises concerns regarding natural justice, procedural fairness, Article 14 (equality before law) and Article 21 (due process and dignity).

○ **Political Polarisation and Trust Deficit:** The SIR has become politically contentious. Opposition parties have alleged selective targeting, potential voter suppression and lack of consultation. Meanwhile, supporters view SIR as necessary for electoral integrity.

○ **Contradiction Between Inclusion and Purification:** The ECI seeks to include all eligible voters and remove all ineligible voters. However, these objectives can sometimes conflict. A highly stringent verification process may improve accuracy but increase exclusion risks. This creates the challenge of balancing **Electoral Purity vs Universal Adult Suffrage**

○ **Constitutional Concerns Raised Before the Supreme Court:** Petitioners in **ADR v. ECI (2025–26)** argued that SIR violated:

- **Article 14** arbitrariness and unequal treatment.
- **Article 19, i**ndirect impact on democratic participation.
- **Article 21, p**rocedural fairness concerns.
- **Articles 325 and 326, t**hreat to universal adult suffrage.
- The Supreme Court ultimately rejected these challenges and upheld the SIR.

KEY FINDINGS OF THE SUPREME COURT:

In **Association for Democratic Reforms (ADR) & Others v. Election Commission of India (2025–26)**, the Supreme Court upheld the legality and constitutionality of the **Special Intensive Revision (SIR)** of electoral rolls conducted by the Election Commission of India (ECI).

○ **ECI Has the Constitutional Power to Conduct SIR:** The Court held that **Article 324** of the Constitution grants broad powers to the ECI over preparation and revision of electoral rolls.

- **Section 21(3) of the Representation of the People Act, 1950** empowers the ECI to order a special revision of electoral rolls. Therefore, the ECI was competent to undertake the SIR exercise.

○ **SIR Serves a Legitimate Constitutional Purpose:** The Court held that the objective of SIR is maintaining the accuracy and purity of electoral rolls, ensuring free and fair elections, protecting the integrity of the democratic process. According to the Court, an accurate electoral roll is the foundation of electoral democracy.

- **SIR Satisfies the Test of Proportionality:** The Court applied the constitutional doctrine of proportionality and held that SIR meets all three requirements:
- **ECI Can Examine Citizenship Questions for Electoral Purposes:** One of the most important findings was that ECI may examine issues relating to citizenship when deciding whether a person is eligible to be included in the electoral roll. However, the ECI cannot finally determine citizenship status.
    - The Court clarified the ECI's determination is limited to electoral enrolment and does not amount to a final adjudication of citizenship under the Citizenship Act. Final authority regarding citizenship remains with the Ministry of Home Affairs and competent authorities under citizenship laws.
- **Right to Vote is Subject to Statutory Conditions:** The Court reiterated that the right to vote is a **statutory right**, not a fundamental right. Inclusion in electoral rolls depends on satisfying statutory requirements such as citizenship, age (18+), ordinary residence and absence of legal disqualifications.
- **Statewide SIR is Permissible:** Petitioners argued that special revision under Section 21(3) should be limited to a constituency or part of a constituency. The Court rejected this argument and accepted the ECI's view that the power of special revision can extend to all constituencies within a State if circumstances justify it.
- **Adequate Procedural Safeguards Exist:** The Court noted that SIR contains several safeguards house-to-house verification, publication of draft rolls, claims and objections, appeals before competent authorities and judicial review where necessary. Therefore, the Court found no violation of due process.
- **Rejected Challenges Based on Articles 14, 21, 325 and 326:** The Court rejected arguments that SIR was arbitrary (Article 14), violated due process (Article 21) and undermined universal adult suffrage (Articles 325 and 326).
- **Electoral Integrity Must Be Protected:** The Court emphasised that electoral rolls must contain only eligible voters, duplicate, shifted, deceased and ineligible voters must be removed and maintaining clean electoral rolls is an essential component of free and fair elections.

PRACTICE QUESTION

Q. Examine the need for Special Intensive Revision in India electoral system. Discuss the concerns associated with its implementation in light of the recent Supreme Court judgment. (15 marks, 250 words)

APPROACH

Q. Examine the need for Special Intensive Revision in India electoral system. Discuss the concerns associated with its implementation in light of the recent Supreme Court judgment. (15 marks, 250 words)

Introduction → Start with SIR and mention the case law

Body → Explain the need of SIR; Explain the challenges

Conclusion → Provide way forward and conclude

MODEL ANSWER

The **Special Intensive Revision (SIR)** is a comprehensive voter-verification exercise conducted by the Election Commission of India (ECI) to update and authenticate electoral rolls through house-to-house verification. In **ADR v. ECI (2025–26)**, the Supreme Court upheld the constitutional validity of SIR, holding that the ECI has the authority under **Article 324** and **Section 21(3) of the Representation of the People Act, 1950** to undertake such an exercise.

Need for SIR

- Ensures **free and fair elections** through accurate and credible electoral rolls.
- Removes **duplicate, bogus, deceased and shifted voters**, thereby strengthening the principle of *"One Person, One Vote"*.
- Facilitates inclusion of **first-time voters, women, migrants, tribals and persons with disabilities**.
- Addresses demographic changes caused by **urbanisation and large-scale migration**.
- Prevents enrolment of **non-citizens**, as prohibited under **Section 16 of the RP Act, 1950**.
- Enhances public confidence in electoral democracy by improving roll integrity.

Concerns Associated with SIR

- Risk of **disenfranchisement** of genuine voters lacking documentary proof.
- Greater burden on vulnerable groups such as **SCs, STs, migrants, minorities and the elderly**.
- Concerns that citizenship verification may indirectly resemble a **"backdoor NRC"**.
- Extensive documentation requirements may exclude poor and informal-sector workers.
- Conducting SIR close to elections may create administrative confusion and voter exclusion.
- Uneven implementation by Booth Level Officers may result in arbitrary deletions.
- Raises concerns relating to **Articles 14, 21, 325 and 326** regarding equality, due process and universal adult suffrage.

Supreme Court's Stand

The Court held that:

- SIR serves a **legitimate constitutional purpose** of maintaining electoral purity.
- It satisfies the **test of proportionality**.
- ECI may examine citizenship questions for electoral purposes but cannot finally determine citizenship.
- Adequate safeguards exist through claims, objections, appeals and judicial review.

While clean electoral rolls are essential for democratic legitimacy, electoral reforms must not come at the cost of voter exclusion. The challenge lies in balancing **electoral integrity with universal adult suffrage**, ensuring that no eligible citizen is denied the right to participate in the democratic process.

3. RIGHT TO BE FORGOTTEN

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity

REFERENCE NEWS:

- Recently, the Delhi High Court has held that the **"right to be forgotten"** flows from the **constitutional right to privacy under Article 21** and enables individuals to seek removal of personal information from public digital accessibility when it no longer serves a legitimate public purpose.

REFERENCE NEWS:

- The judgment was delivered by **Justice Sachin Datta** while deciding a batch of petitions filed by individuals whose **names continued to appear in online judicial records despite acquittal**, discharge, quashing, settlement, matrimonial disputes, or incidental mention in court proceedings.
- The Court held that individuals may seek **de-indexing of personal information from search engines, legal databases and online platforms** when its continued public accessibility no longer serves any legitimate public purpose.
- Importantly, the Court clarified that this does **not mean deletion of judicial records**; rather, it restricts easy name-based discoverability of such records through search engines.
- The Court directed search engine operators and legal database platforms such as **Google and Indian Kanoon** to de-index specified judgments, orders and related news articles from name-based searches and **disable name-based search functionality** in relation to such records.

RIGHT TO BE FORGOTTEN:

- The right to be forgotten (RTBF) means that an individual can **request that certain personal information be removed, masked, or de-indexed from public digital access** when its continued availability causes disproportionate harm and no longer serves public interest.
- It **does not mean complete deletion of judicial records**.
- Rather, it means reducing the easy visibility of such records through name-based searches.
- For example, a **judgment may remain available** on a court website or legal database, but it should **not necessarily appear every time someone searches the person's name on Google or another search engine.**

DISTINCTION BETWEEN DELETION AND DE-INDEXING:

- **Deletion:** Deletion means removing the record itself from the source.
- **De-indexing:** De-indexing means preventing the record from appearing in search results when a person's name is searched.

This balances two competing concerns:

- The **principle of open justice**
- The **individual's right to privacy, dignity and reputation**

OPEN JUSTICE VS PRIVACY:

- The Court recognised that the principle of **open justice** is important in a democracy.
- **Judicial records must remain accessible** to ensure open justice and transparency. However, the Court clarified that this does not mean a **person's name should permanently act as a search key** for old records, especially when search engines can cause continuing harm to reputation and social life.

SIGNIFICANCE OF THE RIGHT TO BE FORGOTTEN:

- **Protects privacy under Article 21:**
  - The right to be forgotten strengthens the **right to privacy**, which was recognised as a fundamental right in **K.S. Puttaswamy v. Union of India, 2017**. It gives individuals **control over personal information** that no longer serves a legitimate public purpose.
- **Upholds dignity and reputation:**
  - Article 21 includes not just physical liberty but also **dignity and reputation**. Old criminal records, matrimonial disputes or settled cases can continue to harm a **person's social and professional life** even after legal closure.
- **Helps acquitted and discharged persons:**
  - In **Jorawar Singh Mundy v. Union of India, 2021**, the Delhi High Court gave relief to an acquitted person whose online case record **affected employment prospects.** This shows that an acquitted person should not face continuing **digital stigma.**
- **Supports informational self-determination:**
  - The right allows individuals to control how their personal data is displayed online. This flows from the idea of **informational privacy** recognised in **Puttaswamy**.
- **Promotes rehabilitation and second chances:**
  - A person who has been acquitted, discharged or whose proceedings were quashed **should be able to move forward** without old records permanently defining their digital identity.
- **Protects vulnerable individuals:**
  - In **Sri Vasunathan v. Registrar General, Karnataka HC, 2017**, the Court allowed **masking of a woman's name** in a sensitive case. This shows the importance of RTBF in protecting privacy **in matrimonial, sexual offence and personal matters.**
- **Balances privacy with open justice:**
  - The recent **Delhi High Court judgment, 2026** clarified that de-indexing does not delete judicial records. It only prevents a person's name from permanently functioning as a search key, thereby balancing **Article 21 privacy** with judicial transparency.

CONSTITUTIONAL BASIS:

The **right to be forgotten** flows mainly from **Article 21**, especially after **K.S. Puttaswamy v. Union of India, 2017**, where the Supreme Court recognised privacy as a fundamental right.
It is linked to:

- Right to privacy
- Right to dignity
- Right to reputation
- Informational self-determination
- Control over personal data

However, it is **not absolute**. It must be balanced with:

- Article 19(1)(a): freedom of speech and expression
- Freedom of press
- Right to information
- Principle of open justice
- Public interest in judicial transparency

The **Digital Personal Data Protection Act, 2023** also gives a limited statutory basis through the right to **correction and erasure of personal data**, though it does not fully define the right to be forgotten.

MAJOR CASES:

- **K.S. Puttaswamy v. Union of India, 2017:** Recognised **right to privacy as a fundamental right** under Article 21. It created the constitutional foundation for the right to be forgotten.
- **Sri Vasunathan v. Registrar General, Karnataka HC, 2017:** Allowed masking of a woman's name in a sensitive case. One of the earliest Indian cases giving RTBF-like relief.
- **Dharamraj Bhanushankar Dave v. State of Gujarat, 2017:** Refused removal of judgment from public domain, holding that judicial records are public documents.
- **Zulfiqar Ahman Khan v. Quintillion, 2019:** Delhi HC observed that the **right to be forgotten and right to be left alone** are part of privacy.
- **Subhranshu Rout v. State of Odisha, 2020:** Recognised the need to protect victims from permanent digital harm caused by circulation of intimate content.
- **Jorawar Singh Mundy v. Union of India, 2021:** Delhi HC granted interim protection to an acquitted person whose online judgment affected employment prospects.
- **Delhi HC Judgment, 2026:** Recognised RTBF as part of **Article 21 privacy** and laid down a framework for **de-indexing judicial records** from name-based searches, while preserving open justice.

CHALLENGES AND CONCERNS ASSOCIATED WITH THE RIGHT TO BE FORGOTTEN:

- **Conflict with freedom of speech under Article 19(1)(a):**
    - The right may conflict with the freedom of speech, press freedom and people's right to know. **Excessive de-indexing** can restrict access to information.
- **Tension with open justice:**
    - Judicial records are public documents. In **Dharamraj Bhanushankar Dave v. State of Gujarat, 2017**, the Gujarat High Court refused removal of a judgment, stressing that court records cannot be casually removed from public access.
- **Risk of misuse by powerful persons:**
    - **Politicians, public servants or influential individuals** may use RTBF to hide corruption, misconduct or matters involving public accountability. This would weaken democratic transparency under **Article 19(1)(a)**.
- **Difficulty in defining public interest:**
    - Courts must decide when privacy outweighs public interest. This is subjective, especially in cases involving public figures, serious crimes or matters of public trust.
- **Possible weakening of press freedom:**
    - In **Zulfiqar Ahman Khan v. Quintillion, 2019**, the Delhi High Court recognised the right to be forgotten and the right to be left alone, but such cases also show the need to **balance reputation with media freedom.**

- **Technical enforcement issues:**
  - Even if content is de-indexed from Google or legal databases, it may still remain available through screenshots, archives, mirror websites or foreign platforms.
- **Absence of a comprehensive legal framework:**
  - India does **not yet have a specific law** clearly defining the full scope, procedure and limits of RTBF. The **DPDP Act, 2023** gives a limited right to erasure, but it does not provide a complete framework for judicial records.
- **Risk of rewriting history:**
  - If applied too broadly, RTBF may lead to selective removal of inconvenient facts and weaken public memory, academic research and institutional accountability.

WAY FORWARD:

- **Enact a clear statutory framework:** India needs a specific law defining the scope, procedure and limits of the right to be forgotten.
- **Use proportionality test:** Courts must balance Article 21 privacy with Article 19(1)(a), open justice and public interest.
- **Case-by-case assessment:** Relief should depend on factors like acquittal, discharge, public role of the person, nature of offence and continuing public interest.
- **Protect judicial transparency:** De-indexing should be preferred over deletion so that court records remain accessible through case number, citation or legal databases.
- **Safeguard public accountability:** RTBF should not be allowed in cases involving corruption, public servants, elected representatives, serious crimes or offences against women and children.
- **Create independent grievance mechanism:** A data protection authority or court-monitored mechanism can decide RTBF claims with clear timelines and appeal provisions.

CONCLUSION:

- The right to be forgotten marks an important step in adapting **Article 21 privacy, dignity and reputation** to the realities of the digital age. The **Delhi High Court's ruling** rightly recognises that individuals should not suffer perpetual digital stigma, especially after acquittal, discharge, quashing or settlement of cases. At the same time, this right **cannot become a tool to erase public memory or dilute open justice**, **press freedom and public accountability under Article 19(1)(a).** Hence, India needs a **clear statutory framework** that balances privacy with transparency through case-by-case assessment, proportionality, and public interest safeguards.

PRACTICE QUESTION

Q. "The right to be forgotten seeks to protect individual privacy and dignity in the digital age, but it also raises concerns". Discuss the significance and challenges of the right to be forgotten in India. (10 marks, 150 words)

APPROACH

Q. "The right to be forgotten seeks to protect individual privacy and dignity in the digital age, but it also raises concerns". Discuss the significance and challenges of the right to be forgotten in India. (10 marks, 150 words)

- **Introduction** → **Start with a definition of Right to be Forgotten.**
- **Body**
  - → Discuss the significance of right to be forgotten
  - → Challenges and concerns
- **Conclusion** → Provide way forward and conclude.

MODEL ANSWER

The **right to be forgotten (RTBF)** means that an individual can request removal, **masking or de-indexing of personal information** from public digital access when its continued availability causes disproportionate harm and no longer serves public interest. Recently, the Delhi High Court recognised RTBF as flowing from **Article 21 privacy**, while clarifying that it **does not mean deletion of judicial records**.

Significance:

1. **Protects privacy under Article 21:** After **K.S. Puttaswamy v. Union of India**, privacy is a fundamental right. RTBF gives individuals control over their personal data.
2. **Upholds dignity and reputation:** Article 21 also includes dignity and reputation. Old criminal, matrimonial or settled disputes should not permanently damage a person's social life.
3. **Prevents digital stigma:** Acquitted or discharged persons should not continue to suffer as if they are guilty. In **Jorawar Singh Mundy v. Union of India**, relief was given to an acquitted person affected by online records.
4. **Promotes rehabilitation:** It helps individuals move beyond past proceedings and supports the idea of a second chance, especially after acquittal, discharge or quashing.
5. **Protects vulnerable groups:** In **Sri Vasunathan v. Registrar General**, masking of a woman's name was allowed in a sensitive matter, showing its relevance in matrimonial and sexual offence cases.
6. **Balances privacy with open justice:** De-indexing does not delete court records; it only restricts easy name-based searchability. Thus, judicial transparency is preserved while reducing disproportionate harm.

Challenges:

1. **Conflict with Article 19(1)(a):** RTBF may restrict freedom of speech, press freedom and the public's right to know.
2. **Tension with open justice:** Judicial records are public documents. In **Dharamraj Bhanushankar Dave v. State of Gujarat**, removal of a judgment was refused on this ground.
3. **Risk of misuse by powerful persons:** Politicians, public servants or influential persons may use RTBF to hide corruption, misconduct or matters of public accountability.
4. **Difficulty in defining public interest:** Courts must decide when privacy outweighs transparency, which can be subjective in cases involving public figures or serious offences.
5. **Technical enforcement issues:** Even if content is de-indexed from search engines, it may remain available through screenshots, archives, mirror websites or foreign platforms.
6. **Absence of a clear legal framework:** The **DPDP Act, 2023** gives a limited right to erasure, but India still lacks a comprehensive law specifically governing RTBF and judicial records.

Way Forward:

- **Frame a clear law:** India needs specific rules on the scope, procedure and limits of RTBF.
- **Apply proportionality test:** Balance **Article 21 privacy** with **Article 19(1)(a)**, open justice and public interest.
- **Prefer de-indexing over deletion:** Judicial records should remain accessible, but not easily searchable by name.
- **Define public interest exceptions:** RTBF should not hide corruption, serious offences, public misconduct or matters involving public officials.
- **Create grievance mechanism:** A clear authority or court-monitored process should decide RTBF requests with timelines and appeal options

RTBF is necessary to protect privacy, dignity and reputation in the digital age. However, it must be applied through a case-by-case balancing test so that it does not weaken open justice, press freedom and public accountability.

4. CRIMINALISATION OF POLITICS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity and Governance

REFERENCE NEWS:

- According to an analysis by the Association for Democratic Reforms and National Election Watch, **31% of sitting Rajya Sabha MPs have declared criminal cases against themselves**, while **16% have declared serious criminal cases**.
- This finding highlights the continuing concern of **criminalisation of politics in India**, even in the Rajya Sabha, which is expected to function as a deliberative and mature Upper House of Parliament.

MORE ON NEWS:

- The analysis covered **226 of the 233 Rajya Sabha MPs**. Four seats from West Bengal were vacant, while three MPs could not be analysed as their affidavits were unavailable.
- Of the 226 MPs analysed, **69 MPs have declared criminal cases**, and **36 MPs have declared serious criminal cases**.
- According to the report, **one sitting Rajya Sabha MP has declared cases related to murder**, **four** have declared cases related to **attempt to murder**, and **four** have declared **cases related to crimes against women.**
- Among major parties, **28 of 107 BJP MPs**, or **26%**, have declared criminal cases. In the Congress, **12 of 29 MPs**, or **41%**, have declared such cases.
- The report also found that **31 out of 226 MPs**, or **14%**, are billionaires, meaning they have declared assets worth more than **₹100 crore**.
- Among major parties, **seven BJP MPs**, **six Congress MPs**, **two YSRCP MPs**, **two TDP MPs**, **two BRS MPs**, and **two NCP MPs** have declared assets above ₹100 crore.

WHAT IS CRIMINALIZATION OF POLITICS?

- Criminalisation of politics refers to the **increasing entry and influence of persons with criminal backgrounds**, pending criminal cases, or links with money and muscle power in the electoral and political process.
- Such individuals may use electoral power, political patronage and public office to **protect their interests, weaken rule of law**, and undermine public trust in democratic institutions.

REASONS FOR CRIMINALISATION OF POLITICS IN INDIA:

- **Criminal-Politician Nexus:**

- A major reason is the nexus between criminals and politicians. **Criminals seek political patronage** to continue their illegal activities and avoid prosecution. Politicians, in turn, **depend on criminals for money power, muscle power and local influence** during elections.
- Over time, **this relationship has changed**. Instead of supporting politicians from outside, **criminal elements themselves began contesting elections** to directly capture state power and enjoy political legitimacy.

- **Winnability Factor:**
  - Political parties often give tickets to candidates **based on their ability to win rather than their integrity.** Candidates with criminal backgrounds may command local influence, caste support, money networks and fear-based mobilisation.
  - ADR data shows that candidates with declared criminal cases often have better chances of winning than candidates with clean backgrounds. This creates a perverse incentive for parties to field tainted but "winnable" candidates.
- **Money and Muscle Power:**
  - **Elections in India are highly expensive**. Candidates with criminal backgrounds often **possess unaccounted wealth and local muscle networks**. They can finance campaigns, mobilise voters, intimidate rivals and influence local power structures.
  - This is strengthened by **opacity in political funding**, cash donations and weak transparency in campaign expenditure.
- **Judicial Delays and Legal Loopholes:**
  - A major reason is the **slow pace of the criminal justice system**. Criminal cases against political candidates may continue for years, allowing them to contest multiple elections before conviction.
  - **Under Section 8** of the **Representation of the People Act, 1951**, disqualification generally applies after conviction, **not merely after the filing of charges.** Hence, candidates with pending cases can continue to contest elections.
  - The phrase **"law will take its own course"** often becomes a convenient defence for political parties and tainted candidates.

- **Weak Governance and Parallel Power Centres:**
  - Poor governance and weak public service delivery also encourage criminalisation. In many areas, **people depend on local strongmen** for quick solutions, dispute settlement, protection, jobs or access to welfare benefits.
  - Such candidates are sometimes viewed as "Robin Hood" figures who can bypass red tape and deliver immediate results, even through extra-legal means.
- **Vote Bank and Identity Politics:**
  - **Caste, religion, region and community loyalties** often override concerns about criminal records. Voters may support a **tainted candidate if he is seen as protecting their community interests.**
  - Thus, criminality is normalised when it is mixed with identity-based mobilisation and patronage politics.
- **Passive Voters and Weak Political Awareness:**

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  - Although candidates are required to disclose criminal cases through affidavits, **many voters do not verify or analyse this information**. Low political literacy, poverty and dependence on local elites reduce the effectiveness of disclosure-based reforms.
  - As a result, **transparency alone does not always lead to electoral accountability.**
- **Lack of Inner-Party Democracy:**
  - Candidate selection in most parties is highly centralised and opaque. Party leadership often **ignores clean grassroots workers and prefers wealthy or locally dominant candidates** who can guarantee electoral success.
  - This weakens internal accountability and allows tainted candidates to enter legislatures.
- **Limited Powers of the Election Commission:**
  - The Election Commission can enforce disclosure norms and monitor elections, but it does **not have the power to debar candidates merely because criminal cases are pending against them**.
  - This institutional limitation makes it difficult to cleanse electoral politics without stronger legislative reforms.

<u>IMPACTS OF CRIMINALISATION OF POLITICS IN INDIA:</u>

- **Undermines Free and Fair Elections:**
  - Criminalisation distorts the **principle of free and fair elections**. Voters may be **influenced through money power, intimidation, caste mobilisation, fear, or local patronage.**
  - This reduces genuine voter choice and weakens the democratic value of electoral competition.
- **Erosion of Rule of Law:**
  - When persons facing serious criminal cases enter legislatures, it **blurs the line between law-makers and law-breakers.**
  - It weakens the constitutional principle of **equality before law under Article 14** and creates a perception that powerful individuals can escape accountability.
- **Weakening of Democratic Institutions:**
  - Criminalised political actors may **interfere in police functioning, bureaucratic transfers, investigation processes and local administration**.
  - This reduces the autonomy of institutions and promotes a culture where loyalty to powerful leaders becomes more important than constitutional duty.
- **Policy Capture and Vested Interests:**
  - The politico-criminal nexus can influence policies, contracts and regulations **in favour of vested interests rather than public welfare.**
  - For example, **sectors like mining, liquor, real estate, sand extraction and local contracts** are often vulnerable to such capture by criminal-political networks.
- **Rise of Corruption and Black Money:**
  - Criminalisation **increases the role of illicit money in elections**. Candidates with criminal backgrounds may use unaccounted wealth to finance campaigns, buy votes and influence local networks.
  - After coming to power, such candidates may **recover election expenditure through corruption, rent-seeking and misuse of public office**.
- **Governance Deficit:**

- Criminalised representatives may focus more on protecting their own cases, networks and patronage systems than on development-oriented governance.
- This diverts attention from welfare delivery, public health, education, infrastructure and administrative reforms.

- **Decline in Integrity of Public Servants:**
  - When political executives with criminal links influence administration, **honest public servants face pressure, transfers or victimisation**. This affects neutrality, integrity and morale within the bureaucracy and police.
- **Loss of Public Trust in Democracy:**
  - The entry of criminal elements into legislatures damages the credibility of Parliament, State Legislatures and political parties. It **creates public cynicism** that politics is mainly about power, money and protection, rather than public service.
- **Marginalisation of Clean Candidates:**
  - Criminalisation discourages honest, capable and service-oriented citizens from entering politics**. Clean candidates may find it difficult to compete against money power, muscle power and entrenched caste-patronage networks.** This lowers the overall quality of political representation.
- **Ethical Impact:**
  - Criminalisation **undermines constitutional morality, probity in public life, accountability and non-partisanship.** It creates a culture of impunity where electoral success becomes more important than ethical conduct, rule of law and public welfare.

MEASURES TAKEN TO CURB CRIMINALISATION OF POLITICS IN INDIA:

Legislative Measures:

- **Representation of the People Act, 1951:**
  - The RPA, 1951 provides for disqualification of candidates and elected representatives on conviction.
  - **Sections 8(1), 8(2) and 8(3)** disqualify persons convicted for specified offences. Such persons remain disqualified during imprisonment and for six years after release.
  - Section 8A deals with disqualification for corrupt practices, while Section 10A provides for disqualification for failure to submit election expenditure accounts.
- **Conduct of Elections Rules, 1961:**
  - Rule 4A requires every candidate to file an affidavit in Form 26 along with nomination papers.
  - This **affidavit must disclose criminal cases, convictions, assets, liabilities and educational qualifications.**
  - It helps voters make an informed electoral choice.
- **Criminal Law Provisions:**
  - Election-related offences such as bribery, undue influence, personation and booth capturing are punishable under criminal law.
  - These provisions aim to protect the fairness of the electoral process.

Judicial Interventions:

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- **ADR v Union of India, 2002:**
  - The Supreme Court held that voters have the right to know the background of candidates.
  - It made disclosure of criminal cases, assets and educational qualifications mandatory.
- **PUCL v Union of India, 2003**
  - The Court upheld voters' right to know as part of Article 19(1)(a).
- **Lily Thomas v Union of India, 2013**
  - The Supreme Court struck down Section 8(4) of the RPA.
  - This led to immediate disqualification of convicted MPs and MLAs.
- **PUCL v Union of India, 2013**
  - The Supreme Court directed the Election Commission to introduce NOTA in EVMs.
- **Public Interest Foundation v Union of India, 2018**
  - The Court directed candidates and political parties to publicise criminal records of candidates.
  - Parties must also explain why such candidates were selected.

Other measures:

- **Election Commission Measures**
  - The Election Commission has made affidavit disclosure mandatory.
  - It enforces the Model Code of Conduct.
  - It monitors election expenditure.
  - It restricts use of arms and muscle power near polling booths.
  - It can order fresh polls in cases of booth capturing or serious malpractice.
- **Special Courts**
  - Special courts have been set up in several states to try criminal cases against MPs and MLAs.
  - This aims to reduce judicial delays and ensure quicker disposal of cases involving elected representatives.
- **Vohra Committee Report**
  - The Vohra Committee examined the criminal-politician-bureaucrat nexus.
  - It warned that criminal networks were operating with political and administrative support, almost like a parallel government.
- **Law Commission Recommendations**
  - The Law Commission recommended disqualification at the stage of framing of charges for serious offences punishable with five years or more.
  - It also suggested safeguards to prevent misuse, such as applying this only when charges are framed at least one year before nomination scrutiny.
- **Recent Initiatives**
  - The Supreme Court is hearing petitions seeking a lifetime ban on convicted MPs and MLAs from contesting elections.
  - The ECI has also required political parties to publicly disclose criminal records of candidates and reasons for their selection.

WAY FORWARD:

- **Time-bound trials:** Criminal cases against MPs and MLAs should be tried in fast-track courts and disposed of within a fixed time frame.

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- **Disqualification at framing of charges:** Candidates charged with serious offences punishable with five years or more may be disqualified, with safeguards to prevent misuse.
- **Strengthen Election Commission:** The ECI should be given greater powers to act against parties that repeatedly field candidates with serious criminal cases.
- **Inner-party democracy:** Political parties must make candidate selection transparent and avoid giving tickets only on the basis of winnability, caste appeal or money power.
- **Transparent political funding:** Election funding should be made more transparent to reduce the role of black money and criminal networks.
- **Stronger affidavit system:** Candidate affidavits should be simplified, widely publicised and made available in local languages for voter awareness.
- **Voter awareness:** Civil society, media and ECI should educate voters to consider criminal records before voting.
- **Police and judicial reforms:** Political interference in investigation, prosecution and transfers must be reduced to ensure impartial law enforcement.

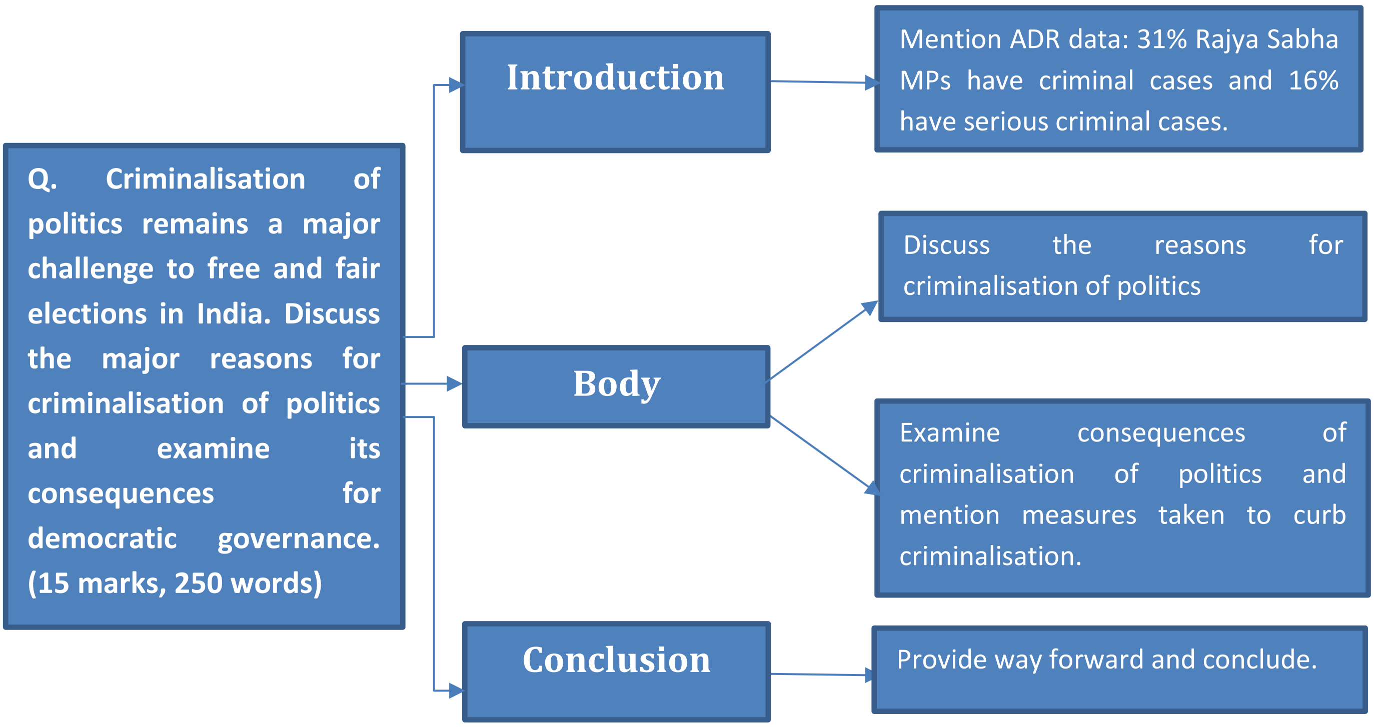
CONCLUSION:

1. Criminalisation of politics weakens free and fair elections, rule of law and public trust in democracy. India has taken important steps through judicial interventions, disclosure norms and special courts, but deeper reforms are needed. Clean politics requires not only legal reform but also ethical political parties, aware voters and faster justice delivery.

PRACTICE QUESTION

Q. Criminalisation of politics remains a major challenge to free and fair elections in India. Discuss the major reasons for criminalisation of politics and examine its consequences for democratic governance. (15 marks, 250 words)

APPROACH



MODEL ANSWER

According to an analysis by the Association for Democratic Reforms and National Election Watch, **31% of sitting Rajya Sabha MPs have declared criminal cases**, while **16% have declared serious criminal cases**. This shows that criminalisation of politics remains a major challenge to free and fair elections in India. Criminalisation of politics refers to the increasing entry and influence of persons with criminal backgrounds, pending criminal cases or links with money and muscle power in the electoral process.

Reasons for Criminalisation of Politics:

1. **Criminal-Politician Nexus:** Criminals seek political patronage to continue illegal activities and avoid prosecution. Politicians, in turn, depend on them for money power, muscle power and local influence during elections.
2. **Winnability Factor:** Political parties often give tickets to candidates based on their ability to win rather than their integrity. Candidates with criminal backgrounds may have caste support, local dominance and fear-based mobilisation.
3. **Money and Muscle Power:** Elections in India are expensive. Candidates with criminal networks can finance campaigns, mobilise voters, intimidate rivals and influence local power structures.
4. **Judicial Delays and Legal Loopholes:** Under the Representation of the People Act, 1951, disqualification generally applies after conviction. Since trials often continue for years, candidates with pending cases can contest multiple elections.
5. **Vote Bank and Identity Politics:** Caste, religion and community loyalties often override concerns about criminal records. Local strongmen are sometimes seen as protectors of community interests.
6. **Weak Governance:** Poor service delivery makes people depend on local strongmen for quick solutions, dispute settlement and access to welfare benefits. This allows criminal elements to become parallel power centres.
7. **Lack of Inner-Party Democracy:** Candidate selection in parties is often centralised and opaque. Parties may prefer wealthy and influential candidates over clean grassroots workers.

Consequences of Criminalisation of Politics:

1. **Undermines Free and Fair Elections:** Criminalisation distorts electoral competition through intimidation, vote-buying, fear and misuse of money power. This weakens genuine voter choice.
2. **Erosion of Rule of Law:** When persons facing serious criminal cases enter legislatures, the line between law-makers and law-breakers gets blurred. It weakens equality before law and public faith in justice.
3. **Weakening of Democratic Institutions:** Criminalised leaders may interfere in police functioning, bureaucratic transfers and investigations. This reduces institutional autonomy and administrative neutrality.
4. **Rise of Corruption and Black Money:** Criminalisation increases the use of illicit money in elections. After winning, such representatives may recover election expenditure through corruption and rent-seeking.
5. **Governance Deficit:** Representatives may focus more on protecting personal cases and patronage networks than on development, welfare delivery and public interest.

6. **Loss of Public Trust:** The entry of criminal elements into legislatures damages the credibility of Parliament, State Legislatures and political parties. It creates cynicism towards democracy.
7. **Marginalisation of Clean Candidates:** Clean candidates find it difficult to compete against money power, muscle power and caste-patronage networks. This lowers the quality of political representation.

Measures to Curb Criminalisation:

- **Representation of the People Act, 1951** provides for disqualification after conviction.
- **Candidate affidavits** disclose criminal cases, assets and liabilities.
- **ADR judgment** made candidate disclosure mandatory.
- **Lily Thomas case** ensured immediate disqualification after conviction.
- **ECI** requires parties to publicise criminal records of candidates.
- **Special courts** have been set up to try cases against MPs and MLAs.

Way Forward:

- Ensure time-bound trials of cases against legislators.
- Disqualify candidates at the stage of framing of charges for serious offences, with safeguards.
- Strengthen the powers of the Election Commission.
- Promote inner-party democracy in candidate selection.
- Make political funding more transparent.
- Create voter awareness in local languages.

Criminalisation of politics weakens free and fair elections, rule of law and democratic accountability. Clean politics requires legal reforms, ethical political parties, aware voters and faster justice delivery.

5. SIMULTANEOUS ELECTIONS ("ONE NATION, ONE ELECTION")

iMPACT ANALYSIS

SYLLABUS:

GS 2> Polity > Election > Electoral reforms

REFERENCE NEWS:

- Recently, the Government has intensified efforts to build consensus on **One Nation, One Election**, with the **39-member JPC** continuing consultations on the **Constitution 129th Amendment Bill, 2024** and the **Union Territories Laws Amendment Bill, 2024**.
- The JPC's tenure has been extended till the **first day of the last week of the Monsoon Session, 2026**, allowing more time for stakeholder consultations and report finalisation.

MORE ON NEWS:

- In May 2026, the JPC Chairman **P. P. Chaudhary** said that simultaneous elections could save nearly **₹7 lakh crore**, improve governance efficiency and increase India's GDP growth by up to **1.6%**.
- Prime Minister Narendra Modi also recently reiterated that **One Nation, One Election** remains part of the BJP's unfinished reform agenda, along with women's reservation and the Uniform Civil Code.
- The issue has gained renewed significance as the Centre is reportedly exploring wider parliamentary support before the **2029 Lok Sabha elections**, while Opposition parties continue to raise concerns over federalism, Assembly autonomy and regional representation.

> **A Joint Parliamentary Committee (JPC)** is set up by the Parliament for a **special purpose**, like the detailed scrutiny of a subject or Bill. As the name suggests, it has members from **both the Houses (Lok Sabha and the Rajya Sabha)** and from the ruling parties and the opposition. It is dissolved after its term ends or its task has been completed.
> Some examples of joint committees include one on the **Waqf Amendment Bill, 2024**, set up in August 2024, and on **The Personal Data Protection Bill of 2019**. Others are mandated to **investigate alleged irregularities**, such as of a financial nature.

PROVISIONS OF THE TWO BILLS:

1. The Constitution (One Hundred and Twenty-Ninth Amendment) Bill, 2024

This bill focuses on laying the constitutional foundation for **One Nation, One Election (ONOE)** by aligning the election cycles of the **Lok Sabha** and **state Assemblies**.

Key Provisions:

- **New Article 82A(1-6)**:
  - Establishes the framework for simultaneous elections.
  - Authorizes the **President** to set the date for implementing simultaneous polls.
  - Ensures that state Assembly terms align with the Lok Sabha's term.
  - Entrusts the **Election Commission of India (ECI)** with conducting synchronized elections.
- **Amendments to Existing Articles**:

- **Article 83**: Specifies that if the Lok Sabha is dissolved early, the **next Lok Sabha will only serve the remaining term** of the dissolved House.
- **Article 172**: Mirrors Article 83 but applies to **state Assemblies**.
- **Article 327**: Grants Parliament the authority to legislate on simultaneous elections.

- **Term Adjustment**:
  - Provisions to shorten or extend terms of Assemblies and the Lok Sabha to synchronize their election cycles.

2. The Union Territories Laws (Amendment) Bill, 2024

This bill is designed to bring **Union Territories (UTs)** into the ONOE framework by updating their governance laws to match the proposed simultaneous election system.

Key Provisions:

- **Amendments to Specific Acts**:
  - **Government of Union Territories Act, 1963**: Ensures that UT elections align with ONOE timelines.
  - **Government of the National Capital Territory of Delhi Act, 1991**: Integrates Delhi's election schedule with the ONOE framework.
  - **Jammu and Kashmir Reorganisation Act, 2019**: Synchronizes elections in Jammu & Kashmir with ONOE principles.

> The proposed amendments are in line with the recommendations by the **High-Level Committee** on One Nation, One Election chaired by **former President Ram Nath Kovind,** which submitted its report to President Droupadi Murmu in March 2024.

WHAT IS MEANT BY SIMULTANEOUS ELECTIONS?

- Simultaneous elections popularly referred to as **"One Nation, One Election,"** mean holding elections to the Lok Sabha, all state legislative assemblies, and urban and rural local bodies (municipalities and panchayats) at the same time.
- In such a scenario, a voter would **normally cast his/her vote for electing members of Lok Sabha and State Assembly on a single day** and at the same time.

> As of now, the bill proposes simultaneous elections for the Lok Sabha and state Assemblies, **excluding local bodies** such as municipal corporations and panchayats.

BACKGROUND:

- Simultaneous elections are **not a novel concept in India.** The **elections in 1952, 1957, and 1962 were held simultaneously.** The cycle was disrupted due to the premature dissolution of some State Assemblies in **1968 and 1969**, and the premature dissolution of the Fourth Lok Sabha in **1970**.
- Subsequently, due to defections and counter-defections between parties, several legislative assemblies were dissolved post-1960, which eventually led to separate polls for the Lok Sabha and state assemblies.
- In the 2024 election cycle, Assembly elections in **Arunachal Pradesh, Sikkim, Andhra Pradesh and Odisha** were held along with the Lok Sabha elections.
- The proposal to revert to ONOE was **initially introduced in 1983 by the Election Commission and later by the Law Commission in its 1999 Report**.
- However, the **pace started picking up after its mention in the BJP manifesto** for the 2014 Lok Sabha polls.

- In 2023, a **high-level committee chaired by former President Ram Nath Kovind** was constituted to explore the feasibility of ONOE.
- The Union Cabinet accepted the committee's recommendations and introduced **two bills in Parliament in December 2024** to facilitate the implementation of simultaneous elections.

NEED FOR SIMULTANEOUS ELECTION (ONE NATION ONE ELECTION)

- **Indian polity is perennially in an election mode:**
    - Barring a few years within a normal 5-year tenure of the Lok Sabha, the country witnesses, on an average, **elections to about 5-7 State Assemblies every year.**
- **Reduce election expenditure:**
    - Frequent elections impose repeated costs on governments, political parties and administrative machinery. Simultaneous elections can optimise such expenditure through shared logistics and synchronised polling.
    - For instance, JPC Chairman **P. P. Chaudhary** recently claimed it could save nearly **₹7 lakh crore** and boost GDP growth by up to **1.6%**.
- **Promote good governance**:
    - As elections are frequent, parties and governments are always in campaign mode. If simultaneous elections are held, it will **give a clear five years to the political parties to focus on governance.**
- **Promote developmental work**:
    - The **model code of conduct** curtails some powers of an incumbent government during elections, resulting in delays in implementing welfare schemes which are already underway. A single election can **restrict this delay to once every five years.**
- **Better manpower management:**
    - Frequent elections lead to a **lock-in of CAPF and state police forces for prolonged periods**. This takes away a portion of the force which could otherwise be better deployed for other internal security purposes. Synchronised polls will **reduce the frequency of diversion of forces from their normal duties.**
- **Invisible and incalculable socio-economic costs:**
    - Due to election duties, each election also means **teachers missing from schools and colleges**, the entire revenue machinery on election-related work, officers and vehicles put to use on elections
- **Break Politics-corruption nexus**:
    - As elections happen frequently, **political parties are constantly looking for the inflow of funds.** This is considered as one of the **key drivers for corruption and black-money** in the country. Simultaneous elections could open up possibilities to address the above systemic problems.
- **Break the perpetual cycle of social evils**:
    - Elections are polarizing events which have accentuated casteism, communalism, corruption and crony capitalism. **If the country is perpetually on election mode, there is no respite from these evils**.
- **Reduce disruption of public life:**

- Frequent elections lead to disruption of normal public life and impact the functioning of essential services. **Eg: Holding of political rallies disrupts road traffic** and also leads to **noise pollution.**
- If simultaneous elections are held, this period of disruption would be limited to a certain pre-determined period of time.

- **Promote competitive populism:**
  - Given the desperation of parties to win elections, **there is a tendency to squander resources on short-term, unproductive freebies at the cost of infrastructure, quality education** and healthcare. This can be reduced to a great extend through simultaneous elections.

CHALLENGES TO IMPLEMENTATION:

- **Synchronizing elections:**
  - The terms of a large number of state assemblies **will have to be curtailed/extended for synchronisation of the state elections** with that to the Lok Sabha.
  - Synchronizing the election calendar in any given state with that of the Centre **would deprive a state of one of the essential elements of Westminster democracy** - A government may choose to dissolve itself, or **a government may fall if it loses its majority.**

- **Legislative changes:**
  - ONOE requires a major overhaul of the existing legal framework, including amendments to the Constitution, the Representation of the People Act, 1951, and the Rules of Procedure of the Lok Sabha and State Assemblies. The Constitution 129th Amendment Bill, 2024 proposes a new **Article 82A** and changes to **Articles 83, 172 and 327** to deal with the terms, dissolution and synchronisation of the Lok Sabha and State Assemblies.
- **Attaining consensus:**
  - To create a **workable framework, support and consensus from opposition parties, state governments, regional parties** and pressure groups is needed. This would be challenging, given the wide diversity of Indian politics.
- **Inadequate manpower:**
  - There is a **dearth of security and administrative officials to conduct simultaneous free and fair elections** throughout the country in one go.
  - **For example,** according to a report issued by Common Cause in 2019, the **Indian police force is at only 77% of its sanctioned strength.**
- **Operational challenges:**
  - Conducting synchronised elections would require large-scale availability of **EVMs, VVPATs, polling personnel, security forces, transport and storage facilities**.

CONCERNS OVER SIMULTANEOUS ELECTIONS:

- **Against federalism:**
  - Clubbing elections amounts to **diluting federal system in favor of centralization.**
  - This **leads to homogenization of the country**, instead of bringing equity, sustaining plurality, and promoting local and regional leadership.
- **Erosion of accountability:**

- Having to **face electorate more than once every 5 year** enhances the accountability of politicians and parties. It often forces governments to reconsider their plans and policies after each election. **But simultaneous election would give governments immunity from public scrutiny.**
- **Impact on voter behaviour:**
  - Not all voters are highly educated to know who to vote for. **There is a high chance that the voter will vote for the same party** for both the state and centre.
- **Sidelines regional parties and issues:**
  - In simultaneous elections, **the national narrative submerges the regional story,** which **pushes smaller parties, local issues and the concerns of marginalized communities to the sidelines**
- **Diversity of India:**
  - The Law Commission's recommendations of simultaneous elections specifically **drew from countries like Sweden, Belgium and South Africa.** Unlike India, they are relatively small, less diverse nations and the electoral systems are based on proportional representation. Hence, the applicability of such models in India are questionable.
- **No effect on individual election expenses:**
  - Simultaneous elections cannot bring down the expenses of the candidates. **Practical experience shows that candidates would be spending the same amount** by adopting innovative methods.

WAY FORWARD:

- **Build political consensus:** Hold wider consultations with national parties, regional parties, State governments and civil society to ensure that ONOE does not appear as a unilateral centralising reform.
- **Protect federalism:** Ensure that State Assembly autonomy, regional issues and the federal balance are not weakened while synchronising elections.
- **Create legal clarity:** Provide clear constitutional and legal mechanisms to deal with premature dissolution of the Lok Sabha or State Assemblies, no-confidence motions and hung houses.
- **Strengthen election infrastructure:** Ensure adequate availability of EVMs, VVPATs, security forces, polling officials, transport, storage and counting infrastructure.
- **Phase-wise implementation:** As suggested by the high level committee chaired by former President Ram Nath Kovind, NITI Aayog and parliamentary committees, ONOE should be implemented only through a carefully planned, consensus-based and phased approach rather than an abrupt nationwide rollout.
- **Voter awareness:** Conduct voter education campaigns so that citizens can clearly distinguish between national and state-level issues while voting.

CONCLUSION:

- One Nation, One Election can **reduce election expenditure, improve governance continuity and minimise repeated disruptions** caused by frequent polls. However, it must be implemented only through consensus, **constitutional safeguards and strong protection of federalism**, Assembly autonomy and regional political representation.

PRACTICE QUESTION

Q. "Frequent elections affect governance, expenditure and administrative efficiency, but simultaneous elections raise concerns over federalism and democratic accountability." Discuss the need for One Nation, One Election and the challenges associated with its implementation. (15 marks, 250 words)

APPROACH

Q. "Frequent elections affect governance, expenditure and administrative efficiency, but simultaneous elections raise concerns over federalism and democratic accountability." Discuss the need for One Nation, One Election and the challenges associated with its implementation. (10 marks, 150 words)

Introduction → Start the introduction by defining One Nation, One Election in one line.

Body → Discuss the need for One Nation, One Election → Challenges and concerns

Conclusion → Provide way forward and conclude.

MODEL ANSWER

One Nation, One Election (ONOE) refers to holding elections to the Lok Sabha and State Legislative Assemblies together, so that voters elect representatives for both levels within the same election cycle. Recently, the Government renewed its **ONOE** push, with a **39-member Joint Parliamentary Committee (JPC)** examining the **2024 implementation Bills** and its term extended till the **Monsoon Session, 2026**.

Need for ONOE:

1. **Reduces election expenditure:** Frequent elections impose repeated costs on governments, parties and administrative machinery. JPC Chairman P. P. Chaudhary recently claimed that ONOE could save nearly ₹7 lakh crore and improve GDP growth by up to 1.6%.
2. **Improves governance focus:** Governments remain in continuous campaign mode due to recurring elections. Synchronised polls may provide a stable five-year window for policy implementation.
3. **Limits MCC disruptions:** Repeated imposition of the Model Code of Conduct can delay new policy decisions and developmental announcements.
4. **Better manpower management:** Frequent elections require repeated deployment of CAPFs, police, teachers, officials and vehicles. ONOE can reduce such recurring administrative diversion.

5. **Reduces political polarisation:** Continuous elections often intensify caste, communal and regional mobilisation.

Challenges and Concerns:

1. **Federalism concerns:** Simultaneous elections may centralise the political narrative and weaken state-specific issues.
2. **Assembly autonomy:** Aligning State Assembly terms with Lok Sabha may affect the independent constitutional identity of States.
3. **Legal complexity:** ONOE requires amendments to Articles 82A, 83, 172 and 327, along with changes in election laws.
4. **Premature dissolution:** Handling hung houses, no-confidence motions and early dissolution remains complicated.
5. **Operational burden:** Large-scale availability of EVMs, VVPATs, polling personnel and security forces is required.

Way Forward:

- Build broad consensus among national parties, regional parties and State governments.
- Protect federalism, Assembly autonomy and regional political space.
- Create clear rules for premature dissolution and hung assemblies.
- Strengthen election infrastructure before implementation.
- Introduce ONOE in phases, with voter awareness campaigns.

ONOE can improve administrative efficiency and governance continuity, but it must not weaken India's federal and democratic foundations. A consensus-based, phased and constitutionally safeguarded approach is essential.

6. NATIONAL FAMILY HEALTH SURVEY – 6

iMPACT ANALYSIS

SYLLABUS:

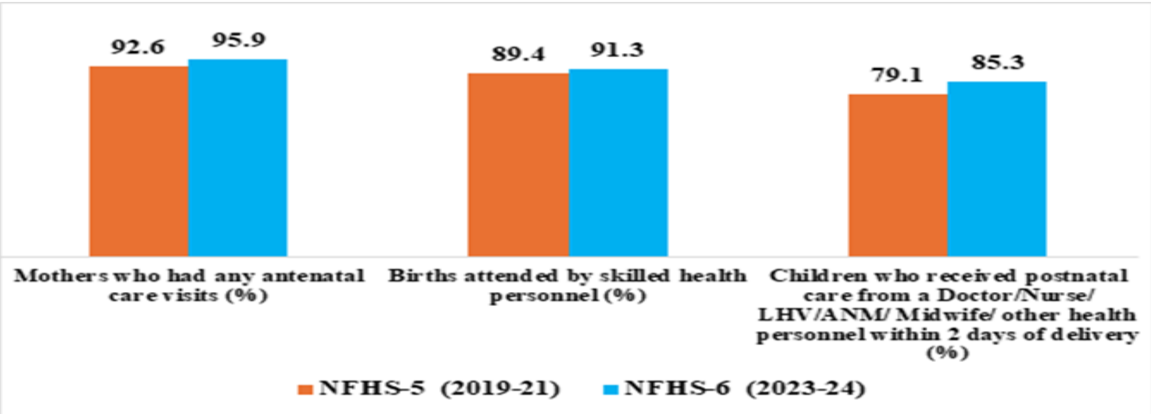
GS 2 > Social Justice > Health

REFERENCE NEWS:

- Recently, the Ministry of Health and Family Welfare (MoHFW) released the National Family Health Survey-6.
- The NFHS-6 was **conducted during 2023-24** by MoHFW with the International Institute for Population Sciences (IIPS), Mumbai as the nodal agency. Covering nearly **6.79 lakh households** across 715 districts, the survey provides vital evidence on population, health, nutrition and family welfare indicators and supports evidence-based planning and programme implementation up to the district level.

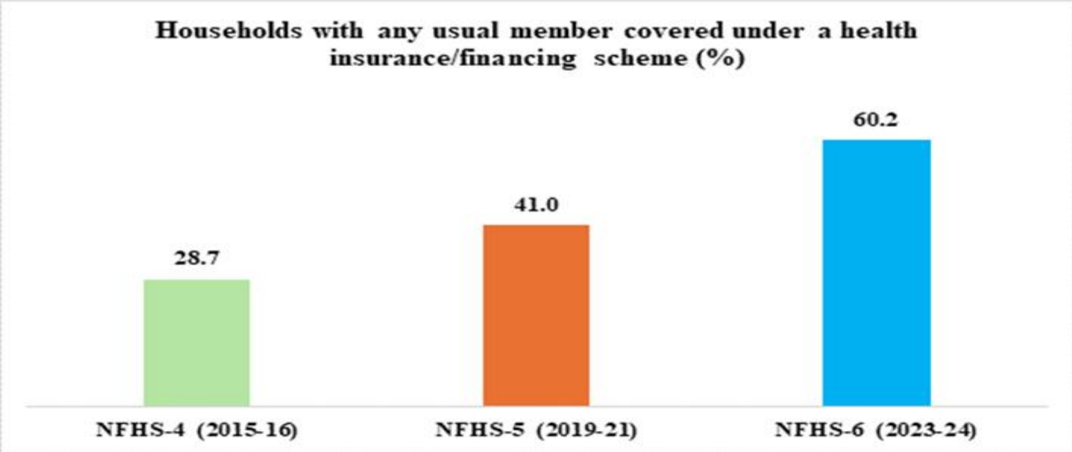
KEY FINDINGS OF NATIONAL FAMILY HEALTH SURVEY-6:

- **Maternal Healthcare Improved:**
  - NFHS-6 shows strong improvement in maternal healthcare access and continuity of care.
  - **Antenatal care coverage** increased from **92.6% to 95.9%**.
  - Mothers receiving **ANC in the first trimester** increased from **70.0% to 76.2%**.
  - Mothers receiving **at least four ANC visits** increased from **58.5% to 65.2%**.
  - **Institutional deliveries** rose from **88.6% to 90.6%**.
  - Births attended by **skilled health personnel** increased from **89.4% to 91.3%**.
  - Postnatal care for newborns within two days of delivery improved from **79.1% to 85.3%**.



- **Maternal Nutrition Showed Progress:**
  - Mothers consuming **iron-folic acid supplements for 100 days or more** increased from **44.1% to 54.9%**.
  - Mothers consuming supplements for **180 days or more** increased from **26.0% to 37.8%**.
- **Fertility and Family Planning Remain Stable:**
  - Family planning indicators show steady improvement.
  - India's **Total Fertility Rate remains at 2.0**.

- **Contraceptive Prevalence Rate** increased from **66.7% to 69.1%**.
- **Health Insurance Coverage Expanded:**
    - NFHS-6 shows a major increase in financial protection for healthcare.
    - Household-level **health insurance or financing scheme coverage** increased from **41.0% to 60.2%**.



- **Child Immunisation Strengthened:**
    - NFHS-6 shows significant progress towards universal immunisation.
    - Full vaccination coverage among children aged **12–23 months** increased from **83.8% to 87.1%**.
    - Children receiving **any vaccine** remained consistently above **96%**.
    - **95.6% of children received most vaccinations through public health facilities**.
    - **Rotavirus vaccination coverage** more than doubled from **36.4% to 85.4%**.
    - Second dose of measles-containing vaccine increased from **58.6% to 71.8%**.
- **Child Health Indicators Improved:**
    - NFHS-6 records improvement in some key child morbidity indicators.
    - Symptoms of **acute respiratory infection** among children declined from **2.8% to 1.9%**.
    - Prevalence of **severe diarrhoea** declined to **0.5%**.
- **Child Nutrition Improved, But Concerns Remain:**
    - NFHS-6 shows a positive trend in child nutrition, especially in stunting and severe wasting.
    - **95.6% of children under six months** were breastfed during the survey period.
    - Children breastfed within one hour of birth increased from **41.8% to 50.1%**.
    - **Stunting** among children under five declined from **35.5% to 29.3%**.
    - This reflects a **17% reduction in stunting**.
    - **Severe wasting** declined from **7.7% to 5.2%**.
    - This reflects a **32% reduction in severe wasting**.
    - **Underweight prevalence** declined marginally from **32.1% to 31.8%**.
    - Children aged **6–8 months** receiving solid or semi-solid food along with breastmilk increased from **45.9% to 59.5%**.
- **Women's Digital and Financial Inclusion Improved:**
    - Women who had ever used the internet nearly doubled from **33.3% to 64.3%**.
    - Women having a bank or savings account that they themselves use increased from **78.6% to 89.0%**.
    - Women having a mobile phone that they themselves use increased from **53.9% to 63.6%**.
- **Menstrual Hygiene Improved Marginally:**

    - Use of hygienic methods of menstrual protection among women aged **15–24 years** increased from **77.6% to 79.2%**.
- **Public Health System Gained Trust:**
    - A major finding of NFHS-6 is the continued importance of the public healthcare system.
    - **95.6% of children received most vaccinations through public health facilities**.
    - Institutional deliveries crossed **90%**.
    - ANC coverage reached **95.9%**.
    - Full immunisation increased to **87.1%**. .
- **Major Schemes Reflected in NFHS-6 Gains:**
    - NFHS-6 improvements are linked to several flagship interventions:
        - **Maternal health:** JSY, JSSK, PMSMA, SUMAN, PMMVY 2.0.
        - **Newborn care:** Facility-Based New-born Care, Home-Based Newborn Care.
        - **Immunisation:** Universal Immunization Programme, U-WIN.
        - **Nutrition:** POSHAN Abhiyaan, Saksham Anganwadi and POSHAN 2.0, ICDS, NRCs.
        - **Financial protection:** Ayushman Bharat-PMJAY.
        - **Women's health:** Menstrual Hygiene Scheme, Janaushadhi Pariyojana.
        - **Family planning:** Mission Parivar Vikas.
- **Emerging Concerns Highlighted:**
    - Despite progress, NFHS-6 points to some continuing and emerging challenges.
    - Rising **non-communicable diseases**.
    - Lifestyle-related health risks.
    - Dual burden of **undernutrition and overweight/obesity**.
    - Slow reduction in underweight prevalence among children.
    - Need for greater focus on preventive healthcare and behavioural change.

<u>POSITIVE TRENDS IN NFHS-6:</u>

- **Strengthening of public health delivery:**
    - A major positive is the continued centrality of public health facilities in essential service delivery. This reflects improved last-mile reach through ASHAs, ANMs, Anganwadi workers, PHCs and digital systems such as U-WIN.
    - For instance, **95.6% of children received most vaccinations through public health facilities.**
    - This indicates strong community reliance on government health infrastructure for preventive healthcare.
- **Safe motherhood becoming more mainstream:**
    - NFHS-6 reflects progress in the continuum of maternal care, **from antenatal care to institutional delivery and postnatal support.** This suggests that maternal health is being addressed **not only at the point of childbirth** but throughout pregnancy and early newborn care.
    - For instance, **ANC coverage rose to 95.9%, Institutional deliveries rose to 90.6%.** This is important for reducing maternal and neonatal risks.
- **Immunisation system becoming more reliable:**
    - The improvement in full immunisation and rotavirus vaccination shows better vaccine delivery, cold-chain management, frontline mobilisation and follow-up.
        - **Full immunisation:** 83.8% → 87.1%

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        - **Rotavirus coverage:** 36.4% → 85.4%
    - This shows that India's immunisation system is improving not just in reach but also in completeness.
- **Nutrition outcomes show structural improvement:**
    - The **decline in stunting and severe wasting** is one of the most significant positives. Stunting reflects long-term nutritional deprivation, while wasting reflects acute nutritional stress. Improvement in both suggests that nutrition interventions are beginning to produce deeper health outcomes.
        - **Stunting:** 35.5% → 29.3%
        - **Severe wasting:** 7.7% → 5.2%
    - This reflects the contribution of POSHAN Abhiyaan, POSHAN 2.0, ICDS and maternal-child health interventions.
- **Financial protection in healthcare has expanded:**
    - India has historically faced high out-of-pocket expenditure in healthcare. The rise in health insurance or financing coverage is therefore a major step towards universal health coverage.
    - **Health insurance**/financing scheme coverage**: 41.0% → 60.2%**
    - This reflects the growing reach of schemes such as **Ayushman Bharat-PMJAY.**

- **Women's empowerment is becoming multi-dimensional"**
    - NFHS-6 shows that women's empowerment is improving through digital and financial inclusion. This matters because **women's access to banking, mobile phones and internet** improves welfare access, health awareness, digital payments and household decision-making.
        - **Women's internet use:** 33.3% → 64.3%
        - **Women using their own bank/savings account:** 78.6% → 89.0%
    - Thus, women's empowerment is increasingly linked with both social and digital inclusion.
- **Governance convergence is showing results:**
    - The gains in maternal health, immunisation, nutrition, insurance and women's inclusion suggest that progress is not due to a single scheme. It reflects convergence between health, nutrition, financial inclusion and digital governance.
    - Important schemes reflected in these gains include:
        - Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA), Surakshit Matritva Aashwasan (SUMAN) and Pradhan Mantri Matru Vandana Yojana 2.0 (PMMVY 2.0).Universal Immunization Programme and U-WIN
        - POSHAN Abhiyaan, POSHAN 2.0 and ICDS
        - Ayushman Bharat-PMJAY
        - Mission Parivar Vikas

<u>CONCERNS AND CHALLENGES:</u>

- **Persistent Malnutrition:**
    - Although stunting and severe wasting declined, **underweight prevalence declined only marginally from 32.1% to 31.8%**.
    - This shows that child nutrition remains a major challenge.

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    - Malnutrition continues to require sustained interventions beyond health services, including sanitation, food diversity, maternal education and income support.
- **Uneven Quality of Healthcare:**
    - Coverage indicators have improved, but quality of care remains a concern.
    - More ANC visits or institutional deliveries do not automatically ensure high-quality diagnosis, counselling, referral and emergency care.
    - The next challenge is to move from **coverage to quality**.
- **Dual Burden of Nutrition:**
    - NFHS-6 flags the emerging challenge of the dual burden of **undernutrition and rising overweight/obesity**.
    - This means India must deal with both child malnutrition and lifestyle-related adult health risks at the same time.
- **Rising Non-Communicable Diseases:**
    - The survey highlights rising **non-communicable diseases and lifestyle-related risks**.
    - This requires stronger preventive healthcare, screening, behavioural change and nutrition awareness.
- **Slow Progress in Some Behavioural Indicators:**
    - Early breastfeeding improved from **41.8% to 50.1%**, but nearly half of children are still not breastfed within one hour of birth.
    - Menstrual hygiene improved only slightly from **77.6% to 79.2%**.
    - These indicators show the need for deeper behavioural and social change.
- **Regional and District-Level Gaps:**
    - Since NFHS-6 provides district-level data, it is likely to reveal wide inter-state and intra-state differences.
    - National averages may hide poor performance in specific districts, tribal areas, aspirational districts and urban slums.

<u>WAY FORWARD:</u>

- **Move from Coverage to Quality:**
    - Improve quality of ANC, institutional delivery, postnatal care and immunisation services.
    - Strengthen referral systems, emergency obstetric care and newborn care facilities. Use quality audits and district-level monitoring to identify service gaps.
- **Strengthen Nutrition-Sensitive Governance:**
    - Link POSHAN Abhiyaan with sanitation, drinking water, food security, maternal education and livelihood programmes.
    - Focus on diet diversity, complementary feeding and growth monitoring. Give special attention to underweight children, where progress has been slow.
- **Deepen Last-Mile Delivery:**
    - Strengthen ASHA, Anganwadi and ANM coordination.
    - Use district-level NFHS data for micro-planning. Prioritise high-burden districts and vulnerable groups.
- **Focus on Preventive Healthcare:**

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  - Expand screening for diabetes, hypertension, cancers and lifestyle diseases.
  - Promote healthy diet, physical activity and tobacco/alcohol reduction. Strengthen Health and Wellness Centres as the first point of preventive care.
- **Improve Women-Centric Interventions:**
  - Improve access to mobile phones, internet and bank accounts for women. Expand menstrual hygiene awareness and affordable sanitary products.
  - Use women's self-help groups for health, nutrition and financial literacy campaigns.
- **Strengthen Digital Health Systems:**
  - Scale up platforms like **U-WIN** for immunisation tracking.
  - Use digital dashboards for nutrition, maternal health and high-risk pregnancy monitoring.
  - Ensure data privacy and digital inclusion while expanding health-tech systems.
- **Reduce Regional Inequality:**
  - Use NFHS-6 district-level data to prepare targeted state and district action plans.
  - Focus on aspirational districts, tribal belts, remote regions and urban poor settlements. Shift from one-size-fits-all schemes to localised interventions.

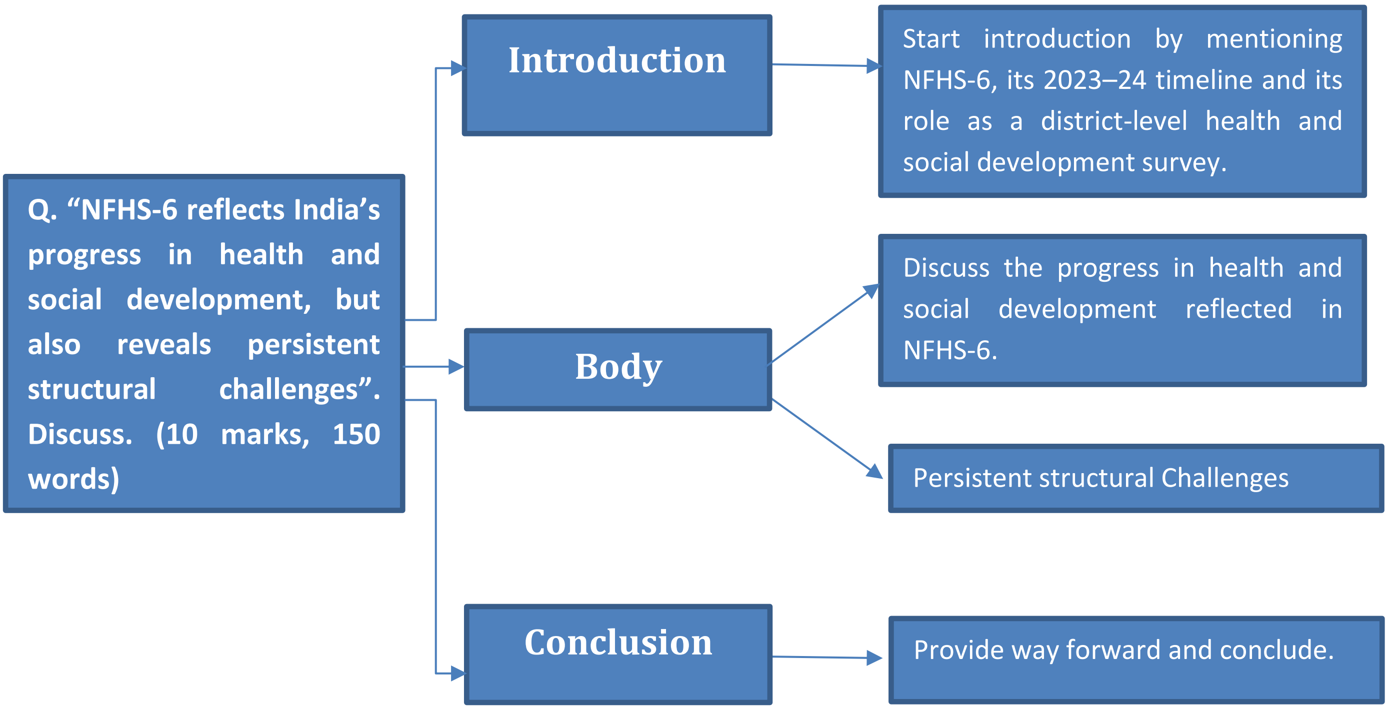
CONCLUSION:

- NFHS-6 reflects India's steady progress in health, nutrition and women's empowerment. The next priority should be improving quality, equity and preventive healthcare to sustain these gains.

PRACTICE QUESTION

Q. "NFHS-6 reflects India's progress in health and social development, but also reveals persistent structural challenges". Discuss. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The **National Family Health Survey-6 (NFHS-6)**, conducted during **2023–24**, covered nearly **6.79 lakh households across 715 districts**. It provides district-level evidence on health, nutrition, family welfare and social development indicators.

NFHS-6 shows clear progress in maternal health, child immunisation, nutrition, financial protection and women's empowerment. However, it also reveals continuing challenges in malnutrition, quality of healthcare, behavioural change and regional inequalities.

Progress Reflected in NFHS-6:

1. Strengthening of public health delivery: A major positive is the continued role of public health facilities in essential service delivery. **95.6% of children received most vaccinations through public health facilities**, showing strong public reliance on government health infrastructure.

2. Safe motherhood becoming mainstream: Maternal healthcare has improved across the continuum of care. **ANC coverage increased from 92.6% to 95.9%**, while **institutional deliveries rose from 88.6% to 90.6%**. This reflects better access to pregnancy care, safe delivery and newborn support.

3. Immunisation system improving: India's immunisation system is improving in both reach and completeness. **Full immunisation increased from 83.8% to 87.1%**, while **rotavirus vaccination rose from 36.4% to 85.4%**. This indicates better vaccine delivery, cold-chain management and frontline mobilisation.

4. Nutrition outcomes improving: Child nutrition has shown important gains. **Stunting declined from 35.5% to 29.3%**, while **severe wasting declined from 7.7% to 5.2%**. This reflects the impact of nutrition and maternal-child health interventions such as POSHAN Abhiyaan, POSHAN 2.0 and ICDS.

5. Financial protection expanded: Health insurance or financing scheme coverage increased from **41.0% to 60.2%**. This is significant for reducing out-of-pocket expenditure and moving towards universal health coverage.

6. Women's empowerment improved: Women's digital and financial inclusion has improved. **Women's internet use increased from 33.3% to 64.3%**, while women using their own bank or savings account increased from **78.6% to 89.0%**. This strengthens welfare access, health awareness and household decision-making.

Persistent Structural Challenges:

1. Malnutrition remains serious: Although stunting and wasting declined, **underweight prevalence declined only marginally from 32.1% to 31.8%**. This shows that malnutrition remains linked with poverty, poor diet diversity, sanitation gaps and maternal education.

2. Coverage does not ensure quality: Higher ANC coverage or institutional deliveries do not automatically guarantee quality care. India still needs better diagnosis, counselling, emergency obstetric care, referral systems and newborn care.

3. Dual burden of nutrition: NFHS-6 highlights the challenge of both undernutrition and rising overweight/obesity. This requires balanced nutrition strategies, not calorie-focused interventions alone.

4. Rising non-communicable diseases: The survey flags rising non-communicable diseases and lifestyle risks. India must strengthen screening and prevention for diabetes, hypertension, cancers and obesity.

5. Behavioural change remains slow: Early breastfeeding improved, but only to **50.1%**, while menstrual hygiene improved marginally from **77.6% to 79.2%**. This shows the need for deeper community awareness and behaviour change.

6. Regional inequalities persist: National averages may hide poor outcomes in tribal areas, aspirational districts, urban slums and remote regions. Hence, district-level NFHS data must guide localised planning.

Way Forward:

- **Move from coverage to quality** through better ANC, institutional delivery, postnatal care, referral and emergency care.
- **Strengthen nutrition-sensitive governance** by linking POSHAN with sanitation, drinking water, food security and maternal education.
- **Target high-burden districts** using NFHS-6 district-level data.
- **Strengthen preventive healthcare** through Health and Wellness Centres for NCD screening and lifestyle counselling.
- **Improve behavioural change campaigns** on breastfeeding, menstrual hygiene, diet diversity and child feeding practices.
- **Deepen women-centric interventions** by improving access to mobile phones, internet, banking and menstrual hygiene products.
- **Use digital health systems carefully**, including U-WIN and health dashboards, while ensuring inclusion and data privacy.

NFHS-6 shows India's steady progress in health, nutrition, financial protection and women's empowerment. The next priority should be improving **quality, equity and preventive healthcare** to sustain these gain

7. UNIVERSAL HEALTH COVERAGE

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social Justice

REFERENCE NEWS:

India's health transformation since 2014 has been driven by **Ayushman Bharat, digital health initiatives, expanded healthcare infrastructure, disease control programmes, affordable medicines, strengthened medical education, and integration of preventive healthcare**, advancing the country toward **Universal Health Coverage (UHC)** and the vision of **Viksit Bharat 2047**.

INDIA'S HEALTH TRANSFORMATION:

- **44.14 crore Ayushman Bharat cards** issued.
- **12.03 crore hospitalisations** covered under Ayushman Bharat.
- **1.86 lakh+ Ayushman Arogya Mandirs (Health & Wellness Centres)** operational.
- **47 crore+ telemedicine consultations** delivered through eSanjeevani.
- **18,000+ Jan Aushadhi Kendras** providing medicines at 50–90% lower prices.
- **12 new AIIMS** made functional since 2014.
- Medical colleges and healthcare workforce capacity more than doubled.

Four Pillars of Ayushman Bharat

- **AB-PMJAY (Health Insurance):** World's largest publicly funded health assurance scheme. Provides **₹5 lakh annual insurance cover** per family. Covers around **40% of India's population**. Expanded in 2024 to include all citizens above 70 years through **Ayushman Bharat Vay Vandana**.
- **Ayushman Arogya Mandirs:** Deliver comprehensive primary healthcare. Offer preventive, promotive, curative, rehabilitative and palliative services. Recorded cumulative footfall exceeding **540 crore visits**.
- **PM-Ayushman Bharat Health Infrastructure Mission (PM-ABHIM):** ₹64,180 crore mission for pandemic preparedness and public health infrastructure. Expands laboratories, critical care blocks, disease surveillance and emergency response systems.
- **Ayushman Bharat Digital Mission (ABDM):** Introduced **ABHA (Ayushman Bharat Health Account)**. Creates interoperable digital health records and national digital health infrastructure.

Maternal and Child Health

- Significant reduction in maternal and child mortality.
- **Mission Indradhanush** vaccinated 5.46 crore children, 1.32 crore pregnant women.
- India achieved **Maternal and Neonatal Tetanus Elimination** certification from WHO in 2015.

Communicable Disease Control

- **Tuberculosis:** National TB Elimination Programme strengthened. More than **20 crore people screened**. Over **28 lakh TB patients diagnosed** under intensified campaigns.
- **Malaria:** Malaria mortality reduced by **78%**. National goal of malaria elimination by 2027.
- **Other Achievements:** Decline in HIV transmission. Reduction in dengue and Japanese Encephalitis fatality rates. Progress towards elimination of Kala-azar, leprosy and lymphatic filariasis.

Non-Communicable Diseases (NCDs)

- NCDs account for about **60% of deaths in India**.
- Large-scale screening conducted for: Hypertension Diabetes Oral cancer Breast cancer Cervical cancer
  - 41.5 crore screened for hypertension.
  - 41.3 crore screened for diabetes.
  - More than 60 crore cancer screenings conducted.

Affordable Healthcare

- **Jan Aushadhi:** Generic medicines available at substantially lower prices.
- **AMRIT Pharmacies:** Medicines and implants available at 50–90% discounts. Saved patients approximately **₹8,400 crore**.
- **Free Diagnostics Initiative:** Free diagnostics available across public health facilities at multiple levels.

Digital Health and Technology

- **eSanjeevani:** India's national telemedicine platform. Over **47 crore consultations** completed.
- **Tele-MANAS:** Nationwide tele-mental health service available in 20 languages.
- **i-DRONE:** Uses drones for delivery of medicines, vaccines and blood samples in remote areas.
- **AI in Healthcare:** AI-based TB screening ("Cough Against TB"). MadhuNetrAI for diabetic retinopathy detection. AI-enabled clinical decision support systems.

Medical Education and Human Resources

- Medical colleges have more than doubled. 157 new nursing colleges being established. Significant increase in MBBS and nursing seats.

AYUSH Integration

- Ministry of AYUSH established in 2014.
- AYUSH services integrated into public health facilities.
- 13,093 co-located AYUSH centres functioning under NHM.
- Introduction of AYUSH Visa to promote medical tourism.

UNIVERSAL HEALTH COVERAGE:

Universal Health Coverage (UHC) refers to a health care system where all individuals and communities have access to the full range of quality health services they need, without suffering financial hardship. It is a goal pursued globally to ensure **equitable, inclusive, and sustainable health systems.**

- **Equitable Access to Health Services**: UHC ensures that health services are available to everyone regardless of socio-economic status, geographical location, or cultural background. Services cover **preventive, promotive, curative, rehabilitative,** and **palliative care.**
- **Quality of Health Services**: Health care provided under UHC must be safe, effective, and of sufficient quality to improve the health outcomes of individuals and communities.
- **Financial Protection**: No one should face financial ruin or poverty because of medical expenses. This involves mechanisms like insurance, government funding, and subsidies to reduce **out-of-pocket expenditures.**

RIGHT TO HEALTH IN INDIA:

Though the Right to Health is not explicitly mentioned as a Fundamental Right in the Constitution, it has been judicially interpreted as an integral part of the Right to Life under Article 21.

- **Article 21:** Guarantees the Right to Life and Personal Liberty, which has been expansively interpreted by the Supreme Court to include the right to live with human dignity, encompassing health and medical care.
- Directive Principles of State Policy (DPSPs):
    - **Article 38**: State to secure a social order for the **welfare of the people.**
    - **Article 39(e) & (f):** Protect workers' health and childhood development.
    - **Article 41:** Right to public assistance in sickness and disablement.
    - **Article 42**: Just and humane conditions of work and maternity relief.
    - **Article 47:** Duty of the State to raise the level of nutrition and improve public health.
- **Consumer Education and Research Centre v. Union of India (1995):** The Court held that the right to health and medical care is a fundamental right under Article 21.
- **Paschim Banga Khet Mazdoor Samity v. State of West Bengal (1996):** The State has a constitutional obligation to provide adequate medical facilities to its citizens.
- **State of Punjab v. Mohinder Singh Chawla (1997):** The right to health is an integral part of the right to life.

NEED OF UHC IN INDIA:

Disease Burden:

- **Dual Burden of Diseases**: India faces a dual burden of communicable diseases (e.g., tuberculosis, malaria) and non-communicable diseases (NCDs) like diabetes, hypertension, and cancer. NCDs account for **65% of total deaths** in India, while diseases like tuberculosis still affect around **2.6 million people annually** (WHO, 2023).
- The **Maternal Mortality Ratio (MMR)** in India is 93 per 100,000 live births (2020), which is higher than developed nations according to Ministry of Health and Family welfare.
- The **Infant Mortality Rate (IMR)** is 27 per 1,000 live births, indicating gaps in maternal and child health care as per SRS Report 2021.
- **Pandemic Preparedness:** The COVID-19 pandemic exposed vulnerabilities in India's health care system, such as shortages of hospital beds, oxygen, and ventilators.

Socio-Economic Inequalities in Health Care

- **Access Gaps:** Approximately **65% of India's population lives in rural areas**, but they only have access to **30% of health care infrastructure**. Urban areas are over-served, while rural and remote regions face a severe shortage of facilities, specialists, and medicines.
- **Inequalities in terms of access to treatment services:** As up to 60% of medical facilities nationwide are centralised in only a few major cities. In India now, about 30 to 35 percent of patients have surgery, compared to 60 to 65 percent worldwide. Similarly, only 15%–20% of patients in India receive radiation therapy, compared to 40%–50% globally.
- **Out-of-Pocket Expenditures (OOPE): 63% of health expenditure in India** is borne out-of-pocket (National Health Accounts, 2020), pushing over **55 million people** into poverty annually.
- **Vulnerable Populations:** Tribal and marginalized communities often lack access to basic health care. In tribal belts of Odisha and Madhya Pradesh, maternal and child health indicators lag behind the national average.

Economic and Social Necessity

- **Economic Loss Due to Poor Health:** Productivity losses due to premature deaths, absenteeism, and poor health cost India an estimated **$4.58 trillion** between 2012 and 2030 (WHO).
- **Health and Poverty Nexus:** Poor health leads to reduced productivity and earnings, while high medical costs push families into poverty, creating a vicious cycle. The **Swachh Bharat Abhiyan** aimed to reduce diarrheal diseases by improving sanitation, demonstrating how health initiatives boost productivity and reduce health care costs.

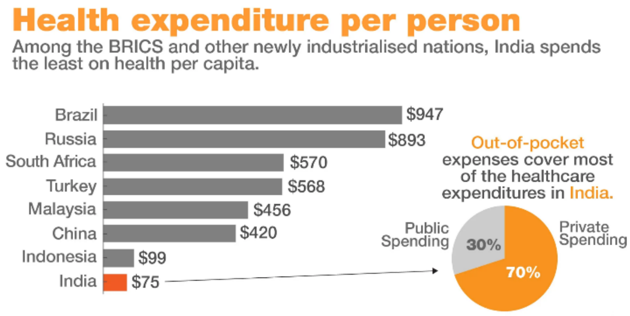
Health Infrastructure and Workforce Shortages

- **Inadequate Infrastructure:** India has only **1.4 hospital beds per 1,000 people**, compared to the WHO recommendation of 5 beds.
- **Skilled Workforce:** There is a lack of qualified medical personnel, with just 1.3 nurses and 0.65 physicians per 1,000 inhabitants, respectively. Rural PHCs often operate with a single doctor or none at all, as reported in states like Bihar and Uttar Pradesh.
- According to the Indian Medical Association (IMA), there are approximately 10 lakh (1 million) **"quacks"** practicing allopathic medicine in India, highlighting a significant prevalence of quackery across the country, particularly in rural areas where access to qualified healthcare can be limited; this includes practitioners of Indian medicine like Ayurveda, Sidha and Unani, with an estimated 4 lakh belonging to these categories.
- **Private sector dominance:** India's healthcare infrastructure includes approximately 69 thousand public and private hospitals, with the private sector contributing around 62%.

<u>CHALLENGES OF IMPLEMENTING UHC IN INDIA:</u>

- **Regional Disparities in Healthcare Spending**: States such as Himachal Pradesh, Kerala, and Tamil Nadu spend significantly more on healthcare per capita (₹3,829, ₹2,590, ₹2,039, respectively) compared to underperforming states like Uttar Pradesh (₹951) and Bihar (₹701). States with lower spending struggle to build the infrastructure and workforce required for UHC, creating inequalities in access to care.

- **High Out-of-Pocket Expenditure**: Out-of-pocket expenditure remains high in most states, including well-performing ones like Kerala and Punjab, where it exceeds 50% of total health spending.
  - West Bengal has 67% out-of-pocket expenditure despite growing government spending on health. Andhra Pradesh has high out-of-pocket expenditure (64%) despite an increase in per capita health spending.



- **Shortfall in Primary Healthcare Infrastructure**:
  States like West Bengal face a 58% shortfall in primary health centres (PHCs) and health and wellness centres (HWCs), which are critical for delivering preventive and primary care. The lack of robust primary care results in over-reliance on secondary and tertiary care, increasing costs and inefficiencies.
- **Diverse Health Profiles Across States**: West Bengal has low fertility rate but high teenage pregnancy rates (16%) compared to Kerala (2.4%) and Himachal Pradesh (3.4%). States like West Bengal, Bihar, and Gujarat have high blood sugar rates but low hypertension prevalence, while Kerala and Tamil Nadu have high prevalence of both. Uniform health policies fail to address state-specific health issues, leading to inefficient resource allocation and suboptimal outcomes.
- **Overemphasis on Private Healthcare:** Programs like West Bengal's **Swasthya Sathi** channel public funds into private hospitals despite adequate public hospital infrastructure. High rates of C-sections in public hospitals indicate the capacity for free care, questioning the need for private hospital subsidies. Diverting resources to private healthcare limits investment in strengthening public infrastructure, which is more sustainable for UHC.
- **Complexity of Health Systems:** Different states exhibit varied health system models, often with multiple systems coexisting within a state. Kerala and Himachal Pradesh have well-functioning public systems, while Bihar and Uttar Pradesh rely heavily on out-of-pocket expenditures. A one-size-fits-all approach fails to account for the complexity and unique health needs of each region.
- **Climate Resilience and Health System Integration:** The interconnectedness of healthcare systems with environmental and social factors requires integration with broader public health and climate resilience strategies. Lack of a holistic approach limits the sustainability and adaptability of health systems.
- **Inequitable access to Health Insurance:** The NFHS-5 results paint a different picture for India, where insurance coverage is lowest (36.1%) among households with the lowest wealth quintile. Recent studies have shown that like earlier health insurance policies, the PM Jan Arogya Yojana is also not free from inclusion and exclusion errors, which could lead to the inclusion of ineligible households and exclusion of eligible households. **Although 56% of empanelled hospitals under the PMJAY are in the public sector, 40% are in the private for-profit sector**, indicating that the availability of services may be concentrated in areas with previous experience implementing publicly funded health insurance schemes.

HOW UHC ENSURES RIGHT TO HEALTH IN INDIA?

Dimension	How UHC Realises the Right to	Examples/Validation

	Health	
Accessibility	UHC mandates universal access to health facilities and services, eliminating social, geographic, and economic barriers.	Ayushman Bharat – Health and Wellness Centres (HWCs) provide comprehensive primary care services to rural and urban populations. Over **1.7 lakh HWCs** are functional as of 2025.
Affordability	By reducing out-of-pocket expenditure (OOPE), UHC prevents financial hardship, a key element of the right to live with dignity.	Under PM-JAY, beneficiaries receive **₹5 lakh annual health cover** for secondary and tertiary care; OOPE dropped from 64% (2013-14) to **47% (2023-24)**.
Quality and Standard of Care	UHC ensures quality healthcare through accreditation, standard treatment guidelines, and monitoring mechanisms.	National Health Mission (NHM) focuses on maternal and child health, disease control, and infrastructure upgradation.
Equity and Inclusion	UHC promotes inclusion of vulnerable groups, rural poor, women, elderly, and marginalized communities.	Janani Shishu Suraksha Karyakram ensures free maternal and neonatal care; Mission Indradhanush provides universal immunization.
Preventive and Promotive Care	Recognizes health as a continuum, not just absence of diseases, integrating nutrition, sanitation, and awareness.	Kerala's **Vision 2031** model emphasizes epidemic intelligence, community-level health action plans, and lifestyle disease prevention.
Integration of AYUSH and Digital Health	Promotes holistic health, aligning with Article 47 (State's duty to improve public health).	National Digital Health Mission, ensures interoperability and personalized healthcare through digital IDs.

WAY FORWARD FOR IMPLEMENTING UHC IN INDIA:

- **State-Specific UHC Plans:** Develop UHC strategies tailored to the unique health profiles, challenges, and socio-economic realities of each state.
- **Strengthen Primary Healthcare:** Address the critical shortfall in primary health centres (PHCs) and health and wellness centres (HWCs). Expand access to preventive and primary care, especially in states with high disease burdens like West Bengal and Bihar.
- **Reduce Out-of-Pocket Expenditure (OOPE):** Reform health system designs to minimize OOPE by enhancing public sector capacity and ensuring free care.
- **Region-Specific Interventions for Non-Communicable Diseases (NCDs):** Tailor public health strategies to address state-specific trends in NCDs such as high blood sugar or hypertension.
- **Adopt Integrated Health System Design:** Move away from "one-size-fits-all" solutions to nuanced, interconnected approaches that consider cultural, historical, and local factors.

- **Enhance Public Investment in Health:** Increase per capita government spending on health to meet the inflation-adjusted requirements for UHC. Focus on equitable allocation of resources across states to reduce disparities in health access and outcomes.
- **Focus on Public Health Messaging and Awareness:** Develop region-specific public health campaigns addressing prevalent issues like NCDs or teenage pregnancies.
- **Incorporate Climate Resilience in Healthcare:** Recognize the impact of climate-sensitive diseases and environmental factors on health systems. Build climate-resilient healthcare infrastructure to combat challenges like urban flooding and vector-borne diseases.

MEASURES FOLLOWED BY OTHER COUNTRIES FOR UNIVERSAL HEALTH COVERAGE (UHC):

Thailand's Comprehensive UHC reduced out of pocket expenses to less than 15%

- Introduced the Universal Coverage Scheme (UCS) funded by general tax revenues, ensuring financial protection for the entire population.
- Strengthened primary care infrastructure with robust referral mechanisms.
- Implemented capitation payments for primary care and case-based payments for hospital care to ensure cost efficiency.

Cuba's Preventive and Community-Based Health Care

- Every community is served by a family doctor and nurse team, ensuring doorstep access.
- Emphasis on early diagnosis and health promotion to reduce the disease burden.
- High proportion of GDP allocated to health care.

Japan's Social Health Insurance System

- All citizens are required to enroll in health insurance plans.
- Copayments are capped to protect against catastrophic expenditures.
- Standardized fee schedules to ensure affordability.

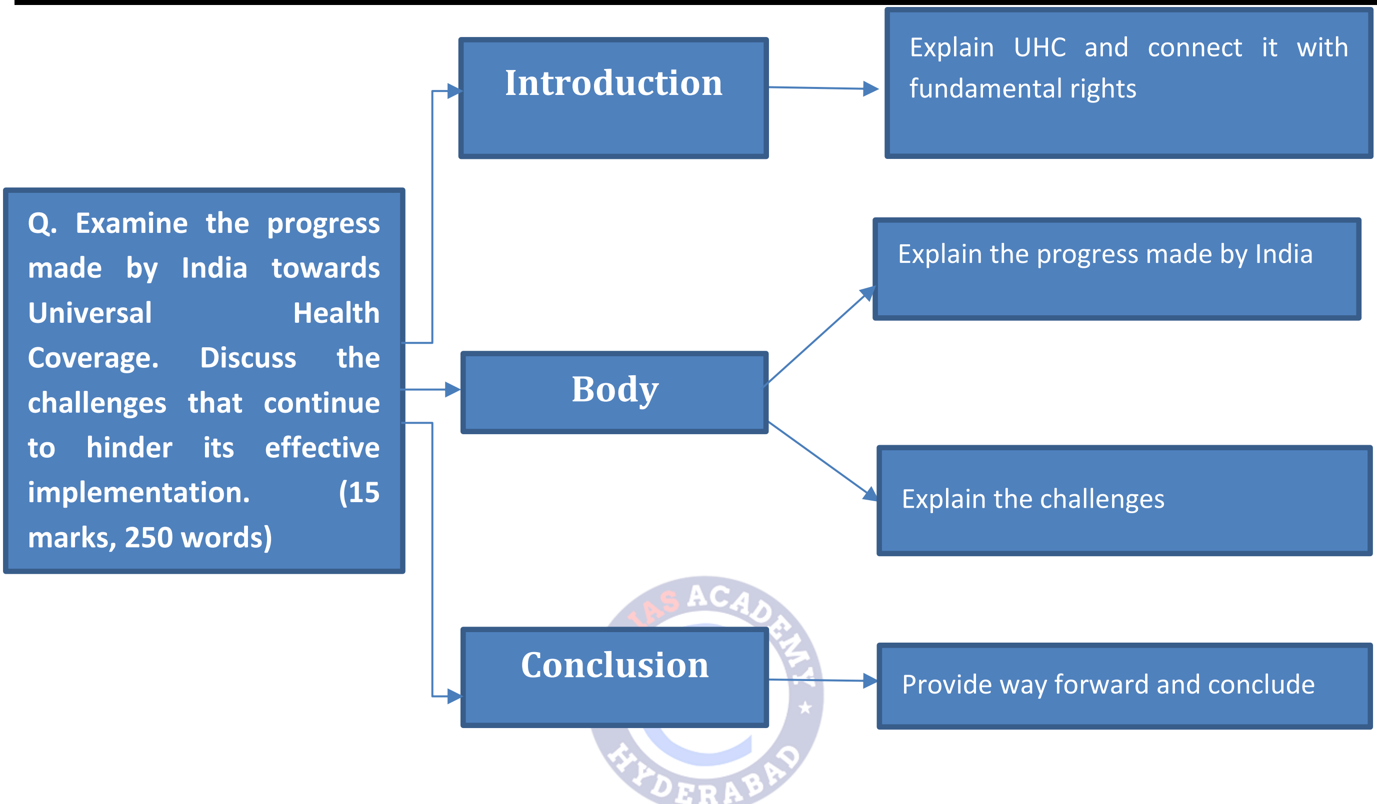
Rwanda's Community-Based Health Insurance

- Community-based health insurance schemes with premiums based on income levels.
- Health services delivered through local government units.
- Collaboration with NGOs and private providers to enhance service delivery.

PRACTICE QUESTION

Q. Examine the progress made by India towards Universal Health Coverage. Discuss the challenges that continue to hinder its effective implementation. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Universal Health Coverage (UHC) ensures that all individuals have access to quality healthcare services without suffering financial hardship. In India, UHC derives constitutional legitimacy from **Article 21 (Right to Life)** and is reinforced by the Directive Principles of State Policy, particularly **Articles 38, 41, 42 and 47**.

Progress Towards Universal Health Coverage in India

- **Expansion of Health Insurance: Ayushman Bharat-PMJAY** provides ₹5 lakh annual health coverage per family. More than **44 crore Ayushman cards** issued and **12 crore hospitalisations** covered.
- **Strengthening Primary Healthcare:** Over **1.86 lakh Ayushman Arogya Mandirs** provide preventive, promotive, curative and palliative care.
- **Digital Health Revolution: Ayushman Bharat Digital Mission (ABDM)** and **ABHA IDs** facilitate interoperable health records. **eSanjeevani** has delivered over **47 crore telemedicine consultations**.
- **Disease Control and Preventive Healthcare:** Mission Indradhanush vaccinated over **5.46 crore children**. Malaria mortality reduced by **78%**, while TB screening has expanded significantly.
- **Affordable Healthcare: 18,000+ Jan Aushadhi Kendras** and AMRIT pharmacies have reduced medicine costs substantially.
- **Human Resource and Infrastructure Expansion:** Medical colleges have more than doubled. New AIIMS, nursing colleges and healthcare facilities have improved accessibility.

Challenges in Achieving UHC

- **High Out-of-Pocket Expenditure:** Healthcare spending continues to push millions into poverty despite insurance expansion.
- **Regional Disparities:** Significant differences exist in healthcare spending and infrastructure across states.

- **Rural-Urban Divide:** Around 65% of the population resides in rural areas but access to healthcare infrastructure remains inadequate.
- **Infrastructure and Workforce Shortages:** Shortage of doctors, nurses, specialists and hospital beds persists in many regions.
- **Rising Burden of NCDs:** Non-communicable diseases account for nearly **60% of deaths** in India.
- **Insurance Exclusion Errors:** Eligible beneficiaries may remain outside health insurance coverage due to identification and implementation gaps.
- **Climate and Public Health Risks:** Emerging health threats require climate-resilient and adaptive healthcare systems.

Way Forward

- Increase public health expenditure to at least **2.5–3% of GDP**.
- Strengthen primary healthcare and referral systems.
- Develop state-specific UHC strategies based on local disease profiles.
- Reduce out-of-pocket expenditure through expanded public provisioning.
- Improve healthcare workforce distribution in underserved regions.
- Leverage AI, telemedicine and digital health platforms for last-mile delivery.
- Build climate-resilient healthcare infrastructure and disease surveillance systems.

Universal Health Coverage is not merely a health-sector objective but a prerequisite for social justice, human development and economic growth. By strengthening public healthcare systems, reducing inequalities and ensuring affordable quality care for all, India can realize the constitutional vision of the **Right to Health** and move closer to the goal of **Viksit Bharat 2047**.

8. US-IRAN PEACE DEAL

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations

REFERENCE NEWS:

News that the U.S. and Iran had reached an interim deal may have brought some initial relief to markets, but fresh uncertainty emerged after planned follow-up talks in Switzerland were called off, underscoring the challenges of turning the agreement into a lasting peace settlement.

US-IRAN PEACE DEAL:

The **U.S.–Iran Preliminary Peace Accord (2026)** emerged after nearly four months of direct military confrontation between the United States, Israel, and Iran, which severely destabilized West Asia and threatened global energy security.

Historical Background

- **JCPOA and Nuclear Diplomacy (2015):** Iran and the **P5+1 countries** signed the **Joint Comprehensive Plan of Action (JCPOA)** in 2015. Iran agreed to limit uranium enrichment and accept intrusive international inspections. In return economic sanctions were lifted.
- **U.S. Withdrawal (2018):** The United States withdrew from the JCPOA under President Trump. Comprehensive sanctions were reimposed. Iran gradually resumed uranium enrichment and reduced compliance with the agreement.
- **Escalation into Direct Conflict (2025–26):** Years of **proxy wars and geopolitical rivalry** escalated into direct military confrontation. The U.S. and Israel launched strikes on Iranian military and nuclear facilities. Major facilities at Natanz, Fordow, Isfahan were reportedly damaged.
- **Strait of Hormuz Crisis:** Iran threatened to restrict shipping through the **Strait of Hormuz**. The U.S. imposed a naval blockade on Iranian maritime activity. Global oil markets experienced severe volatility because nearly **20% of global oil trade** passes through the Strait of Hormuz.
- **Economic and Strategic Pressures:** Both sides faced growing pressures:
  - **Iran:** Severe economic crisis, currency collapse, domestic protests, frozen overseas assets.
  - **United States:** Rising energy prices, regional instability, increasing costs of military involvement.

What is the 2026 U.S.–Iran Peace Deal?

The agreement is a **14-point Memorandum of Understanding (MoU)** also known as **Islamabad Memorandum of Understanding (MoU).** Not a final peace treaty. Functions as a ceasefire framework, confidence-building mechanism and a roadmap for a comprehensive settlement. Establishes a **60-day negotiation period** for a final agreement.

- **Clause 1: Permanent Cessation of Hostilities**
  - Immediate and permanent ceasefire across all theatres of conflict.

- Includes direct military operations and proxy engagements.
- Explicitly covers Iran, Lebanon, Gulf region
- **Significance:** Stops active combat. Creates the political space required for negotiations. Reduces the risk of escalation into a wider regional war.

○ **Clause 2: Mutual Non-Interference**
- Both parties commit not to interfere in each other's internal affairs.
- No support for activities aimed at destabilising the other government.
- **Significance:** Addresses one of Iran's longstanding concerns regarding regime-change efforts. Establishes political confidence-building measures.

○ **Clause 3: 60-Day Negotiation Window**
- A structured 60-day diplomatic period.
- Parties may extend the period through mutual agreement.
- **Significance:** Prevents immediate collapse of negotiations. Allows technical and political issues to be discussed separately.

○ **Clause 4: Removal of U.S. Naval Blockade**
- U.S. agrees to terminate naval restrictions around Iranian ports.
- Withdrawal of blockade-related operations.
- **Significance:** Considered one of Iran's major negotiating victories. Restores maritime access for Iranian commerce.

○ **Clause 5: Reopening of the Strait of Hormuz**
- Iran guarantees unrestricted passage for all commercial shipping.
- Commercial vessels allowed immediate transit.
- Transit is to occur under Iranian maritime arrangements. Iran retains authority to levy normal navigational service charges.
- **Significance:** Nearly **20% of global oil trade** passes through Hormuz. Critical for restoring global energy security.

○ **Clause 6: $300 Billion Reconstruction Framework**
- Negotiations to establish a $300 billion reconstruction and economic recovery package.
- Rebuild damaged infrastructure. Reintegrate Iran into global economic networks.
- **Significance:** Encourages foreign investment. Supports economic stabilisation.

○ **Clause 7: Comprehensive Sanctions Relief Framework**
- Gradual removal of sanctions.
- Temporary waivers on oil exports, energy trade, financial transactions
- **Significance:** Could restore tens of billions of dollars in annual Iranian energy exports. Provides economic incentives for compliance.

○ **Clause 8: Nuclear Non-Proliferation Commitment**
- Iran reiterates that it will not produce nuclear weapons.
- **Significance:** Addresses core U.S. and international concerns. Serves as the foundation for future nuclear negotiations. The clause does not permanently resolve enrichment disputes.

○ **Clause 9: Nuclear Status Quo During Negotiations**
- Iran maintains current nuclear activities without further escalation.
- No additional uranium enrichment during the 60-day period.

- **Significance:** Prevents deterioration while negotiations continue. No mention of restrictions on ballistic missiles, drone programmes. This reflects a significant shift from previous U.S. positions.

- **Clause 10: Interim Sanctions Waivers**
  - Temporary sanctions relief before full sanctions removal.
  - **Significance:** Allows immediate economic breathing room. Functions as a bridge toward Clause 7.
- **Clause 11: Release of Frozen Iranian Assets**
  - Unfreezing of Iranian sovereign assets held abroad.
  - Initial release of approximately $24 billion. Broader access to more than $100 billion in frozen assets discussed. Around $12 billion reportedly available immediately for domestic relief.
  - **Significance:** Provides liquidity to the Iranian economy. Addresses severe fiscal pressures.
- **Clause 12: Monitoring and Verification Mechanism**
  - Establishment of an implementation-monitoring framework.
  - Verification of compliance by both parties.
  - **Significance:** Builds trust. Creates accountability mechanisms. Essential for extending negotiations beyond 60 days.
- **Clause 13: Hierarchy of Negotiation Priorities**
  - Sets the sequencing of issues during the negotiation period.
  - **Priorities Include** ceasefire implementation, Hormuz reopening, asset release, sanctions relief and nuclear negotiations.
  - **Significance:** Prevents disagreements over sequencing from derailing talks.
- **Clause 14: United Nations Security Council Endorsement**
  - Final agreement to be backed by a UN Security Council Resolution.
  - **Significance:** Provides international legitimacy. Makes the agreement more difficult to reverse unilaterally. Attempts to avoid a repeat of the 2018 U.S. withdrawal from the JCPOA.

IMPLICATIONS OF THE U.S.–IRAN PEACE MOU (2026) FOR THE WORLD:

- **Stabilisation of Global Energy Markets:** The most immediate impact is on global energy security. The **Strait of Hormuz** carries around **20% of global oil trade**, nearly **one-third of global seaborne oil shipments** and significant LNG exports from Qatar and Gulf countries.
  - Reopening of Hormuz reduces fears of supply disruptions. War-risk premiums on shipping decline. Oil price volatility decreases. Following reports of the agreement, international crude benchmarks witnessed downward pressure as markets priced in reduced geopolitical risk.
- **Reduction in the Risk of a Wider West Asian War:** Before the MoU, there was a possibility of escalation involving Iran, Israel, United States, Hezbollah and various regional proxy groups. Reduces likelihood of direct interstate conflict. Limits proxy warfare in Lebanon, Syria, Gulf region
- **Revival of Global Maritime Trade:** West Asia hosts some of the world's most critical maritime chokepoints Strait of Hormuz Bab-el-Mandeb Strait. Safer navigation for commercial vessels, lower shipping costs, reduced insurance premiums, improved supply-chain resilience.

- **Relief to the Global Economy:** The conflict had generated higher oil prices, shipping disruptions, inflationary pressures and supply-chain bottlenecks. The MoU reduces energy-related inflation, improves investor confidence and supports global economic recovery.
- **Re-entry of Iran into the Global Economy: Provisions supporting this are** release of frozen assets, partial sanctions relief and reconstruction framework. Iran could increase oil exports, reconnect with international financial systems and attract foreign investment.
- **Revival of Multilateral Diplomacy:** The agreement demonstrates that diplomatic engagement remains relevant even after prolonged conflict. The MoU revives principles that underpinned Joint Comprehensive Plan of Action, strengthens diplomacy over military confrontation, encourages negotiated solutions to nuclear disputes and reaffirms the role of mediation by regional actors.
- **Impact on Nuclear Non-Proliferation Regime:** Iran reaffirmed its commitment not to develop nuclear weapons. The agreement does not permanently resolve Uranium enrichment disputes, nuclear verification mechanisms and future inspection arrangements.
- **Strategic Realignment in West Asia:** The MoU may alter regional power equations. Reduced U.S.–Iran confrontation. Greater regional diplomatic engagement. New security arrangements involving Gulf states.

IMPLICATIONS FOR INDIA:

- **Macroeconomic Relief:** India imports roughly 85% of its crude oil requirements. The sharp drop in global crude prices will directly **compress India's import bill, rein in the current account deficit, and tame fuel-led domestic inflation.**
  - Reduced transit times and slashed logistics overheads will immediately improve the global competitiveness of heavily crude-dependent Indian export sectors, such as **plastics, chemicals, textiles, and engineering goods** destined for Europe and West Africa.
- **Protection of the Indian Maritime Workforce:** Accountable for nearly one-sixth of global seafarers, Indian maritime workers face acute risks from geopolitical conflicts, as exposed by the fatal MT Settebello strike. The halt in military attacks mandated by **the Islamabad MoU can secure stranded Indian mariners.**
- **Revival of Connectivity Projects:** The lifting of the naval blockade on Iranian coastal waters clears the path for the unhindered operationalization of the India-backed Chabahar Port and accelerates the viability of the INSTC granting India vital, secure access to Central Asia and Russia.
  - While the deal completely revitalizes the INSTC, it inadvertently stalls the IMEC (India-Middle East-Europe Economic Corridor) due to Israel's continued strategic isolation and unilateral operations in Lebanon.
- **Diplomatic Tightrope:** While economically beneficial, the MoU complicates New Delhi's strategic balancing act. India will need to carefully recalibrate its deep strategic partnership with a **defiant Israel while simultaneously capitalizing on the newly opened economic avenues with an emboldened Iran.**
- **Impact of Pakistan's Role as the Mediator:** Acting as a mediator has strengthened Pakistan-Iran bilateral ties. This potentially clears the path for long-stalled cross-border energy projects (e.g., the Iran-Pakistan Gas Pipeline) free from the immediate threat of secondary US sanctions, **shifting the energy dynamics in India's immediate neighborhood.**

HOW CAN WEST ASIA ENSURE CONTINUED PEACE?

- **Institutionalise Regional Dialogue and Security Architecture:** West Asia lacks a comprehensive regional security mechanism comparable to NATO, ASEAN, or the OSCE. Establish a permanent West Asian security dialogue platform. Include Iran, Saudi Arabia, UAE, Qatar, Türkiye, Israel, Egypt, Iraq
- **Resolve the Iranian Nuclear Issue Through Diplomacy:** The Iranian nuclear question remains a major source of instability. Negotiate a durable successor to the JCPOA. Strengthen IAEA inspections and verification. Ensure phased sanctions relief linked to compliance.
- **Curb Proxy Wars and Non-State Armed Groups:** Many conflicts in West Asia are sustained by proxy actors. Promote disarmament and reintegration programs. Strengthen state institutions. Restrict external funding of armed groups.
- **Ensure Maritime Security and Freedom of Navigation:** Strategic chokepoints remain vulnerable to disruptions. Conduct Joint maritime patrols. Information-sharing mechanisms. Multilateral naval cooperation.
- **Promote Economic Interdependence:** Economic cooperation often creates incentives for peace. Expand regional trade agreements. Develop cross-border infrastructure. Encourage energy and logistics connectivity.
- **Advance Political Solutions to Regional Conflicts:** Several unresolved conflicts continue to fuel instability. Support UN-led peace processes. Encourage inclusive political settlements. Strengthen humanitarian assistance.
- **Build Confidence Through Arms Control Measures:** West Asia remains one of the world's most militarised regions. Transparency in military deployments. Advance notification of military exercises. Confidence-building agreements. Discussions on a Weapons of Mass Destruction-Free Zone.
- **Strengthen Role of Regional and International Institutions like** United Nations, Arab League, Organization of Islamic Cooperation. Enhance mediation efforts. Improve conflict-prevention mechanisms. Support peacekeeping and monitoring initiatives.
- **Focus on Human Security and Development:** Long-term peace requires addressing socio-economic grievances. Job creation. Youth empowerment. Education and skill development. Reconstruction of conflict-affected regions.

PRACTICE QUESTION

Q. The 2026 U.S.–Iran Peace Memorandum of Understanding (MoU) marks a significant attempt to de-escalate tensions in West Asia and restore stability in global energy markets. Discuss its implications for India. (15 Marks, 250 Words)

APPROACH

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Q. The 2026 U.S.–Iran Peace Memorandum of Understanding (MoU) marks a significant attempt to de-escalate tensions in West Asia and restore stability in global energy markets. Discuss its implications for India. (15 Marks, 250 Words)

Introduction → Start with the peace deal

Body → Explain how the deal marks a significant attempt to de-escalate tensions in West Asia

Body → Discuss the implications for India

Conclusion → Conclude accordingly

MODEL ANSWER

The **2026 U.S.–Iran Peace Memorandum of Understanding (MoU)**, also known as the **Islamabad MoU**, is a 14-point framework agreement aimed at ending nearly four months of direct conflict between the United States, Israel, and Iran. The agreement provides for a ceasefire, reopening of the Strait of Hormuz, sanctions relief, release of frozen Iranian assets, and a 60-day negotiation process towards a comprehensive settlement.

How the Deal Marks a Significant Attempt to De-escalate Tensions and Restore Energy Stability

- **Permanent Ceasefire Framework:** Establishes an immediate cessation of hostilities between the U.S. and Iran. Covers direct military operations as well as proxy theatres, including Lebanon.
- **Reopening of the Strait of Hormuz:** Iran guarantees unrestricted commercial navigation. Critical as nearly **20% of global oil trade** passes through the Strait.
- **Removal of U.S. Naval Blockade:** The U.S. agreed to lift restrictions around Iranian ports. Reduces risks of maritime confrontation and trade disruptions.
- **Sanctions Relief and Asset Release:** Gradual lifting of sanctions and release of approximately **$24 billion** in frozen Iranian assets. Provides economic incentives for compliance and stability.
- **Nuclear Non-Proliferation Commitment:** Iran reiterates its commitment not to develop nuclear weapons. Creates space for future nuclear negotiations and confidence-building.
- **Revival of Multilateral Diplomacy:** Reaffirms dialogue over military confrontation. Involves proposed endorsement through a UN Security Council Resolution.
- **Reduction in Global Energy and Shipping Risks:** Lowers war-risk insurance premiums. Improves supply-chain resilience and investor confidence across global markets.

Implications for India

- **Enhanced Energy Security:** India imports nearly **85% of its crude oil requirements**. Lower oil prices reduce the import bill and current account deficit.
- **Containment of Inflation:** Stable crude prices moderate fuel and transportation costs. Supports macroeconomic stability and growth.
- **Revival of Chabahar Port:** Improved relations with Iran can accelerate development of **Chabahar Port**, a key gateway to Central Asia.
- **Strengthening of INSTC:** Greater regional stability enhances the viability of the **International North-South Transport Corridor** connecting India with Eurasian markets.
- **Improved Maritime Security:** Safer navigation through the Persian Gulf and Strait of Hormuz. Protects Indian shipping interests and energy supplies.
- **Safety of Indian Seafarers:** Reduces risks faced by thousands of Indian seafarers operating in Gulf waters, highlighted by incidents such as the MT Settebello tragedy.
- **Expanded Trade and Investment Opportunities:** Re-entry of Iran into the global economy may create opportunities in energy, infrastructure, pharmaceuticals, and connectivity projects.

The U.S.–Iran Peace MoU represents a significant diplomatic breakthrough with the potential to reduce geopolitical tensions, stabilise energy markets, and revive economic engagement in West Asia. For India, the agreement offers strategic advantages in energy security, connectivity, maritime safety, and regional trade, while reinforcing the importance of sustained diplomacy for long-term peace and stability.

9. INDIA AND G7

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International relations > Strategic Groupings > International groupings > G7

REFERENCE NEWS:

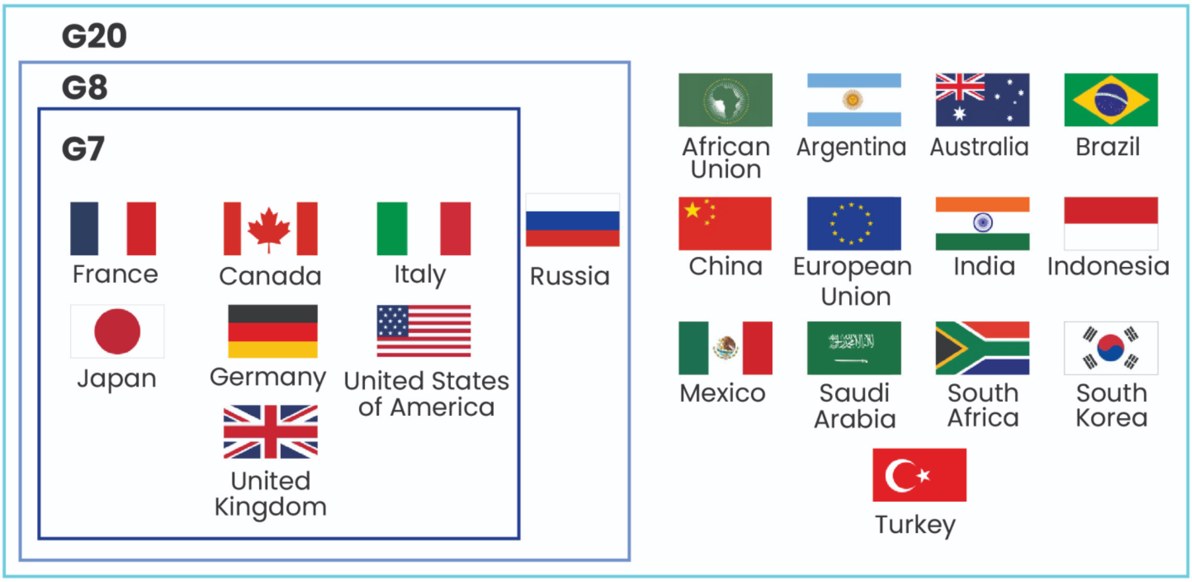
- **PM Modi's participation in the 2026 G7 Summit** at Évian, France, at the invitation of President Emmanuel Macron, highlighted **India's growing role in shaping global debates** on economic security, **AI governance, critical minerals, energy transition, climate finance and Global South concerns.**

MORE ON NEWS:

- The summit, hosted by France, focused on key global issues such as economic security, artificial intelligence, critical minerals, energy transition, development finance, **geopolitical conflicts and the concerns of the Global South.**
- **PM Modi participated in major outreach sessions**, including those on rebuilding international solidarity, promoting balanced and sustainable economic growth, and ensuring a safe and effective rollout of AI.
- On the sidelines, **he held bilateral meetings with global leaders, including US President Donald Trump and German Chancellor Friedrich Merz,** where issues such as **trade, defence, West Asia, Ukraine, energy security and maritime safety** were discussed.
- India used the platform **to project itself as a bridge between the G7 and the Global South**, while emphasising inclusive growth, resilient supply chains, human-centric technology and equitable climate and development finance.

THE G7:

- The G-7 or 'Group of Seven' was formed in **1975** as a result of the **Oil crisis and global currency exchange issues**, by the **top economies of that time,** as an informal forum to discuss pressing world issues.
- At present, it consists of **Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States**.
    - The G-7 was known as the **'G-8'** for several years after Russia joined in 1997. But Russia was expelled in 2014 following its annexation of the Crimea region of Ukraine and the Group returned to being called G-7.
- The G-7 does **not have a formal constitution or a fixed headquarters**.
- The G-7 nations meet at annual summits that are presided over by leaders of member countries on a rotational basis.
- The decisions taken by leaders during annual summits are **non-binding**.
- **India is not a member of the G7**, yet Prime Minister Narendra Modi attended the 2025 G7 summit in Kananaskis, Canada, **invited by Canadian Prime Minister Mark Carney.**



<u>SIGNIFICANCE OF THE G7 FOR INDIA:</u>

- **Strategic and Security Cooperation:**
  - The G7 provides India a **platform to engage major powers** on issues such as the **Russia-Ukraine war, West Asia crisis, terrorism, maritime security and energy stability.**
  - India's balanced approach of dialogue and diplomacy helps protect its strategic autonomy while maintaining ties with different power centres.
  - Its strong stand against terrorism also aligns with the G7's wider security concerns.
- **Recognition of India's Global Rise:**
  - **PM Modi's participation in the 2026 G7 Summit** at Évian, France, at the invitation of French President Emmanuel Macron, reflects **India's growing global profile.**
  - **India's repeated invitation to the G7** shows its importance as a **major economy, technology hub, energy consumer and voice of the Global South.**
  - It also gives India space to influence global debates on trade, technology, energy, climate and development.
- **Countering China and Economic Coercion:**
  - The **G7's focus on resilient supply chains**, economic security and reducing **overdependence on single-country** sources supports India's strategic interests.
  - This is especially relevant in the context of **China's dominance** in rare earths, electronics, solar supply chains and strategic manufacturing.
  - G7-led initiatives can help India strengthen economic sovereignty and promote the **China+1 strategy.**
- **Critical Minerals and Clean Technology:**
  - Critical minerals such as lithium, cobalt, nickel and rare earths are vital for electric vehicles, batteries, semiconductors, defence and renewable energy.
  - **India's cooperation with G7 countries can help secure** mineral access, processing technology, recycling capacity and investment in clean energy manufacturing.
  - This supports Make in India, electric mobility, green hydrogen and defence indigenisation.
- **Investment and Innovation Partnerships:**

- India's presence at the G7 **helps attract investments from advanced economies in clean energy, semiconductors, AI, digital infrastructure and defence.**
- PM Modi's proposal of **IMPACT, International Mobilization Partnership for Accelerating Connectivity and Trade**, seeks to combine G7 capital, India's talent and Global South ownership.
- This strengthens **India's role as a hub for innovation, start-ups and development-oriented connectivity.**

- **AI Governance and Digital Public Infrastructure:**
  - AI was a major theme at the Évian G7 Summit, making India's participation significant in shaping future technology rules.
  - PM Modi presented **India's human-centric AI vision**, stressing that AI must be **safe, inclusive and oriented towards public good.**
  - **India's experience with Aadhaar, UPI, DigiLocker and India Stack** gives it credibility in global digital governance debates.
- **Energy Security and Maritime Safety:**
  - G7 discussions on **West Asia, the Strait of Hormuz and energy-market stability** are directly relevant to India.
  - As a major energy importer, India is vulnerable to disruptions in oil supplies, shipping routes and fertiliser prices.
  - India's engagement also helps raise concerns related to maritime safety and Indian seafarers in conflict-prone waters.

- **Climate Finance and Green Transition:**
  - The G7 is important for India because **developed countries dominate climate finance, green technology and carbon-market rules.**
  - India supports climate action but insists that transition must be affordable, fair and consistent with development needs.
  - India can use the platform to demand predictable climate finance and raise concerns over green protectionist measures such as the EU's Carbon Border Adjustment Mechanism.
- **Development Finance and Global South Concerns:**
  - India uses the G7 platform to **raise concerns of developing countries**, including debt stress, food insecurity, climate shocks and financing gaps.
  - It can **push for reform of Multilateral Development Banks and international financial institutions.**
  - This strengthens India's image as a **bridge between advanced economies and the Global South.**
- **Health Preparedness:**
  - The G7's focus on health cooperation, disease preparedness and outbreak response is significant for India.
  - As the **"pharmacy of the world,"** India can expand cooperation in vaccines, affordable medicines, biotechnology and global health security.
  - It also allows India to advocate equitable access to health technologies for developing countries.
- **Strengthening India's Multilateral Role:**

- India's G7 participation complements its role in the G20, BRICS and Global South platforms.
- It reflects India's policy of multilateral engagement without exclusive alignment.
- The platform helps India shape emerging global rules while protecting national interests in trade, technology, energy, climate and security.

WHY INDIA IS IMPORTANT FOR G7:

- **Economic Size and Growth:**
  - India is one of the **fastest-growing major economies and a large consumer market**, making it important for G7 trade, investment and supply-chain strategies.
  - Its **young workforce**, **expanding manufacturing base, digital economy and rising middle class** make India a key partner for advanced economies looking beyond slow-growth markets.
  - India's growth also gives the G7 a major partner in sustaining global demand, investment flows and economic stability.
- **Demographic Dividend and Skilled Workforce:**
  - India's large young population provides both a **major market and a skilled labour pool for G7 companies.**
  - This is significant in sectors such as IT, semiconductors, clean energy, healthcare, digital services, start-ups and advanced manufacturing.
  - As many advanced economies face ageing populations, India's human capital becomes a strategic asset for global growth.
- **Strategic Location and Indo-Pacific Role:**
  - **India's location in the Indian Ocean** makes it vital for maritime security, energy flows and trade routes connecting West Asia, Africa, Europe and East Asia.
  - For the G7, India is an important partner in **maintaining a free, open and rules-based Indo-Pacific**
  - India's role in South Asia and the Indian Ocean also **helps balance instability arising from China's assertiveness**, piracy, terrorism and maritime disruptions.
- **Counterbalance to China and Economic Coercion:**
  - **India is a democratic counterweight to China's growing regional and global influence.**
  - G7 concerns over economic coercion, overdependence on China and concentrated supply chains align with India's own strategic interests.
  - **India supports diversified, transparent and resilient supply chains**, especially in electronics, solar equipment, pharmaceuticals, rare earths and strategic manufacturing.
- **Critical Minerals and Supply-Chain Resilience:**
  - Critical minerals such as lithium, cobalt, nickel and rare earths are essential for electric vehicles, batteries, defence, semiconductors and renewable energy.
  - G7 countries need trusted partners to reduce dependence on China-dominated mineral supply chains. **India's large market, manufacturing ambitions and mineral-processing potential** make it an important partner in future critical mineral partnerships.
- **Leadership in Renewable Energy and Climate Action:**
  - India's large renewable energy push, especially solar power, aligns with the G7's clean energy and climate goals.

- India's initiatives such as the International Solar Alliance, Coalition for Disaster Resilient Infrastructure, Global Biofuel Alliance and Mission LiFE strengthen its climate leadership. For the G7, **India is important because global climate targets cannot be achieved without India's participation**.

- **Energy Security and Refining Capacity:**
  - India is a major energy consumer and a key player in global oil, gas and refined fuel markets.
  - Its choices affect global energy demand, price stability and fuel supply chains.
  - During geopolitical disruptions such as the Russia-Ukraine war and West Asia tensions, **India's energy diplomacy and refining capacity make it relevant for global energy security.**
- **Mediator and Voice for Dialogue:**
  - India maintains **working relations with Russia, the US, Europe and the Global South, giving it diplomatic flexibility.**
  - In conflicts such as Russia-Ukraine and West Asia, India's emphasis on dialogue, diplomacy and peaceful resolution is valued by countries seeking non-bloc approaches. India **may not act as a formal mediator, but it remains an important diplomatic bridge in a fragmented world order.**
- **Technological and Scientific Capabilities:**
  - India's strengths in IT, digital public infrastructure, space technology, pharmaceuticals, vaccines and start-ups make it a valuable partner for the G7. **India's experience with Aadhaar, UPI, DigiLocker and India Stack** gives it credibility in discussions on digital governance.
  - Its growing role in AI, cyber security and innovation makes India important for shaping future technology rules.
- **AI Governance and Digital Safety:**
  - AI was a key focus of the Évian G7 Summit, and India's participation is important because it represents both a major technology market and the Global South. India supports safe, inclusive and human-centric AI that serves public good.
- **Pharmaceutical and Health Security Role:**
  - **India's pharmaceutical and vaccine production capacity** makes it important for G7 health security goals.
  - As the **"pharmacy of the world,"** India can contribute to affordable medicines, vaccines, biotechnology and pandemic preparedness.
  - This is especially relevant for ensuring equitable access to health technologies in developing countries.
- **Bridge Between G7 and Global South:**
  - India is important for the G7 because it can connect advanced economies with the concerns of developing countries.
  - India raises issues such as debt stress, climate finance, technology access, food security and reform of global institutions.This makes India a useful partner for building more inclusive global governance.

CHALLENGES IN INDIA'S ENGAGEMENT WITH G7 COUNTRIES:

- **Limited Institutional Role:** India participates in the G7 mainly as an invited partner, not as a permanent member. This limits India's ability to shape final decisions, even though G7 rules on trade, technology, climate and finance affect India and the Global South.
- **Russia Factor and Strategic Autonomy:** India's legacy defence dependence on Russia and continued energy engagement with Moscow create friction with G7 countries, especially due to the Russia-Ukraine war. India has to balance Western expectations with its own defence needs, energy security and strategic autonomy.
- **Geopolitical Tensions:** G7 positions on Ukraine, West Asia, Iran and China may not always fully match India's interests. India has to maintain relations with the US, Europe, Russia, Iran, Gulf countries and the Global South without appearing aligned to any bloc.
- **US-China Rivalry and Indo-Pacific Pressure:** Growing US-China rivalry increases expectations that India should align more closely with Western strategies in the Indo-Pacific. However, India must avoid being drawn into confrontational bloc politics while still countering China's assertiveness.
- **Trade and Economic Frictions:** India's tariff policies, domestic industry protection, data rules and market-access concerns may create friction with G7's free-market preferences. Issues such as US tariffs, India-EU FTA negotiations, digital trade rules and investment conditions can complicate cooperation.
- **Climate Finance, CBAM and Energy Transition:** G7 countries push for faster climate action, while India must balance green transition with growth, coal dependence and energy affordability. Measures such as the EU's Carbon Border Adjustment Mechanism may act as green trade barriers against Indian exports like steel, aluminium, cement and fertilisers. India also remains concerned about inadequate climate finance and technology transfer from developed countries.
- **Technology and Innovation Gap:** Cooperation in AI, semiconductors, biotechnology, defence technology and clean energy is limited by technology gaps, IPR issues, export controls and unequal access to advanced technologies. India must ensure that emerging AI and digital standards are not shaped only by advanced economies.
- **Critical Minerals Dependence:** G7 countries are trying to reduce dependence on China for critical minerals, but India also faces supply-chain vulnerabilities in lithium, cobalt, nickel and rare earths. Lack of domestic processing capacity and overseas mineral access can limit India's role in clean energy and high-tech supply chains.
- **Human Rights and Democratic Narratives:** Differences over human rights, democracy, internet regulation, civil liberties and governance may occasionally create diplomatic tensions with G7 countries. India needs to manage these concerns without allowing them to dominate strategic cooperation.
- **Internal Divisions Within G7:** The G7 itself is not fully united on trade, climate finance, industrial subsidies, Russia, China and energy policy. This reduces predictability and makes it harder for India to build consistent long-term partnerships with the grouping.

WAY FORWARD:

- **Deeper G7 Engagement:** India should seek regular, structured and issue-based engagement with the G7 on trade, AI, climate, health, critical minerals and development finance.
- **Preserve Strategic Autonomy:** India should cooperate with G7 countries where interests converge, while maintaining balanced relations with Russia, the Global South and other major powers.

- **Diversify Defence and Technology Partnerships:** India should reduce overdependence on any single country by expanding defence, semiconductor, AI, space and clean-tech cooperation with G7 partners.
- **Push for Fair Climate Action:** India should demand predictable climate finance, affordable technology transfer and fair treatment of developing countries under measures such as CBAM.
- **Strengthen Global South Leadership:** India should use the G7 platform to raise concerns of developing countries on debt, food security, energy access, digital divide and reform of global institutions.
- **Build Resilient Supply Chains:** India should work with G7 countries on critical minerals, trusted manufacturing, logistics, pharmaceuticals and clean energy supply chains.
- **Improve Domestic Capacity:** India must strengthen skills, innovation, ease of doing business, R&D and regulatory clarity to become a credible long-term partner for G7 economies.

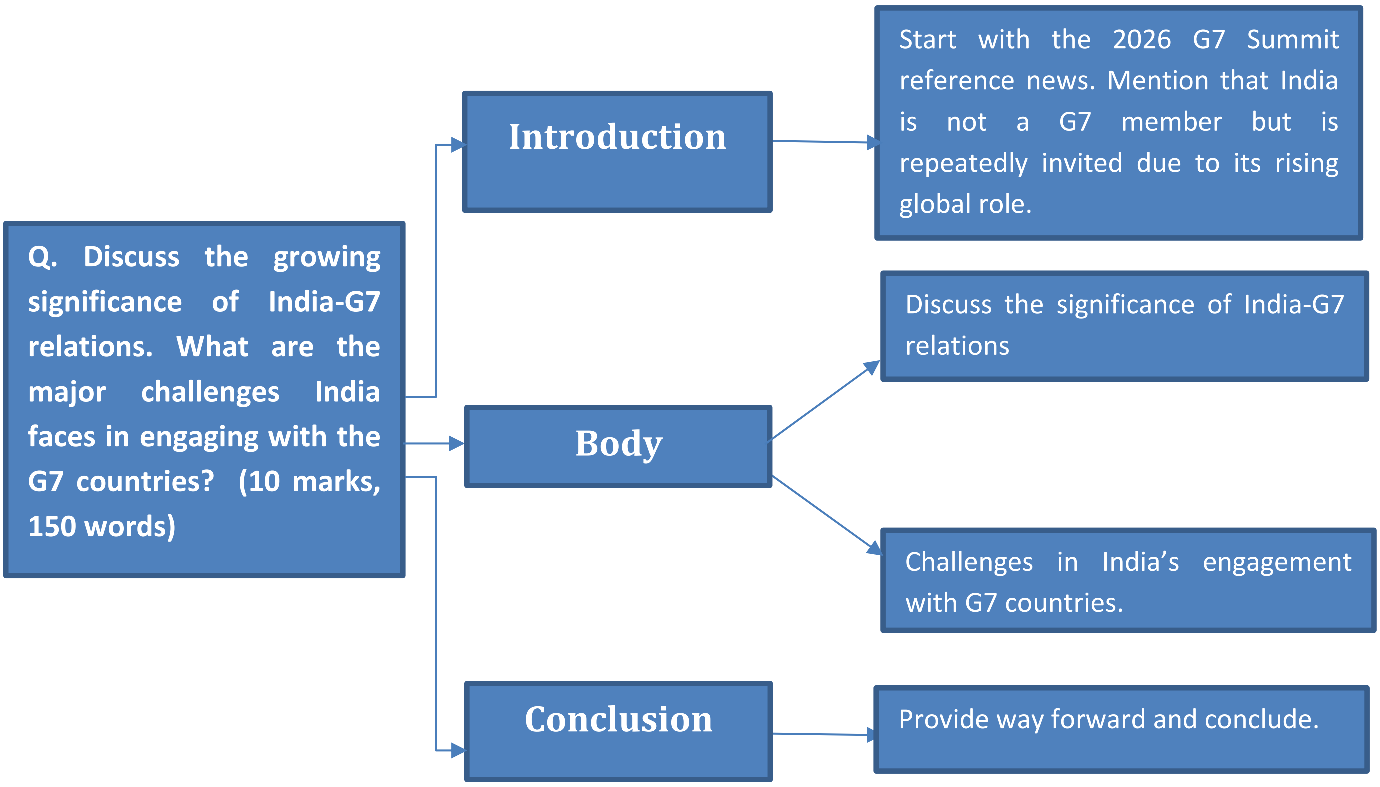
CONCLUSION:

- India's engagement with the G7 offers **major opportunities in technology, investment, climate finance, security and global governance**. However, India must **carefully manage geopolitical pressures, trade frictions and climate-related inequalities.** A balanced approach based on strategic autonomy, Global South leadership and issue-based cooperation will **help India shape global rules without losing policy independence.**

PRACTICE QUESTION

Q. Discuss the growing significance of India-G7 relations. What are the major challenges India faces in engaging with the G7 countries? (10 marks, 150 words)

APPROACH



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MODEL ANSWER

PM Modi's participation in the 2026 G7 Summit at Évian, France, at the invitation of President Emmanuel Macron, **highlighted India's rising role in global debates** on economic security, AI governance, critical minerals, energy transition, climate finance and Global South concerns**. Though India is not a G7 member, its repeated invitations show its growing relevance in shaping global rules.**

Significance of India-G7 Relations:

1.Recognition of India's Global Rise: India's participation in G7 outreach sessions reflects its importance as a major economy, technology hub, energy consumer and voice of the Global South.

2.Strategic and Security Cooperation: The G7 gives India a platform to engage major powers on terrorism, maritime security, West Asia, Ukraine, Indo-Pacific stability and energy security.

3.Economic and Investment Opportunities: India can attract G7 investments in clean energy, semiconductors, AI, digital infrastructure, defence manufacturing and innovation-led sectors.

4.Critical Minerals and Supply-Chain Resilience: Cooperation with G7 countries can help India secure lithium, cobalt, nickel and rare earths, which are vital for EVs, batteries, defence and renewable energy.

5. AI Governance and Digital Public Infrastructure: India's experience with Aadhaar, UPI, DigiLocker and India Stack gives it credibility in shaping human-centric and inclusive AI governance.

6. Climate Finance and Green Transition: The G7 is important for India because developed countries control major climate finance, green technology and carbon-market frameworks.

7. Voice of the Global South: India can use the G7 platform to raise issues of debt stress, food security, climate finance, technology access and reform of multilateral institutions.

8. Strengthening Multilateral Role: India's G7 engagement complements its role in G20, BRICS and other forums, reflecting its policy of multilateral engagement without exclusive alignment.

Challenges in India's Engagement with G7 Countries:

1. Limited Institutional Role: India is only an invited partner, not a permanent member. This limits its ability to influence final G7 decisions.

2. Russia Factor: India's defence dependence and energy engagement with Russia create friction with G7 countries, especially in the context of the Russia-Ukraine war.

3. Geopolitical Divergences: G7 positions on Ukraine, Iran, West Asia and China may not always match India's strategic interests and diplomatic priorities.

4. US-China Rivalry: India faces pressure to align with Western Indo-Pacific strategies, but it must avoid being drawn into rigid bloc politics.

5. Trade and Economic Frictions: Issues such as tariffs, market access, data rules, digital trade, industrial policy and India-EU FTA negotiations can create tensions.

6. Climate Finance and CBAM: The EU's Carbon Border Adjustment Mechanism may hurt Indian exports like steel, aluminium, cement and fertilisers, while promised climate finance remains inadequate.

7. Technology Restrictions: Export controls, IPR issues and unequal access to advanced technology can limit cooperation in AI, semiconductors, biotechnology and defence.

8. Human Rights and Democratic Narratives: Differences over democracy, civil liberties, internet regulation and governance may occasionally create diplomatic discomfort.

Way Forward

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- India should seek regular and structured G7 engagement on trade, AI, climate, health, critical minerals and development finance.
- It must preserve strategic autonomy while cooperating with G7 countries on areas of convergence.
- Defence, semiconductor, space, AI and clean-tech partnerships should be diversified.
- India should demand fair climate finance, affordable technology transfer and protection against green trade barriers like CBAM.
- It should use the G7 platform to highlight Global South concerns on debt, energy access, food security and digital divide.
- India must build domestic capacity in skills, R&D, manufacturing, innovation and ease of doing business.

India-G7 relations are becoming increasingly significant in a fragmented global order. However, India must balance opportunities in technology, investment, security and climate finance with challenges of geopolitical pressure, trade tensions and strategic autonomy. A calibrated approach based on issue-based cooperation and Global South leadership will help India shape emerging global rules without compromising national interests.

10. INDIA-MYANMAR RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS > International relations > India and Neighbours > India- Myanmar

REFERENCE NEWS:

- At the invitation of Prime Minister Narendra Modi, **U Min Aung Hlaing, President of the Republic of the Union of Myanmar**, paid his **first official visit to India from 30 May to 3 June 2026.**

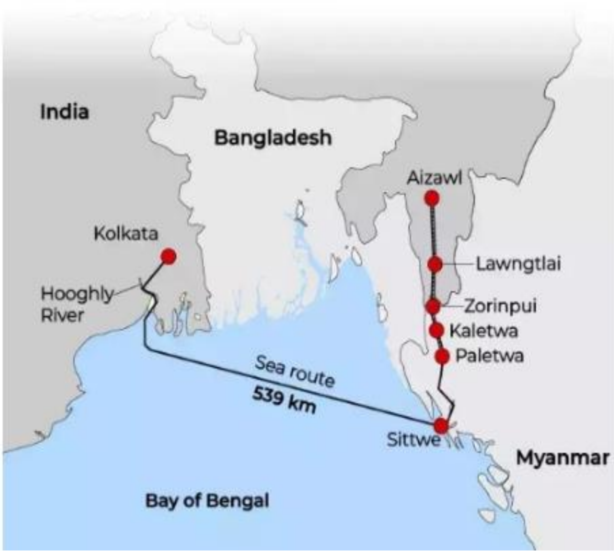
HIGHLIGHTS OF THE VISIT:

- **Myanmar's Strategic Importance for India:**
  - A major highlight was Prime Minister Modi's statement that **Myanmar lies at the confluence of India's Neighbourhood First, Act East and MAHASAGAR policies**. This underlines Myanmar's centrality in India's neighbourhood diplomacy, its outreach to Southeast Asia, and its wider maritime and regional security vision.

MAHASAGAR stands for **Mutual and Holistic Advancement for Security and Growth Across Regions**.It is India's expanded maritime and regional cooperation vision, building on the earlier **SAGAR** (Security and Growth for All in the Region) doctrine.

- **Connectivity and Regional Prosperity:**
  - Connectivity was a key focus of the visit. Prime Minister Modi underlined that **enhanced connectivity would foster mutually beneficial economic linkages and shared prosperity in the region**. In this context, both sides stressed the need to complete the **Kaladan Multi-Modal Transit Transport Project** and the **India–Myanmar–Thailand Trilateral Highway**.

Kaladan Multi Modal Transit Transport Project



- **Security and Border Management:**
  - Prime Minister Modi reaffirmed India's support for the **sovereignty and territorial integrity of Myanmar**. Both sides stressed that **sovereign territory should not be misused for activities harmful to each other's security interests.** Myanmar also assured that its territory would not be permitted to be used against India's security interests.
- **Cultural and Buddhist Linkages:**

  - The Myanmar President began his visit with prayers at **Mahabodhi Temple, Mahabodhi Meditation Centre and Sujata Temple** in Bodh Gaya on **30 May 2026**. This highlighted the enduring Buddhist, spiritual and people-to-people ties between India and Myanmar.
- **Trade and Economic Cooperation:**
  - Both sides agreed to facilitate and enhance bilateral trade, including through the **Rupee–Kyat settlement mechanism**. Cooperation in agro-processing, petroleum, energy, mining and investment was also discussed, in accordance with national laws and regulations.
- **India as a Trusted Partner:**
  - Prime Minister Modi affirmed that **India, as a steadfast and trusted partner of Myanmar, remained committed to deepening security cooperation** between the two countries. This is significant given the shared border, insurgency-related concerns and the importance of stability in India's Northeast.
- **Energy and Technology Cooperation:**
  - The visit to NTPC's NETRA complex highlighted scope for cooperation in clean energy, energy efficiency, renewable integration and grid resilience.
- **Peace, Stability and Reconciliation in Myanmar**:
  - India supported Myanmar-led efforts for peace, stability, national reconciliation and socio-economic development through mutual respect and cooperation.
- **Educational Cooperation**:
  - India announced enhancement of Mekong Ganga ICCR scholarships for Myanmar students from 36 to 100 from 2026 onwards.
- **Mumbai Leg and Future Engagement**:
  - The Mumbai visit on 2–3 June 2026 focused on strengthening economic ties, while Myanmar also invited Prime Minister Modi to visit Myanmar.

SIGNIFICANCE OF MYANMAR FOR INDIA:

- **Geostrategic and Connectivity Significance:**
  - Myanmar is the **only ASEAN country sharing a land border with India** and acts as India's land bridge to Southeast Asia. India shares a **1,643 km border** with Myanmar across Arunachal Pradesh, Nagaland, Manipur and Mizoram.
  - For instance, the **Kaladan Multimodal Transit Transport Corridor** links India's eastern ports with Myanmar and Northeast India through a **158 km waterway from Sittwe to Paletwa** and a **109 km road from Paletwa to Zorinpui**. Similarly, the **India–Myanmar–Thailand Trilateral Highway** is crucial for connecting Northeast India with Thailand and wider ASEAN.
- **Northeast India's Security and Development:**
  - Myanmar is directly connected to the stability and economic future of India's Northeast. Better connectivity through Myanmar can reduce isolation, promote trade and create livelihood opportunities in border States.
  - For example, developments in Myanmar's **Chin State, Sagaing Region and Rakhine State** directly affect **Manipur, Mizoram, Nagaland and Arunachal Pradesh** due to ethnic, cultural and historical linkages across the border.
- **Border Security and Counter-Insurgency:**
  - Myanmar is crucial for India's internal security because insurgent groups, narcotics networks, arms traffickers and refugee flows can operate across the porous border.

    - For instance, India and Myanmar use mechanisms such as the **National Level Meeting, Sectoral Level Meeting and Regional Border Coordination Committee Meeting** to discuss security cooperation, drug trafficking and border coordination.
- **China Factor and Strategic Autonomy:**
    - Myanmar is important for India's China strategy. China has deep influence in Myanmar through infrastructure, military ties and energy projects.
    - For example, **China's oil and gas pipelines** from the **Bay of Bengal to Yunnan** help Beijing reduce dependence on vulnerable maritime chokepoints like the **Malacca Strait.** Hence, India engages Myanmar to prevent it from becoming completely dominated by China.
- **Maritime and Bay of Bengal Significance:**
    - Myanmar's location on the Bay of Bengal makes it important for India's eastern Indian Ocean and **MAHASAGAR vision.**
    - For example, **Sittwe Port** under the Kaladan project provides India a strategic maritime-riverine route to Myanmar and the Northeast. It is managed by **India Ports Global Limited** and has berthed over **185 vessels**.
- **Trade, Investment and Financial Cooperation:**
    - Myanmar is economically relevant in specific sectors. Bilateral trade stood at **US$2.1 billion in 2024–25**, rising from **US$1.74 billion in 2023–24**. India exported over **US$614 million**, while imports from Myanmar were around **US$1.53 billion**. (Source: Ministry of External Affairs)
    - For example, India exports pharmaceuticals, cereals, machinery, vehicles and electrical machinery, while Myanmar exports pulses, wood products and agricultural goods. The **Rupee–Kyat Trade Settlement Mechanism**, operationalised in **January 2024**, also promotes local currency trade, with **nine Myanmar banks** establishing Special Rupee Vostro Accounts.
- **Development Partnership and Capacity Building:**
    - Myanmar is a major development partner for India. India's development assistance portfolio is around **US$1.5 billion**, of which nearly **US$1 billion** is grant-funded.
    - For example, India has supported the **Myanmar Institute of Information Technology**, **Rice Bio-Park**, **India–Myanmar Industrial Training Centres**, upgradation of **Yangon Children Hospital and Sittwe General Hospital**, and restoration of **Ananda Pagoda**.
- **Humanitarian and First Responder Role:**
    - Myanmar strengthens **India's image as a first responder** in the neighbourhood.
    - For example, after the **7.7 magnitude earthquake in March 2025**, India launched **Operation Brahma**, sending around **968 MT of HADR** through **nine military aircraft and five warships**. An Indian Army Field Hospital treated **2,519 patients**. India also sent **2,200 MT of rice** in December 2024 and provided flood relief under **Operation Sadbhav**.
- **Border and Rakhine Development:**
    - India uses development projects to **stabilise Myanmar's border regions and strengthen goodwill.**
    - For instance, under the **Border Area Development Programme**, India provided **US$25 million** and helped build **179 projects**, including **52 schools, 18 health centres and 106 bridges and roads**. Under the **Rakhine State Development Programme**, India committed another **US$25 million**, including **250 prefabricated houses**, solar electrification and healthcare support.

- **Cultural, Diaspora and Educational Linkages:**
  - India and Myanmar share Buddhist, civilisational and people-to-people ties.
  - For example, India restored the **Ananda Temple in Bagan**, donated a **16-foot Sarnath Buddha replica** to Shwedagon Pagoda, and Myanmar's President visited **Bodh Gaya** in 2026. India also enhanced **Mekong Ganga ICCR scholarships** for Myanmar students from **36 to 100** from 2026. The presence of **1.5–2.5 million people of Indian origin** in Myanmar further strengthens social and cultural links.

CHALLENGES IN INDIA–MYANMAR RELATIONS:

- **Military Rule and Democratic Dilemma:**
  - India's **engagement with Myanmar's military leadership** creates a dilemma between **democratic values and strategic interests**.
  - For example, India engages Min Aung Hlaing due to border security, connectivity and China-related concerns, but such engagement attracts criticism because of the **junta's repression and democratic rollback.**
- **Civil War and Fragmented Authority:**
  - Myanmar is **no longer controlled uniformly by the military**. Ethnic armed organisations and resistance forces control large areas.
  - For instance, parts of the Kaladan route pass through areas influenced by the **Chin Brotherhood** and **Arakan Army**. India negotiated the project with the Myanmar state, but **actual ground control may lie with different actors**.
- **Delayed Connectivity Projects:**
  - India's connectivity plans face security, terrain and implementation challenges.
  - For example, the Kaladan project has been discussed for over two decades. Though **Sittwe Port** is operational and has berthed over **185 vessels**, the **Paletwa–Zorinpui road** remains under progress due to instability and difficult terrain.
- **Border Insecurity and Refugee Pressures:**
  - The porous border creates risks of insurgency, narcotics trafficking, arms smuggling and refugee movement.
  - For instance, conflict in **Chin State and Sagaing Region** affects **Mizoram and Manipur**, where communities share ethnic ties across the border. This creates pressure on local administration and complicates border management.
- **China's Superior Leverage:**
  - China has much deeper influence in Myanmar than India.
  - For example, **China has oil and gas pipelines** from the Bay of Bengal to Yunnan, stronger economic resources, and links with both the Myanmar military and armed groups. This limits India's ability to shape outcomes inside Myanmar.
- **Limited Economic Weight and Trade Imbalance:**
  - India's economic influence remains modest compared to Myanmar's dependence on China.
  - For instance, India's trade with Myanmar was **US$2.1 billion in 2024–25**, but India's imports were around **US$1.53 billion**, while exports were only over **US$614 million**. India is also only the **eleventh-largest investor**, with approved investment of about **US$782.8 million**.
- **Rakhine and Rohingya Crisis:**

- Rakhine State is a major source of **instability due to the Arakan Army's rise**, Rohingya issue and China-linked infrastructure.
- For example, the Myanmar military claims willingness to take back Rohingya refugees, but many return areas are reportedly controlled by the Arakan Army. Bangladesh hosts around **one million Rohingya refugees**, creating a regional stalemate.

- **Weak Regional Response:**
  - ASEAN remains divided on Myanmar, limiting regional conflict resolution.
  - For example, some ASEAN members prefer engagement with the junta, while others are more critical. China's strong influence further restricts ASEAN's ability to act effectively.
- **Narcotics and Illicit Networks:**
  - Myanmar's borderlands are vulnerable to narcotics trafficking, arms smuggling and human trafficking.
  - For instance, drug trafficking is specifically discussed under India–Myanmar institutional mechanisms, showing that illicit networks are a recognised security concern for India.
- **Security–Development Contradiction:**
  - India wants development to stabilise Myanmar, but instability delays development itself.
  - For example, the Kaladan corridor is meant to promote connectivity and stability, but conflict along the route slows its completion. This creates a circular problem: security is needed for development, while development is needed for security.

WAY FORWARD:

- **Follow Balanced Engagement:**
  - India should continue practical engagement with Myanmar's authorities for security, connectivity and China-related concerns, while avoiding the perception of supporting one side in Myanmar's internal conflict.
- **Fast-Track Connectivity with Ground Realism:**
  - India should prioritise the **Kaladan project** and **Trilateral Highway** through better monitoring, security coordination and local stakeholder engagement, especially in conflict-affected stretches like **Paletwa–Zorinpui**.
- **Strengthen Northeast-Centric Border Management:**
  - India should link Myanmar policy with the needs of **Mizoram, Manipur, Nagaland and Arunachal Pradesh**, focusing on border infrastructure, refugee management, counter-insurgency and anti-narcotics cooperation.
- **Expand Development and Humanitarian Partnership:**
  - India should continue grant-based projects in healthcare, education, skill development, border infrastructure and disaster relief.
  - For example, India can build on its **US$1.5 billion assistance portfolio**, **BADP projects**, **Rakhine development projects**, **Operation Brahma** and **Operation Sadbhav**.
- **Counter China Through Positive Alternatives:**
  - India should offer transparent, people-centric and reliable development cooperation rather than trying to match China only through large investments.
  - For example, India can deepen cooperation in capacity building, pharmaceuticals, local currency trade, education, Buddhism and disaster relief.
- **Work with Regional Partners:**

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- India should coordinate with **ASEAN, Bangladesh, Thailand and Japan** on connectivity, refugee issues, Rakhine instability and humanitarian assistance.

CONCLUSION:

- Myanmar is indispensable for India's **Act East Policy, Northeast connectivity, border security, China strategy and Bay of Bengal outreach**. However, civil war, military rule and China's influence make the relationship difficult. India needs a pragmatic policy combining security cooperation, faster connectivity, development partnership and humanitarian outreach.

PRACTICE QUESTION

Q. "Myanmar remains central to India's strategic, economic and security interests in the eastern neighbourhood". Discuss the significance of India–Myanmar relations and examine the major challenges affecting bilateral ties. (15 marks , 250 words)

APPROACH

Q. "Myanmar remains central to India's strategic, economic and security interests in the eastern neighbourhood". Discuss the significance of India–Myanmar relations and examine the major challenges affecting bilateral ties. (15 marks , 250 words)

Introduction → **Start the introduction with the 2026 Myanmar President's visit to India and mention that it renewed focus on connectivity, security and economic cooperation.**

Body → Discuss the significance of India–Myanmar relations; Challenges in India–Myanmar relations

Conclusion → Provide way forward and conclude.

MODEL ANSWER

During the Myanmar President U Min Aung Hlaing's first official visit to India in June 2026, both sides emphasised **connectivity, border security, trade, cultural linkages and development cooperation.** The visit reaffirmed Myanmar's continuing importance for India's eastern neighbourhood, particularly for **Northeast India's stability, Southeast Asian connectivity and Bay of Bengal security.**

Significance of India–Myanmar Relations:

1. Land bridge to Southeast Asia: Myanmar is the only ASEAN country sharing a land border with India. It connects India's Northeast with Thailand and the wider ASEAN region through projects like the **Kaladan Multi-Modal Transit Transport Project** and the **India–Myanmar–Thailand Trilateral Highway**.

2. Security of Northeast India: India shares a **1,643 km border** with Myanmar across Arunachal Pradesh, Nagaland, Manipur and Mizoram. Stability in Myanmar's Chin, Sagaing and Rakhine regions directly affects peace, refugee movement and ethnic linkages in India's Northeast.

3. Counter-insurgency and border management: Myanmar is crucial for controlling insurgent sanctuaries, narcotics networks, arms trafficking and illegal cross-border movement. Institutional mechanisms like National Level Meetings and Regional Border Coordination Committee meetings support security cooperation.

4. Strategic balance against China: China has deep infrastructure, military and energy interests in Myanmar, including oil and gas pipelines from the Bay of Bengal to Yunnan. India's engagement helps prevent Myanmar from becoming completely dependent on China.

5. Maritime and Bay of Bengal relevance: Myanmar's location makes it important for India's eastern Indian Ocean strategy. **Sittwe Port**, developed under the Kaladan project, provides India a strategic maritime-riverine route to Myanmar and Northeast India.

6. Trade and economic cooperation: Bilateral trade stood at **US$2.1 billion in 2024–25**, with India exporting pharmaceuticals, cereals, machinery and vehicles, while importing pulses, wood products and agricultural goods. The **Rupee–Kyat settlement mechanism** also promotes local currency trade.

7. Development and humanitarian partnership: India's development assistance to Myanmar is around **US$1.5 billion**, including projects in IT, healthcare, industrial training, border infrastructure and heritage restoration. India also launched **Operation Brahma** after the March 2025 earthquake and provided rice and flood relief under other humanitarian initiatives.

8. Cultural and civilisational linkages: Shared Buddhist heritage, restoration of Ananda Temple, donation of a Sarnath Buddha replica to Shwedagon Pagoda and enhanced ICCR scholarships show the soft-power dimension of the relationship.

Challenges in India–Myanmar Relations:

1. Military rule and democratic dilemma: India has to engage Myanmar's military leadership for strategic and security reasons, but this creates tension with India's democratic values and attracts criticism due to repression and democratic rollback.

2. Civil war and fragmented authority: Myanmar is no longer uniformly controlled by the military. Ethnic armed organisations and resistance forces control many areas, including regions through which Indian connectivity projects pass.

3. Delay in connectivity projects: The Kaladan project has been discussed for over two decades. Though Sittwe Port is operational, the Paletwa–Zorinpui road remains delayed due to difficult terrain and instability.

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4. Border insecurity and refugee pressure: Conflict in Chin State and Sagaing Region affects Mizoram and Manipur because of ethnic ties across the border. This creates administrative, humanitarian and security challenges for India.

5. China's superior leverage: China has greater economic resources, infrastructure investments and links with both the Myanmar military and armed groups. This limits India's ability to influence outcomes.

6. Limited economic weight: India's trade and investment presence remains modest. In 2024–25, India's imports from Myanmar were around **US$1.53 billion**, while exports were only over **US$614 million**, reflecting a trade imbalance.

7. Rakhine and Rohingya crisis: Instability in Rakhine State, the rise of the Arakan Army and the unresolved Rohingya issue create regional tensions involving Myanmar, India and Bangladesh.

8. Narcotics and illicit networks: Myanmar's borderlands are vulnerable to narcotics trafficking, arms smuggling and human trafficking, making border management more complex.

Way Forward:

1. **Balanced engagement:** India should engage Myanmar on security, connectivity and humanitarian issues without appearing partisan in its internal conflict.
2. **Fast-track connectivity:** Kaladan and the Trilateral Highway should be completed through better monitoring, security coordination and local engagement.
3. **Northeast-centric policy:** Border management, refugee handling, anti-narcotics action and livelihoods in Northeast India should guide Myanmar policy.
4. **Expand development partnership:** India should continue support in health, education, skills, border infrastructure and disaster relief.
5. **Counter China positively:** India should offer transparent, people-centric cooperation in capacity building, pharma, education and local currency trade.
6. **Regional coordination:** India should work with ASEAN, Bangladesh, Thailand and Japan on connectivity, refugees and Rakhine instability.

Myanmar is indispensable for India's eastern connectivity, Northeast security, Bay of Bengal outreach, trade interests and strategic balancing. However, **military rule, civil war, China's influence, border instability and delayed projects make the relationship complex**. Therefore, India needs a pragmatic approach combining **security cooperation, faster connectivity, development partnership and humanitarian outreach.**

11. INDIA-NEPAL RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International relations > India and Neighbours > India- Nepal

REFERENCE NEWS:

- Recently, India–Nepal relations came into focus after **Nepal Prime Minister** Balendra Shah "Balen" stated in Parliament that the **Kalapani–Lipulekh–Limpiyadhura boundary issue was not one-sided** and should be resolved through diplomatic dialogue.
- He noted that **"in some places, Nepal may also be occupying territory claimed by India"** and called for both countries to examine facts objectively and resolve the matter amicably as friends. This came alongside **Prime Minister Narendra Modi's statement expressing India's readiness to work closely with Nepal** to take bilateral friendship and cooperation to greater heights.

HISTORY OF INDIA NEPAL RELATIONS:

- Founded on the age-old connection of **history, culture, tradition** and **religion**, Nepal and India enjoy excellent bilateral ties.
- Nepal **shares a border of over 1850 km** with **five Indian states –** Sikkim, West Bengal, Bihar, Uttar Pradesh and Uttarakhand.
- The **India-Nepal Treaty of Peace and Friendship of 1950** forms the bedrock of the special relations that exist between India and Nepal.

AREAS OF COOPERATION:

- **Political**
  - Regular high-level visits: PM Narendra Modi has visited Nepal five times since 2014, including Lumbini (May 2024, Buddha Purnima) under *Neighbourhood First*.
  - Parliamentary exchanges: Nepali MPs and officials often visit India for study tours.
  - Diplomatic presence: India's Embassy in Kathmandu + Consulate General in Birgunj; Nepal's Embassy in Delhi + Consulate in Kolkata.
- **Economic**
  - **Trade**: India is Nepal's largest partner; bilateral trade crossed **USD 7 billion (2019-20)**. Nepal's imports from India: petroleum, vehicles, machinery, medicines. India provides **transit for almost all third-country trade**.
  - **Investment**: Indian firms account for **30%+ of approved FDI**.
- **Defence**
  - India supports Nepal Army modernisation with **equipment, training, disaster aid**.
  - *Exercise SURYA KIRAN* held alternately in both countries.
  - **Gorkha regiments** in Indian Army partly recruited from Nepal.
- **Disaster Management**
  - 2015 earthquake: India sent **NDRF teams, aircraft, relief supplies**.

- Pandemic: India provided **1 million Covishield doses** and an **oxygen plant**.
- **Connectivity & Development Partnership**
  - Projects in connectivity, health, water, education, rural development.
  - Examples: **B.P. Koirala Institute of Health Sciences (Dharan)**, **Integrated Check Post (Birgunj)**, **Kurtha–Jayanagar railway**.
- **Water Resources**
  - 2008 three-tier bilateral mechanism on water, flood management, inundation, hydropower.
- **Energy Cooperation**
  - **2014 Power Trade Agreement**: allows cross-border electricity trade.
  - Nepal achieved **energy surplus (2021)**; began selling **39 MW to India** via Indian Energy Exchange.
  - **Joint Vision Statement (2022)**: more transmission lines, 325 MW additional export.
  - Collaborative projects: **Lower Arun, Upper Karnali, Trishuli hydropower**.
  - **Motihari–Amlekhgunj petroleum pipeline**: South Asia's first cross-border fuel pipeline.
- **Human Resource Development**
  - **Visa-free entry** boosts people-to-people ties.
  - India provides **~3,000 scholarships annually** to Nepali students at all levels.
- **Culture**
  - **B.P. Koirala India-Nepal Foundation (1991)**, **Swami Vivekananda Centre (2007)** in Kathmandu.
  - Cultural MoUs: **Sahitya Kala Akademi–Nepal Academy; Doordarshan–Nepal TV**.
  - Hindu cultural links: PM Deuba's visit to **Varanasi**, Nepal's religious hub in India.
- **Diaspora**
  - **6 lakh Indians in Nepal; 8 million Nepalis in India.**
  - Nepalis enjoy parity with Indian citizens under **1950 Treaty of Peace & Friendship**.
  - **Multilateral & Regional Fora**
  - Cooperation in **UN, NAM, SAARC, BIMSTEC, BBIN**.

SIGNIFICANCE OF NEPAL FOR INDIA:

- **Geostrategic Significance:**
  - Nepal occupies a **critical location in the central Himalayas between India and China.**
  - It acts as a **strategic buffer** for India's northern security, especially after the increased **India-China contestation** in the Himalayan region.
  - Developments in Nepal directly affect India's security environment in Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim.
- **Border Security Significance:**
  - India and Nepal share an **open and porous border of over 1,750 km**, enabling free movement of people, goods and culture.
  - However, the same openness also creates **challenges of smuggling, trafficking, fake currency, narcotics movement and possible infiltration.**
  - Any weakening of law enforcement in Nepal can increase internal security pressures on India's border states.

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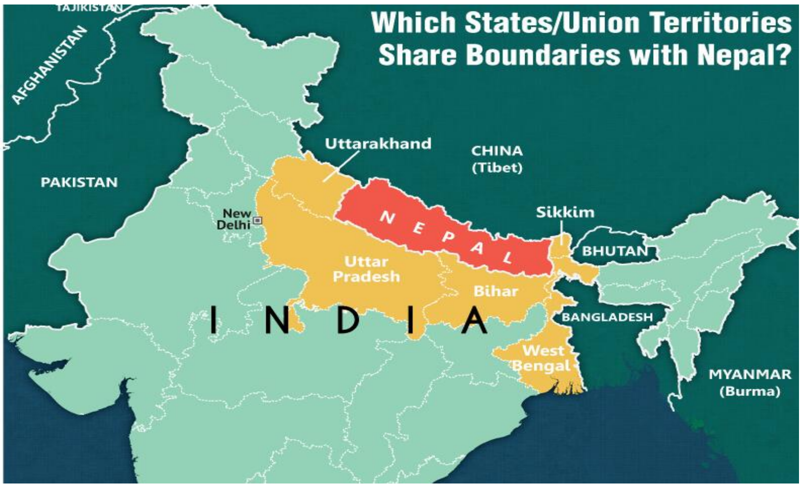


- **China Factor:**
  - Nepal is central to **India's Himalayan strategy** because China has been expanding its presence through infrastructure, connectivity, trade and political outreach.
  - A political vacuum or anti-India nationalism in Nepal **can allow Beijing to deepen its influence in Kathmandu.**
  - Chinese involvement in hydropower, roads, railways and digital infrastructure may reduce India's traditional strategic leverage.
- **Economic Significance:**
  - **India is Nepal's largest trade partner** and one of its biggest sources of investment.
  - Nepal **depends heavily on India** for petroleum products, medicines, food items, machinery, vehicles and access to third-country trade through Indian ports.
  - Smooth functioning of key trade routes such as Raxaul-Birgunj is crucial for Nepal's economy and for Indian border economies.
- **Connectivity and Regional Integration:**
  - Nepal is important for India's vision of regional connectivity under **Neighbourhood First, BIMSTEC, BBIN and Act East policy.**
  - Rail links, integrated check posts, highways and petroleum pipelines help connect the Himalayan region with the Gangetic plains.
  - Projects such as **Jayanagar-Kurtha railway, Raxaul-Kathmandu rail** proposal and **Motihari-Amlekhgunj petroleum** pipeline strengthen economic interdependence.
- **Hydropower and Energy Security:**
  - **Nepal's hydropower potential** is important for **India's clean energy transition and regional electricity trade.**
  - India's investment in projects such as Arun-III, Upper Karnali and other hydropower ventures can help meet India's renewable energy needs. o Nepal's electricity export to India and Bangladesh through Indian transmission lines can strengthen India's role as a regional energy hub.
- **Water Resources and Flood Management:**
  - Rivers originating in Nepal flow into India and affect **large parts of Bihar and Uttar Pradesh.**
  - Cooperation on flood control, embankments, river training and hydrological data sharing is vital for disaster risk reduction in India.
  - **Poor coordination can worsen floods, inundation and livelihood losses in India's Gangetic plains.**

- **People-to-People and Cultural Significance:**
    - India and Nepal share deep civilisational, religious and cultural links through **Hinduism, Buddhism, pilgrimage, language and kinship.**
    - Places such as **Lumbini, Pashupatinath, Janakpur, Varanasi and Ayodhya** create a shared cultural geography.
    - The open border enables marriage ties, employment, education and daily cross-border interaction, making the relationship socially unique.
- **Defence and Military Significance:**
    - The Indian and Nepali armies share a strong institutional relationship, including the tradition of **conferring honorary general ranks on each other's Army chiefs.**
    - The **Gorkha regiments in the Indian Army** reflect a unique defence connection between the two countries.
    - Joint exercises such **as Surya Kiran** help strengthen cooperation in **counter-terrorism, mountain warfare and disaster response.**
- **Humanitarian and Internal Security Spillovers:**
    - Political instability in Nepal can quickly affect India due to the open and porous border.
    - For instance, **during the September 2025 Gen Z protests**, India issued travel advisories and border-security concerns emerged after jailbreaks in Nepal.
    - Such situations may increase pressure on Indian border states through movement of distressed civilians, stranded Indians, escaped convicts, smuggling and cross-border crime.
- **Neighbourhood First Policy:**
    - Nepal is a test case for **India's Neighbourhood First policy** because of its geography, history and public sensitivity towards sovereignty.
    - India must balance strategic interests with respect for Nepal's political autonomy and nationalist sentiments.
    - Excessive intervention may trigger anti-India backlash, while neglect may allow external powers to gain influence.
- **Regional and Multilateral Importance:**
    - A **stable Nepal is important for the success of SAARC, BIMSTEC, BBIN and sub-regional connectivity initiatives.**
    - India's efforts to build a connected, secure and prosperous neighbourhood require Nepal's active participation.
    - Instability in Nepal can weaken India's image as a regional stabiliser and complicate wider Himalayan geopolitics.

STRAINS IN INDIA–NEPAL RELATIONS:

- **Political Instability in Nepal:**
    - Nepal has witnessed **frequent changes of government**, making long-term bilateral planning difficult.
    - Policy continuity is often affected in areas such as hydropower, connectivity, trade, border management and treaty revision.
    - The **Gen Z protests in 2025** and the collapse of the government showed how domestic instability in Nepal can test India's diplomacy and border management.
- **Border Disputes:**

  - The unresolved boundary dispute over Kalapani, Lipulekh and Limpiyadhura remains a major irritant in bilateral relations.
  - **Nepal's revised political map** and India's rejection of Nepal's claims have hardened public positions on both sides.
  - Such disputes create mistrust and affect cooperation in sensitive areas such as water-sharing, hydropower and border infrastructure.
- **Anti-India Sentiments and Nationalist Politics:**
  - Sections of Nepal's political class and civil society often criticise India's perceived **"Big Brother" approach.**
  - The 2015 blockade controversy after Nepal's new Constitution created a deep trust deficit in Nepalese public opinion. Anti-India narratives are sometimes used by political actors to mobilise domestic support during periods of political crisis.
- **China Factor:**
  - China's growing presence in Nepal **through infrastructure, trade, investments, political outreach and BRI-related projects** has added a strategic dimension to India–Nepal relations.
  - Chinese involvement in connectivity, hydropower and digital infrastructure may reduce India's traditional influence in Nepal. For India, Nepal's location between India and China makes any external strategic presence in Nepal a matter of security concern.
- **External Geopolitical Pressures:**
  - Nepal is increasingly exposed to major power competition, as seen in the controversy over the **US Millennium Challenge Corporation grant.**
  - The MCC debate showed how external development assistance can become politically sensitive in Nepal due to fears of strategic alignment.
  - For India, **excessive external influence in Nepal may complicate its traditional role as Nepal's closest neighbour and development partner.**
- **Unresolved Treaty Revision Issue:**
  - The 1950 India–Nepal Treaty of Peace and Friendship is often criticised in Nepal as being unequal or outdated.
  - The Eminent Persons' Group submitted its report in 2018 to suggest ways to update the relationship, but the report has not been formally received by India. This has created **a perception in Nepal that India is reluctant to revise the old framework of bilateral relations.**

- **Internal Security Concerns:**
  - The open India–Nepal border is a **symbol of close people-to-people ties, but it also creates security challenges.**
  - Smuggling, trafficking, fake currency movement, narcotics trade and possible terrorist infiltration remain concerns for India.Political instability or weak policing in Nepal can further increase cross-border crime and pressure on Indian border states.
- **Delayed Development Projects:**
  - Several India-assisted projects in Nepal have faced delays due to political changes, local opposition, bureaucratic hurdles and environmental concerns.
  - Projects such as the **Pancheshwar Multipurpose Project have remained delayed despite their importance** for power generation, irrigation and flood management.

- **Hydropower and Water-Sharing Differences:**
  - Although hydropower is a major area of cooperation, differences over benefit-sharing, pricing, **environmental concerns and project implementation often slow progress.**
  - Nepal wants greater control and benefits from its water resources, while India is concerned about flood control, irrigation, energy security and downstream impacts. These differences **affect projects linked to the Mahakali, Koshi, Gandak and other river systems.**

WAY FORWARD:

- **Resolve Boundary Issues:**
  - India and Nepal should revive diplomatic and technical talks on Kalapani, Lipulekh and Limpiyadhura.
  - Both sides should avoid nationalist rhetoric and seek a practical, mutually acceptable solution.
- **Update the Treaty Framework:**
  - Concerns over the 1950 Treaty should be addressed through dialogue.
  - India may engage with the EPG recommendations to reduce Nepal's perception of inequality.
- **Strengthen Economic and Connectivity Ties:**
  - Trade, investment, tourism, digital payments and private sector cooperation should be expanded.
  - Rail, road, integrated check posts, petroleum pipelines and digital links should be completed faster.

- **Deepen Energy and Water Cooperation:**
  - India should expand purchase of Nepal's surplus hydropower and support cross-border transmission lines.
  - Flood control, river data-sharing and projects like Pancheshwar should be accelerated.
- **Improve Security Coordination:**
  - SSB, Nepalese security forces and local police should strengthen coordination along the open border.
  - Joint action is needed against smuggling, trafficking, fake currency, narcotics and cross-border crime.
- **Respect Nepal's Sovereignty:**
  - India should follow a sensitive and non-intrusive approach towards Nepal's domestic politics.
  - This can reduce anti-India sentiment and strengthen trust.
- **Promote People-to-People Ties:**
  - Cultural circuits, education, scholarships, tourism and youth exchanges should be expanded.
  - India and Nepal should also use BIMSTEC and BBIN for regional connectivity and cooperation.

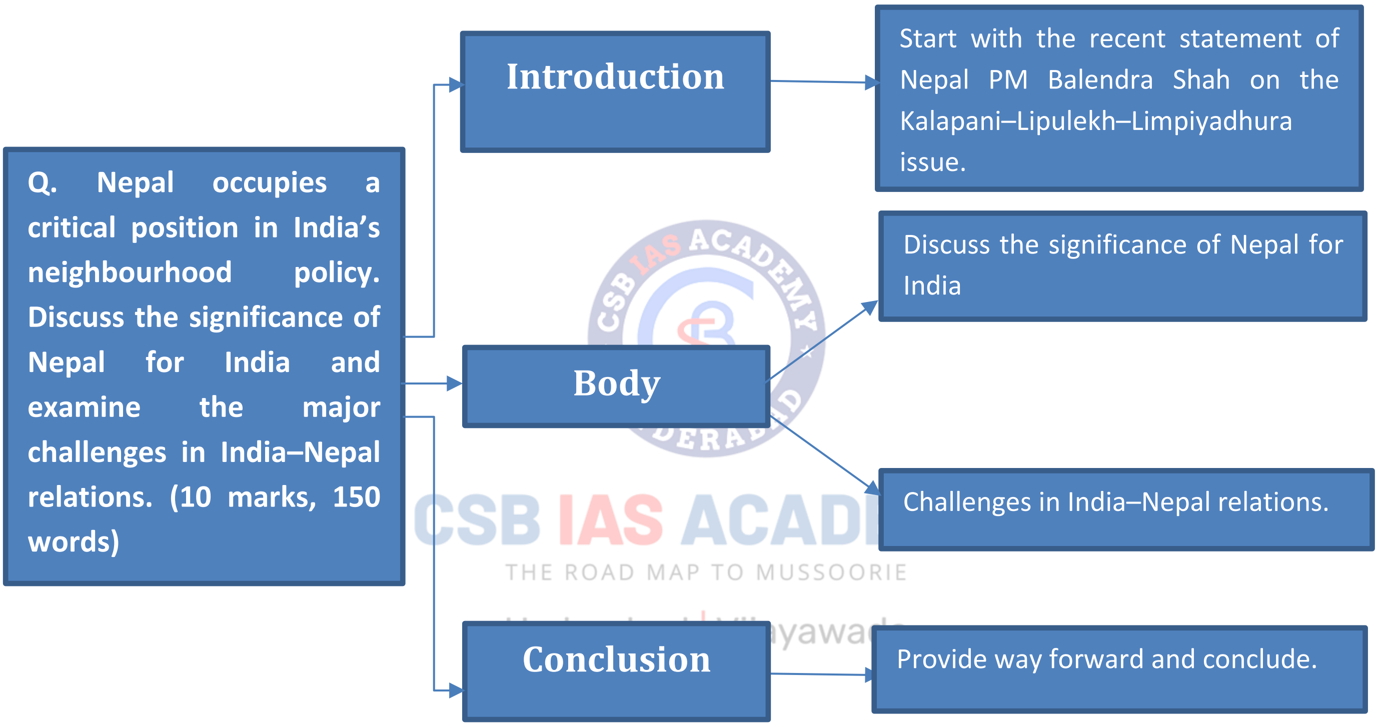
CONCLUSION:

- India and Nepal share a relationship that goes beyond diplomacy, rooted in geography, culture, economy and people-to-people ties. Resolving irritants with sensitivity and expanding practical cooperation can transform the relationship into a model of stable neighbourhood partnership.

PRACTICE QUESTION

Q. Nepal occupies a critical position in India's neighbourhood policy. Discuss the significance of Nepal for India and examine the major challenges in India–Nepal relations. (10 marks, 150 words)

APPROACH



MODEL ANSWER

Recently, India–Nepal relations came into focus after Nepal Prime Minister Balendra Shah "Balen" stated that the Kalapani–Lipulekh–Limpiyadhura boundary issue was not one-sided and should be resolved through diplomatic dialogue. This reflects both the sensitivity and the strategic importance of India–Nepal relations.

SIGNIFICANCE OF NEPAL FOR INDIA:

1. **Geostrategic Importance:**
   - Nepal lies between India and China and acts as a crucial Himalayan buffer.
   - Developments in Nepal directly affect India's security environment in Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim.
2. **Open Border and People-to-People Ties:**
   - The open India–Nepal border enables free movement, employment, marriage ties, pilgrimage and cultural exchange.
   - Shared civilisational links through Hinduism, Buddhism, Lumbini, Janakpur, Ayodhya and Varanasi make the relationship unique.

3. **Economic and Connectivity Importance:**
    - India is Nepal's largest trade partner and provides access to third-country trade through Indian ports.
    - Projects like Jayanagar-Kurtha railway, Integrated Check Posts and Motihari-Amlekhgunj pipeline deepen interdependence.
4. **Energy and Water Security:**
    - Nepal's hydropower potential is important for India's clean energy transition.
    - Rivers from Nepal affect flood control, irrigation and disaster management in Bihar and Uttar Pradesh.
5. **Defence and Regional Cooperation:**
    - Nepal is important for border security, Gorkha recruitment and Exercise Surya Kiran.
    - A stable Nepal strengthens India's Neighbourhood First policy, BIMSTEC and BBIN connectivity.

CHALLENGES IN INDIA–NEPAL RELATIONS:

1. **Boundary Disputes:**
    - Disputes over Kalapani, Lipulekh and Limpiyadhura remain major irritants.
    - Hardened public positions on both sides make resolution politically sensitive.
2. **Anti-India Sentiments:**
    - The 2015 blockade controversy created a trust deficit in Nepalese public opinion.
    - India is often criticised for a perceived "Big Brother" approach.
3. **China Factor:**
    - China's growing role through BRI, infrastructure, investments and political outreach challenges India's influence.
    - Nepal's location between India and China makes this strategically sensitive.
4. **Political Instability in Nepal:**
    - Frequent changes of government affect continuity in hydropower, connectivity, trade and treaty-related cooperation.
    - Domestic unrest can also create border-management pressures for India.
5. **Open Border Security Risks:**
    - The open border creates risks of smuggling, trafficking, fake currency, narcotics and cross-border crime.
    - Weak policing or instability in Nepal can increase pressure on Indian border states.
6. **Delayed Projects and Treaty Issues:**
    - Projects like Pancheshwar have remained delayed, weakening trust
    - Non-resolution of concerns around the 1950 Treaty and EPG report also creates dissatisfaction in Nepal.

WAY FORWARD:

1. Revive diplomatic and technical talks to resolve boundary disputes peacefully.
2. Address concerns over the 1950 Treaty through dialogue and engagement with EPG recommendations.

3. Complete connectivity, hydropower and flood-management projects faster.
4. Strengthen SSB–Nepal security coordination against cross-border crime.
5. Respect Nepal's sovereignty while expanding trade, tourism, scholarships and cultural circuits.
6. Use BIMSTEC and BBIN to make Nepal a partner in regional connectivity.

India and Nepal share a relationship rooted in geography, culture, economy and people-to-people ties. Resolving irritants with sensitivity and expanding practical cooperation can transform it into a model neighbourhood partnership.

12. INDIA-SEYCHELLES RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations

REFERENCE NEWS:

PM Narendra Modi reaffirmed India's **MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)** vision during his Seychelles visit.

MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)

- The vision seeks to transform the **Indian Ocean into an "Ocean of Opportunity"** by promoting maritime security, sustainable development, economic prosperity, rules-based cooperation and partnerships based on **mutual respect, trust and equality**, irrespective of the size of countries.

Shared Responsibility in the Indian Ocean Region (IOR)

- India emphasised that the **Indian Ocean is a shared home**, making its Security, Sustainability, and Prosperity, a **collective responsibility** of all littoral states.

SESEL Joint Vision

- Both countries agreed to implement the **Joint Vision for Sustainability, Economic Growth and Security through Enhanced Linkages (SESEL)**, adopted during the Seychelles President's visit to India in February 2026. The framework will guide future bilateral cooperation.

Economic Cooperation

- India and Seychelles agreed to make bilateral economic ties more resilient.
- Explore new business and investment opportunities.
- Enhance cooperation in emerging sectors.

Connectivity

- Both countries will work towards improving **maritime and air connectivity**.
- Better connectivity is expected to boost bilateral trade.
- Strengthen India's engagement with **East Africa** and the **Indian Ocean Region (IOR)**.

Digital Public Infrastructure (DPI)

- India will share its experience in **Digital Public Infrastructure (DPI)** with Seychelles.
- A **Memorandum of Understanding (MoU)** was signed for implementing **Unified**

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Payments Interface (UPI) in Seychelles.

- The initiative aims to promote Digital payments, financial inclusion, digital transformation

Memorandums of Understanding (MoUs)

- MoUs were exchanged in areas including Healthcare, Agriculture, Digital technology, Economy, Capacity building, Development cooperation

Golden Jubilee Celebrations

- PM Modi attended Seychelles' **50th Independence Day** celebrations as the **Guest of Honour**, highlighting the close and enduring bilateral relationship.

INDIA-SEYCHELLES RELATIONS- EVOLUTION:

- **Historical and Colonial Linkages (1770–1975)**
  - **1770:** The **first recorded settlers** of Seychelles included **five Indians**, who arrived as plantation workers alongside French settlers and African slaves.
  - During British rule, Seychelles was administered for a period from the **Bombay Presidency**, resulting in regular shipping links with India, migration of Indian traders, mainly from **Tamil Nadu, Puducherry and Gujarat**.
- **Diplomatic Foundation after Independence (1976–1990s)**
  - India established diplomatic relations immediately after Seychelles gained independence on **29 June 1976**.
  - **INS Nilgiri** participated in Seychelles' Independence Day celebrations, marking India's early commitment to the island nation.
  - India established its diplomatic mission in Victoria in **1979**, while Seychelles opened its resident mission in New Delhi in **2008**.
- **Strategic Partnership under SAGAR (2015–2023):** Prime Minister Narendra Modi's **2015 visit**—the first by an Indian Prime Minister in **34 years**—marked a turning point in bilateral relations.
  - Launch of **SAGAR (Security and Growth for All in the Region)**.
  - Inauguration of the **Coastal Surveillance Radar System**.

SIGNIFICANCE OF THE BILATERAL RELATIONS TO INDIA:

Strategic Location in the Indian Ocean Region (IOR)

- Seychelles is located near major **Sea Lines of Communication (SLOCs)** connecting Asia, Africa, Europe, West Asia.
- It lies close to strategic maritime chokepoints such as **Mozambique Channel**, **Cape of Good Hope**, **Bab-el-Mandeb Strait**.
- Nearly **95% of India's trade by volume** and about **68% of its crude oil imports** are transported through the Indian Ocean, making secure sea lanes vital for India's economy.
- Seychelles acts as India's maritime outpost in the **Western Indian Ocean**, enhancing surveillance over critical shipping routes.

Maritime Security and Maritime Domain Awareness (MDA)

- Seychelles is an indispensable partner in safeguarding India's maritime interests.
- India has installed **six Coastal Surveillance Radar Systems (CSRS)**. Linked them with the **Information Fusion Centre–Indian Ocean Region (IFC-IOR)**. Conducted joint EEZ surveillance. Organised the biennial **Exercise LAMITYE**.
- These initiatives help combat piracy, maritime terrorism, drug trafficking, Illegal, Unreported and Unregulated (IUU) fishing and human trafficking.
- In 2026, India handed over the **Made-in-India Fast Patrol Vessel PS LESPWAR** to strengthen Seychelles' maritime surveillance.

Countering China's Expanding Footprint

- Seychelles occupies an important position in India's efforts to maintain a favourable balance of power in the Indian Ocean.
- Strong ties help prevent strategic vacuums that could be exploited under China's **String of Pearls Strategy**.
- India's maritime cooperation, radar network and defence assistance provide a credible alternative to China's expanding economic and naval presence.

Advancing India's Vision MAHASAGAR and SAGAR

- Seychelles is among the foremost partners for implementing **SAGAR** (Security and Growth for All in the Region), **MAHASAGAR** (Mutual and Holistic Advancement for Security and Growth Across Regions)
- The 2026 visit operationalised MAHASAGAR through agreements on UPI, healthcare, space, agriculture, maritime security.

Gateway to Africa and the Western Indian Ocean

- Seychelles is a member of **African Union (AU)**, **Indian Ocean Commission (IOC)**, **Indian Ocean Rim Association (IORA), Colombo Security Conclave (CSC)**.
- This strengthens India's Africa outreach, Indo-Pacific strategy, regional diplomacy.
- Enhanced connectivity with Seychelles strengthens India's engagement with **East Africa** and the wider Indian Ocean Region.

Blue Economy Partnership

- Seychelles possesses an **Exclusive Economic Zone (EEZ) of about 1.3 million sq. km**, despite its small land area.
- India collaborates in sustainable fisheries, ocean governance, marine research, coastal resource management, renewable ocean energy. ICAR–Seychelles Agricultural Work Plan (2026–31). Cooperation on sustainable ocean governance recognised through the **Guardian of the Blue Horizon** award.

Digital and Development Diplomacy

- India is exporting successful Digital Public Infrastructure (DPI) models to Seychelles.
- Key initiatives include **UPI deployment**, Digital payments, Capacity building, Digital governance.

- NPCI International signed an agreement with the Central Bank of Seychelles to roll out **UPI**, enhancing financial inclusion.

Expanding India's Soft Power

- India enjoys considerable goodwill through healthcare assistance, scholarships, capacity building, ITEC training, diaspora connections and cultural exchanges.
- Over **1% of the Seychellois population** are alumni of India's **ITEC Programme**.
- Around **12,000 Persons of Indian Origin (PIOs and NRIs)** live in Seychelles, playing a significant role in commerce and public life.

Climate and Small Island Developing States (SIDS)

- Seychelles is an important partner in India's climate diplomacy.
- Areas of cooperation renewable energy, disaster resilience, blue carbon, coral reef conservation, International Solar Alliance (ISA).

Security and Defence Partnership: India emerged as Seychelles' principal maritime security partner.

- **1986:** During **Operation Flowers are Blooming**, the Indian Navy deployed **INS Vindhyagiri** to assist Seychelles in thwarting an attempted coup.
- Regular **EEZ surveillance** by the Indian Navy.
- Installation of **six Coastal Surveillance Radar Systems (CSRS)** integrated with India's maritime surveillance network.
- Biennial joint military exercise **LAMITYE**. Seychelles' participation in **MILAN Naval Exercise**.
- India gifted: **Two Dornier Maritime Surveillance Aircraft**, Patrol vessels (**PS Topaz**, **PS Constant**), Fast Interceptor Boat **PB Hermes**.

CHALLENGES OF THE BILATERAL RELATIONS:

Growing Chinese Presence in the Indian Ocean Region

- Seychelles occupies a strategic position near major **Sea Lines of Communication (SLOCs)** in the Western Indian Ocean.
- China's **String of Pearls Strategy** seeks to enhance its influence through a network of ports and maritime infrastructure across the Indian Ocean.
- Seychelles has received Chinese assistance for infrastructure projects and public buildings.
- The Assumption Island project became more sensitive amid increasing geopolitical competition.

Domestic Political Opposition to Strategic Projects

- The proposed **Assumption Island Joint Naval Facility**, signed in **2015**, faced strong domestic opposition.
- Critics feared the project could compromise Seychelles' sovereignty and militarise the island.

Maritime Security Threats

- Seychelles possesses one of the world's largest Exclusive Economic Zones (EEZs) relative to its land area but has limited resources to monitor it effectively. EEZ of approximately **1.3–1.4 million sq. km**.
- India has installed **six Coastal Surveillance Radar Systems** and linked them to the **Information Fusion Centre–Indian Ocean Region (IFC-IOR)** to improve Maritime Domain Awareness.

Limited Economic Engagement

- Bilateral trade stood at only **about US$73 million (2024–25)**.
- Trade is heavily in India's favour. Absence of direct shipping and air connectivity increases transaction costs.
- Limited private-sector investment. Underutilisation of trade and tourism potential.
- India exports pharmaceuticals, rice, medical equipment and vehicles, while imports from Seychelles remain modest.

Limited Institutional and Administrative Capacity

- As a Small Island Developing State (SIDS), Seychelles has a limited administrative workforce. Small government departments often struggle to execute multiple infrastructure and development projects simultaneously.
- Several infrastructure and capacity-building projects have experienced slower execution due to institutional constraints.

Climate Change and Environmental Vulnerability

- Seychelles is highly vulnerable to climate-induced risks. Major threats include sea-level rise, coral bleaching, coastal erosion, marine biodiversity loss and extreme weather events
- Threatens fisheries and tourism, which are the backbone of Seychelles' economy. Increases demand for climate finance and disaster resilience.

Supply Chain Vulnerabilities

- As an island economy, Seychelles is heavily dependent on imports.
- Global disruptions, including the **West Asia crisis**, exposed vulnerabilities in food, fuel, and construction material supplies.

Connectivity Constraints

- Limited maritime and air connectivity restricts deeper economic integration. No regular direct shipping services. Limited flight connectivity between India and Seychelles.

Balancing Strategic Autonomy

- Seychelles follows a policy of maintaining balanced relations with multiple powers. It engages with India China France the United States European Union. Limits the extent of exclusive strategic partnerships.
- Requires India to rely on development cooperation and trust rather than geopolitical competition.

WAY FORWARD:

- **Strengthen Maritime Security:** Enhance Maritime Domain Awareness (MDA), intelligence sharing, joint naval patrols, and cooperation through the **IFC-IOR** and **Colombo Security Conclave** to combat piracy, IUU fishing, and maritime crime.
- **Promote the Blue Economy:** Expand cooperation in sustainable fisheries, marine biotechnology, ocean research, blue carbon projects, and renewable ocean energy under **MAHASAGAR**.
- **Expand Digital Partnership:** Scale up **Digital Public Infrastructure (DPI)** by implementing **UPI**, digital governance, cybersecurity, e-health, and fintech collaboration using India's **India Stack**.
- **Enhance Climate Resilience:** Support Seychelles through the **International Solar Alliance (ISA)**, satellite-based climate monitoring, disaster management, renewable energy, and coastal ecosystem conservation.
- **Boost Trade and Connectivity:** Improve maritime and air connectivity, diversify trade and investments, and effectively utilise the **₹1,250 crore Line of Credit** for infrastructure, healthcare, tourism, and logistics.
- **Invest in Capacity Building:** Expand **ITEC scholarships**, diplomatic training, skill development, healthcare cooperation, and people-to-people exchanges to strengthen long-term institutional ties.
- **Deepen Comprehensive Strategic Partnership:** Operationalise **Vision MAHASAGAR** by integrating cooperation in maritime security, defence, digital technology, space, healthcare, Blue Economy, and sustainable development while respecting Seychelles' strategic autonomy.

PRACTICE QUESTION

Q. "Seychelles occupies a pivotal place in India's Indian Ocean strategy." Examine the significance of India–Seychelles relations in advancing India's strategic and developmental interests in the Indian Ocean Region. (15 Marks, 250 Words)

APPROACH

Q. "Seychelles occupies a pivotal place in India's Indian Ocean strategy." Examine the significance of India–Seychelles relations in advancing India's strategic and developmental interests in the Indian Ocean Region. (15 Marks, 250 Words)

- **Introduction** → Start with a current affair on the bilateral relations
- **Body** → Explain the significance; Challenges in the Bilateral Relationship
- **Conclusion** → Provide way forward and conclude

MODEL ANSWER

India and Seychelles share a **five-decade-old strategic partnership** (2026 marks **50 years of diplomatic relations**) rooted in maritime security, development cooperation, and people-to-people ties. During Prime Minister Narendra Modi's 2026 visit, both countries reaffirmed the **MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)** vision and adopted the **SESEL (Sustainability, Economic Growth and Security through Enhanced Linkages)** framework, reflecting the growing strategic importance of Seychelles in India's Indian Ocean policy.

Significance of India–Seychelles Relations for India

1. Strategic Location in the Indian Ocean Region

- Seychelles lies near major **Sea Lines of Communication (SLOCs)** connecting Asia, Africa and Europe.
- Nearly **95% of India's trade (by volume)** and **68% of crude oil imports** transit through the Indian Ocean.
- Acts as India's strategic gateway to the **Western Indian Ocean**.

2. Maritime Security and Defence Cooperation

- Strengthens Maritime Domain Awareness (MDA) through six **Coastal Surveillance Radar Systems (CSRS)**. Joint EEZ surveillance. **Exercise LAMITYE**.
- India has gifted **Dornier aircraft**, patrol vessels and the **Fast Patrol Vessel PS LESPWAR**.

3. Countering China's Expanding Presence

- Supports India's efforts to balance China's growing influence under the **String of Pearls Strategy**.
- Reinforces India's position as the preferred security partner in the Indian Ocean.

4. Operationalising MAHASAGAR

- Promotes maritime security, Blue Economy, digital connectivity and sustainable development.
- The **SESEL Vision** provides a roadmap for future cooperation.

5. Gateway to Africa and the Global South

- Seychelles is a member of the **African Union (AU)**, **Indian Ocean Commission (IOC)**, **IORA** and **Colombo Security Conclave**.
- Enhances India's outreach to **East Africa** and the wider Indo-Pacific.

6. Blue Economy and Climate Partnership

- Seychelles possesses an **EEZ of about 1.3 million sq. km**.
- Cooperation spans sustainable fisheries, marine research, renewable energy and ocean governance.

7. Digital and Development Partnership

- Rollout of **UPI** through NPCI International.

- Cooperation in healthcare, agriculture, space, capacity building and Digital Public Infrastructure (DPI).

Challenges in the Bilateral Relationship

- Growing Chinese strategic and economic influence in the Indian Ocean.
- Domestic opposition to strategic projects such as the **Assumption Island** agreement.
- Maritime threats including piracy, IUU fishing and narcotics trafficking.
- Limited bilateral trade (**about US$73 million in 2024–25**) and weak connectivity.
- Climate vulnerability as Seychelles is a **Small Island Developing State (SIDS)**.
- Limited administrative capacity affecting project implementation.
- Seychelles' policy of balancing relations with multiple powers.

Way Forward

- Strengthen Maritime Domain Awareness through **IFC-IOR**, joint patrols and the **Colombo Security Conclave**.
- Expand cooperation in the **Blue Economy**, marine biotechnology and sustainable fisheries.
- Scale up **Digital Public Infrastructure**, including UPI, fintech and cybersecurity.
- Enhance climate resilience through the **International Solar Alliance**, disaster management and renewable energy.
- Improve maritime and air connectivity while diversifying trade and investment.
- Expand **ITEC**, skill development and people-to-people exchanges.
- Operationalise **MAHASAGAR** through integrated cooperation in maritime security, healthcare, space, digital technology and sustainable development.

As a strategically located **Small Island Developing State (SIDS)**, Seychelles is indispensable to India's vision of a **secure, stable and inclusive Indian Ocean Region**. By deepening cooperation under **MAHASAGAR**, strengthening maritime security, advancing the Blue Economy, and expanding digital and developmental partnerships, India can reinforce its role as the **preferred security and development partner** in the Western Indian Ocean while promoting a free, open and rules-based Indo-Pacific.

GENERAL STUDIES-III

13. ARMED FORCES (SPECIAL POWERS) ACT (AFSPA)

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Security > Border area management > Security forces and Police

REFERENCE NEWS:

- Recently, Union Home Minister Amit Shah stated that, with **improvement in the security situation in the Northeast**, the government aims to **completely withdraw the Armed Forces Special Powers Act (AFSPA)** from almost the entire region **by next year.**
- He made this statement during the signing of a **Memorandum of Understanding (MoU)** among the **Centre, Assam Government and Nagaland Government** for the exploration of **crude oil and natural gas.**

MORE ON NEWS:

- Union Home Minister noted that **AFSPA has already been removed from large parts** of the region in a phased manner. According to him, **nearly 80% of the Northeast is now free from AFSPA.**
- The statement indicates that the Centre sees the Northeast moving **from a conflict-driven phase to a more peaceful and development-oriented phase.**
- He also mentioned that the government has **signed 12 peace accords in recent years**, which have helped reduce unrest and improve stability.
- The withdrawal **will depend on careful security assessment**. The government wants to ensure that **national security is not compromised** while also respecting the aspirations of the people of the Northeast.

> - The Centre-Assam-Nagaland MoU on hydrocarbon exploration is important as some oil and gas resources lie in **areas involving the interests of both Assam and Nagaland.**
> - It supports **India's energy security** by promoting **domestic exploration** amid **global uncertainty and West Asia tensions.**
> - The MoU can help reduce external energy dependence and strengthen self-reliance in the energy sector.
> - This arrangement was presented as **an example of cooperative federalism**, where the Centre and states work together for national and regional development.

WHAT IS AFSPA?

- In simple terms, AFSPA is a law that gives **special powers to armed forces** to maintain public order in areas declared as **"disturbed areas".**
- A **"disturbed area"** may be declared by the Governor of a State, Administrator of a Union Territory or the Central Government under **Section 3 of AFSPA.**
- AFSPA has operated through separate laws for different regions:
  - The Armed Forces (Special Powers) Act, 1958
  - The Armed Forces (Punjab and Chandigarh) Special Powers Act, 1983

- The Armed Forces (Jammu and Kashmir) Special Powers Act, 1990

HISTORY:

Before Independence:

- The AFSPA originated as a **response to the Quit India Movement in 1942**, when Viceroy Linlithgow enacted the Armed Forces (Special Powers) Ordinance, granting extensive powers to the military during internal disturbances.
- Following this, the Indian government issued **similar ordinances in 1947** to address security challenges **during partition** in Bengal, Assam, East Bengal, and the United Provinces.

After Independence:

Parliament enacted separate AFSPA-type laws for different regions:

1. The Armed Forces (Special Powers) Act, 1958

- It was first enacted to deal with the **Naga insurgency in the Assam** region and the then Union Territory of Manipur.
- It was **later extended to other North-Eastern states**.

Current Status:
- AFSPA is currently applicable **only in notified areas of four Northeastern states: Assam, Nagaland, Manipur and Arunachal Pradesh.**
- AFSPA was **completely withdrawn from Tripura in 2015 and Meghalaya in 2018.**
- As per official PIB information, **AFSPA has never been put in force in Mizoram.**

2. The Armed Forces (Punjab and Chandigarh) Special Powers Act, 1983

- In order to enable the central armed forces to operate in the state of Punjab and the union territory of Chandigarh which was battling **the Khalistan movement in the 1980s.**
- **As the Khalistan movement died down AFSPA was withdrawn in 1997.**

3. The Armed Forces (Jammu and Kashmir) Special Powers Act, 1990

- It was enacted in 1990 to tackle the **rise of militancy and insurgency in Jammu and Kashmir.**

Current Status:
- The AFSPA has been applicable to the **erstwhile Jammu and Kashmir state since 1990.**
- However, **Leh and Kargil areas** under the new UT of Ladakh **were never declared as disturbed.**
- **After the bifurcation** of Jammu and Kashmir State, **AFSPA remains in force throughout the UT of Jammu and Kashmir.**
- At present, the **UT of Ladakh is not under AFSPA.**

KEY PROVISIONS OF THE AFSPA ACT:

- **Coverage:**
  - "Armed forces" means **military forces and air forces** operating as land forces, and includes **other armed forces of the Union** so operating.
- **Designating authority:**
  - According to **Section 3 of the Act**, the **whole or any part of a State/UT** can be designated as a "disturbed area" by the **Governor of the State, Administrator of the Union Territory or the Central Government.**
- **Duration:**
  - AFSPA **does not prescribe a clear minimum duration** for a disturbed area notification.
  - However, the Supreme Court has held that such declarations must be **periodically reviewed before the expiry of six months.**
- **Powers under the Act:**
  - **Section 4 gives special powers to armed forces** in disturbed areas, including **use of force after due warning, arrest without warrant, and entry and search without warrant.**
  - It also allows destruction of arms dumps, fortified positions, shelters, training camps or hideouts used by armed groups.
- **Protection from prosecution:**
  - Section 6 provides **that no prosecution, suit or other legal proceeding** can be instituted against any person for **actions done under AFSPA** without previous sanction of the Central Government.

ARGUMENTS IN FAVOUR OF AFSPA:

- **Effective discharge of duty:**
  - AFSPA enables the armed forces to **restore public order in disturbed areas where normal law enforcement may not be sufficient**. It allows **quick intelligence-based operations**, search, arrest and counter-insurgency action.
  - For instance, in **Manipur and Nagaland**, AFSPA has been used to support security operations against **insurgent groups operating in difficult terrain and civilian areas.**
- **Maintaining internal security:**
  - AFSPA is considered necessary in areas affected by insurgency, terrorism, secessionist movements and armed violence. It helps **prevent anti-national and terrorist elements from disturbing public order.**
  - For instance, in Jammu and Kashmir, AFSPA has enabled security forces to act against militancy and cross-border terrorism.
- **Supports peace process:**
  - AFSPA can provide **security cover while political negotiations and peace talks are pursued with insurgent groups.**
  - For instance, in Nagaland, security operations along with negotiations helped create conditions for ceasefire agreements and peace talks.
- **Protection of national integrity:**

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- Many disturbed areas are located in **sensitive border regions** where insurgent activities **may receive foreign support**. AFSPA provides the armed forces with legal backing to protect sovereignty and territorial integrity.
- For instance, areas bordering **Pakistan and Myanmar** have faced security challenges linked to infiltration, insurgency and illegal armed movements.

- **Operational flexibility:**
  - AFSPA gives armed forces **powers to arrest without warrant, search premises and use force** when necessary, allowing them to **respond quickly in conflict situations.**
  - For instance, in counter-insurgency operations, **militants may hide in civilian areas or use guerrilla tactics, requiring swift and flexible action.**
- **Deterrence against insurgents:**
  - The **presence of armed forces with special powers acts as a deterrent against insurgent groups**, reducing their ability to attack security forces, recruit cadres or take control of public spaces.
  - For instance, AFSPA helped security forces **deal with Khalistani militancy** in Punjab, after which the law was withdrawn in 1997.
- **Temporary and area-specific nature:**
  - AFSPA is not applicable across the entire country permanently. It is imposed only in areas officially declared as "disturbed" and can be withdrawn when the security situation improves.
  - For instance, **AFSPA has been withdrawn from Tripura, Meghalaya and several parts** of the Northeast **after improvement in law and order**.
- **Problem lies in misuse, not the law itself:**
  - Supporters argue that the law is needed in exceptional security situations, but its misuse should be **checked through accountability, periodic review and safeguards instead of complete repeal**.

<u>**ARGUMENTS AGAINST AFSPA:**</u>

- **Unbridled powers:**
  - AFSPA gives wide powers to security personnel, including the power to **use force "even to the causing of death"** for maintaining public order. Critics argue that such powers are provided without adequate safeguards for civilians.
  - For instance, **Section 4 allows firing, arrest without warrant, and search without warrant in disturbed areas.**
- **Misuse of powers:**
  - The armed forces have been accused of **fake encounters, arbitrary arrests, torture and sexual violence** in areas where AFSPA is enforced.
  - For instance, the alleged **custodial rape and killing of Thangjam Manorama** by Assam Rifles personnel in Manipur in 2004 became a major symbol of protest against AFSPA.
- **Human rights violations:**
  - Critics argue that AFSPA has led to **serious human rights violations, including extrajudicial killings and custodial abuse**.
  - For instance, the **Malom massacre in Manipur in 2000**, where 10 civilians were allegedly killed, led to **Irom Sharmila's 16-year hunger strike** against AFSPA.

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- **Lack of accountability:**
  - **Section 6 provides legal protection to security personnel**, as prosecution requires prior sanction of the Central Government. This has created concerns of **impunity and delayed justice.**
  - For instance, the Oting incident in Nagaland in 2021, where civilians were killed in a botched army operation, renewed demands for AFSPA repeal.
- **Undermines constitutional rights:**
  - AFSPA is criticised for affecting **basic civil liberties such as freedom of speech, movement, assembly and protection against arbitrary arrest.**
  - **Critics compare it with the Rowlatt Act,** as both allowed action against individuals on the basis of suspicion. It is also seen as **conflicting with Article 22**, which provides safeguards against arbitrary arrest and detention.
- **Alienation of local people:**
  - Prolonged enforcement of AFSPA creates **distrust between civilians and security forces**, leading to resentment and alienation in affected regions.
  - For instance, in Jammu and Kashmir and parts of the Northeast, many local communities view **AFSPA as a symbol of excessive militarisation**.
- **Violation of international human rights standards:**
  - AFSPA has been criticised for being **inconsistent with international human rights principles** under the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights.
  - **India has signed but not ratified the Convention Against Torture**, which further raises concerns about accountability in custodial abuse cases.
- **Undermines state autonomy:**
  - **Section 3** allows the Central Government to declare an area as disturbed, **even without the consent of the concerned state government**. Critics argue that this weakens federalism and state autonomy.
- **Committee observations:**
  - The **Santosh Hegde Committee**, appointed by the Supreme Court, examined alleged fake encounters in Manipur and found serious concerns regarding extrajudicial killings. It also highlighted the **need for periodic review and accountability in AFSPA's implementation.**

COMMITTEES WHICH REVIEWED AFSPA

- **B. P. Jeevan Reddy Committee:**
  - In 2005, the killing of **Thangjam Manorama** by the Assam Rifles in Manipur triggered widespread protests.
  - As a follow-up, the Government set up the B. P. Jeevan Reddy Committee to review AFSPA.
  - After detailed examination, the committee recommended that the **Armed Forces (Special Powers) Act, 1958 should be repealed.**
  - It suggested that the **Unlawful Activities (Prevention) Act could be suitably amended to deal with terrorism.**
- **Santosh Hegde Committee:**
  - In 2013, the Supreme Court appointed the Santosh Hegde Committee after a petition was filed by the Extra Judicial Execution Victim Families Association

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of Manipur.
- The petition sought an inquiry into alleged unlawful encounter killings in Manipur.
- The committee examined six cases and found that **five of the six encounters were "not genuine".**
- It observed that AFSPA gave "sweeping powers" to security personnel without providing **adequate protection to citizens against misuse**.
- It further noted that **greater powers must be accompanied by greater restraint and stricter mechanisms to prevent misuse or abuse**.

- **Justice J. S. Verma Committee:**
  - In 2013, the Justice J. S. Verma Committee, constituted to recommend amendments to criminal law, **also examined AFSPA in the context of women's safety.**
  - It recommended that the continuance of AFSPA in conflict areas should be revisited.
  - It stressed the need to extend **better legal protection to women in conflict areas.**
  - It **recommended bringing sexual violence against women by members of the armed forces or uniformed personnel under ordinary criminal law**.
  - It recommended special protection for women complainants and witnesses in cases of sexual assault by armed forces.
  - It also recommended setting up **special commissioners for women's safety and security** in all conflict areas of the country.

WAY FORWARD:

- **Gradual and security-based withdrawal:** AFSPA should be withdrawn in a phased manner from areas where violence has reduced and normal policing can manage law and order.
- **Periodic review:** Disturbed area notifications should be reviewed regularly, preferably every six months, to prevent indefinite continuation of the law.
- **Strengthening local police:** State police forces must be modernised through better training, intelligence capacity, equipment and community policing.
- **Accountability safeguards:** Allegations of misuse, fake encounters and human rights violations should be investigated in a transparent and time-bound manner.
- **Human rights protection:** Security operations must follow constitutional safeguards, Supreme Court guidelines and human rights standards.
- **Political dialogue:** Peace talks with insurgent groups should be continued to address the root causes of unrest.
- **Developmental approach:** Greater focus is needed on infrastructure, employment, connectivity, education and inclusive development in conflict-affected regions.
- **Cooperative federalism:** The Centre and states must coordinate closely before imposing, extending or withdrawing AFSPA.

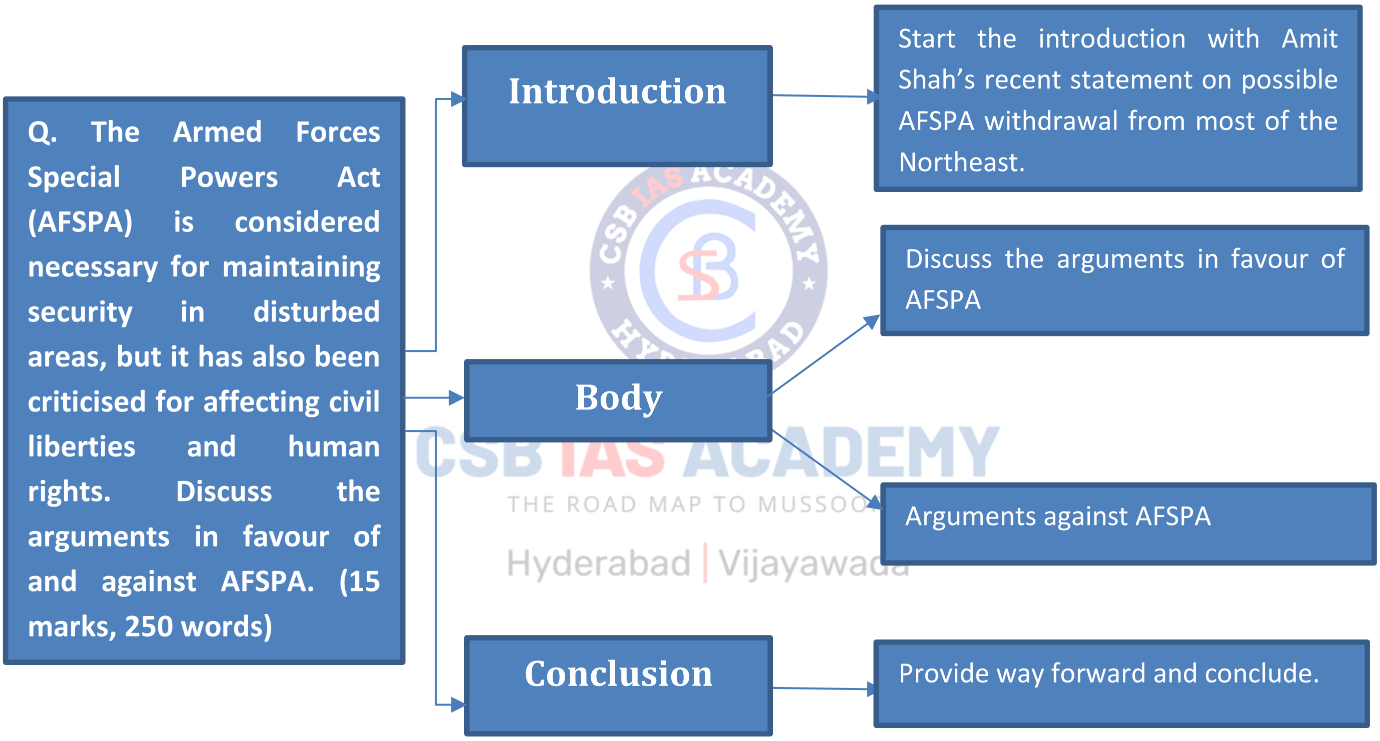
CONCLUSION:

- AFSPA may be necessary in exceptional security situations, but its prolonged use can affect civil liberties and public trust. Therefore, the way forward lies in balancing national security with constitutional rights through phased withdrawal, stronger accountability and peace-oriented development.

PRACTICE QUESTION

Q. The Armed Forces Special Powers Act (AFSPA) is considered necessary for maintaining security in disturbed areas, but it has also been criticised for affecting civil liberties and human rights. Discuss the arguments in favour of and against AFSPA. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, Union Home Minister Amit Shah stated that, with improvement in the security situation in the Northeast, the government aims to withdraw AFSPA from almost the entire region by next year. AFSPA is a special law that gives armed forces extraordinary powers to maintain public order in areas declared as "disturbed areas".

Arguments in favour of AFSPA:

1. Maintaining internal security: AFSPA is considered necessary in areas affected by insurgency, terrorism and secessionist violence. For instance, it has been used in Jammu and Kashmir to counter militancy and cross-border terrorism.

2. Effective discharge of duty: It enables armed forces to restore public order where normal policing may be inadequate due to violence, difficult terrain or militant influence.

3. Operational flexibility: AFSPA allows quick search, arrest and use of force in emergency situations. This helps security forces respond swiftly when militants hide among civilians or use guerrilla tactics.

4. Protection of national integrity: Many disturbed areas are located in sensitive border regions. AFSPA provides legal backing to tackle threats linked to infiltration, foreign support and illegal armed movements.

5. Deterrence against insurgency: The presence of armed forces with special powers can deter insurgent groups from attacking security forces, recruiting cadres or taking control of public spaces.

6. Supports peace process: AFSPA can provide security cover while the government pursues negotiations with insurgent groups. For instance, in Nagaland, security operations and political dialogue together created conditions for ceasefire and peace talks.

7. Temporary and area-specific nature: AFSPA is not imposed across the country permanently. It has been withdrawn from Tripura, Meghalaya and several parts of the Northeast after improvement in security conditions.

Arguments against AFSPA:

1. Unbridled powers: AFSPA gives wide powers to security personnel, including use of force, arrest without warrant and search without warrant, raising concerns about misuse.

2. Human rights violations: The Act has been criticised for alleged fake encounters, torture, custodial abuse and sexual violence. For instance, Thangjam Manorama's killing in Manipur became a major symbol of protest against AFSPA.

3. Lack of accountability: Section 6 requires prior sanction of the Central Government for prosecution, creating concerns of impunity and delayed justice.

4. Undermines constitutional rights: AFSPA affects civil liberties such as freedom of movement, assembly and protection against arbitrary arrest, and is criticised as being inconsistent with Article 22 safeguards.

5. Alienation of local people: Prolonged enforcement creates distrust between civilians and security forces. In the Northeast and Jammu and Kashmir, many communities view AFSPA as a symbol of excessive militarisation.

6. Prolonged enforcement: Although meant for disturbed areas, repeated extensions make AFSPA appear almost permanent in some regions, normalising exceptional security laws.

7. Undermines federalism: The Central Government can declare an area as disturbed even without the consent of the concerned state government, raising concerns over state autonomy.

Way Forward:

- AFSPA should be withdrawn gradually from areas where violence has reduced and normal policing can manage law and order.
- Disturbed area notifications should be reviewed periodically, preferably every six months, as emphasised by judicial and committee observations.
- The **B. P. Jeevan Reddy Committee's recommendation** to repeal AFSPA and suitably amend UAPA should be seriously examined

- **The Santosh Hegde Committee's** call for accountability, restraint and stricter safeguards against misuse should be implemented.
- **The Justice J. S. Verma Committee's recommendation** to bring sexual violence by armed forces under ordinary criminal law must be considered.
- Allegations of fake encounters, custodial abuse and human rights violations should be investigated transparently and in a time-bound manner.
- State police forces must be strengthened through better training, equipment, intelligence capacity and community policing.
- Peace talks, inclusive development, employment generation and better connectivity should address the root causes of insurgency.
- The Centre and states must follow cooperative federalism while imposing, extending or withdrawing AFSPA.

AFSPA may be necessary in exceptional security situations, but prolonged and unchecked use can weaken civil liberties and public trust. Therefore, India must balance national security with constitutional rights through phased withdrawal, accountability reforms and peace-oriented development.

14. RBI ANNUAL REPORT 2025-26

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

The Reserve Bank of India released its **Annual Report for 2025-26**. The RBI Annual Report 2024-25 presents a picture of an economy that remains resilient despite geopolitical tensions, global trade fragmentation, inflationary pressures, and climate-related risks. The report highlights developments in growth, inflation, banking, household savings, digital payments, financial inclusion, and external sector stability.

RBI ANNUAL REPORT 2024-25: KEY HIGHLIGHTS

RBI Transferred a Record Surplus to the Government

- RBI approved a **surplus transfer of ₹2.69 lakh crore** to the Union Government for FY 2024-25. This is the highest-ever dividend/surplus transfer by RBI.
- It was substantially higher than ₹2.11 lakh crore in 2023-24 and ₹87,416 crore in 2022-23
- This provides fiscal space to the government, helps contain fiscal deficit and reduces borrowing requirements.

India Remained the Fastest-Growing Major Economy

- India's growth remained robust despite a weak global economic environment.
- Real GDP growth estimated at **7.3%** in 2025-26, revised upward from an initial projection of 6.5%, supported by domestic consumption, government capital expenditure, and services-sector growth.
- India's growth is increasingly **driven by domestic demand** rather than external demand.
- The growth momentum in 2025-26 was driven by broad-based expansion across key sectors, with **Private Final Consumption expenditure growing by 7.7%, Gross Capital Formation by 6.5%, Services GVA by 8.7%, and Manufacturing GVA** registering a robust **11.5%** growth its strongest performance in recent years.

Inflation Moderated but Food Prices Remain a Concern

- **Headline CPI inflation** softened during the year due to **monetary tightening and easing supply-side pressures. Core inflation remained more stable.**
- However**, food inflation** continued to remain volatile because of **weather-related disruptions and supply constraints.**
- RBI reiterated its commitment to maintaining inflation around the **4% target** under the Flexible Inflation Targeting framework.

Household Financial Savings Improved

- Gross household financial savings increased to **11.2% of Gross National Disposable Income (GNDI)**.

- Net household financial savings improved to **5.1% of GNDI**.
- Higher household savings mean greater financial stability, larger pool of resources for investment and improved capital formation in the economy.

Significant Shift from Savings Accounts to Fixed Deposits

- Savings deposits as a share of total bank deposits declined from **34.6% in March 2022 to 28.7% in March 2026**.
- Term deposits increased from **55.2% to 61.6%** during the same period.
- Savings accounts offer around 2.5–3.5% interest. Fixed deposits offer around 6–8% returns. The report indicates that households are becoming more responsive to interest-rate signals and actively seeking higher returns.
- This **demonstrates effective monetary-policy transmission**: **Repo Rate ↑ → FD Rates ↑ → Household Savings Shift to FDs**
- **Longer-Term Deposits Are Increasing:** The report notes a strong increase in deposits with maturities between 1 and 3 years. The share of such deposits rose from **50.4% to 69.8%**.
- Overall bank deposit growth accelerated to **11.5% in FY26**, compared to **10.6% in FY25**.
- **RBI focusing on deposits** because deposits are the primary source of funding for banks. Over the last few years credit growth remained strong and deposit growth lagged behind. The RBI repeatedly warned about the widening **Credit-Deposit Gap**. The latest data suggests that deposit mobilization is improving.

Banking Sector Remains Strong and Stable

- Gross Non-Performing Assets (GNPA) fell to multi-year lows. Net NPA declined to around **0.5%**.
- **Capital Adequacy Ratios** remained well above regulatory requirements. Bank profitability improved significantly. CRAR increased to approximately **17.7%**.
- Indian banks today are considerably stronger than during the NPA crisis of 2015–18.
- Scheduled Commercial Banks recorded **record net profits exceeding ₹3.7 lakh crore**

Digital Payments Continued to Expand Rapidly

- The report highlights continued growth in digital transactions.
- **Major drivers are** UPI, IMPS, FASTag, mobile banking
- UPI processed over **172 billion transactions** during FY 2024-25. **Transaction value** exceeded **₹246 lakh crore**.
- India continues to operate one of the world's largest digital-payment ecosystems
- Digitalization has reduced transaction costs, improved transparency and strengthened financial inclusion.

Financial Inclusion Reached New Highs

- RBI's Financial Inclusion Index rose to **67.0 in March 2025**, compared to 64.2 in the previous year.
- **Drivers:** Jan Dhan Yojana, aadhaar-based authentication, mobile banking, digital payment systems. The report suggests that access to financial services is steadily expanding across rural and semi-urban India.

External Sector Remained Resilient

- India's foreign exchange reserves remained above **US$ 650 billion** for much of the year.
- India's external debt-to-GDP ratio stood at around **19.1%**, considerably lower than many emerging economies and indicates stronger external-sector resilience.
- Foreign exchange reserves declined on a BoP basis by **USD 30.8 billion** (April-December 2025) as capital flows fell short of CAD.
  - Forex reserves provided a cover of approximately **11 months of merchandise imports** and stood at around **90% of total external debt** at end-December 2025.
  - The external debt-to-GDP ratio remained contained at **20.4%**, and key vulnerability indicators stayed within comfortable ranges.
- The **merchandise trade deficit widened** to **USD 333.2 billion** in 2025-26 from USD 282.5 billion the prior year.
  - Petroleum products, gems & jewellery, and rice saw export contractions.
  - In a major trade shift, China overtook the US as India's largest trading partner in 2025-26.
  - India signed trade agreements with the UK (CETA), Oman (CEPA), and New Zealand (FTA); FTA negotiations with the EU were also concluded in January 2026.
- Net services exports grew **15.3%** during April-December 2025.
  - **Software and business services** accounted for 77.8% of services exports.
  - **Workers' remittances** posted robust growth of **10.1% (y-o-y)** during April-December 2025.
  - The average cost of sending USD 200 to India stood at **5.3%** - below the global average of 6.4% but still above the **SDG target of 3% by 2030.**
- The Current Account Deficit was contained at **USD 30.2 billion (1.1% of GDP)** during April-December 2025.
- **Net FDI** improved to USD 7.7 billion; India ranked **second globally** in greenfield FDI announcements (after the US).

RBI Increased Gold Holdings

- RBI's gold holdings increased to about **880 tonnes**. Share of gold in total foreign exchange reserves continued to rise.
- Diversification away from excessive dependence on dollar assets.

Monetary Policy and Banking Performance:

- The Monetary Policy Committee cut the policy repo rate by a cumulative 100 bps during 2025-26, bringing it to 5.25%.
- The stance was changed from **neutral to accommodative** in April 2025, before **reverting to neutral** in June 2025.
- The Cash Reserve Ratio (CRR) was reduced by 100 bps in a staggered manner (September–November 2025) to 3.0% of Net Demand and Time Liabilities (NDTL), injecting ~Rs 2.5 lakh crore of durable liquidity.
- Bank credit expanded in double digits and was largely broad-based, led by services and retail sectors.
- Weighted average lending rates (WALRs) on fresh and outstanding rupee loans of scheduled commercial banks declined by 95 bps and 78 bps respectively during 2025-26, in response to the cumulative 100 bps repo rate reduction.

KEY RISKS TO INDIAN ECONOMY:

Geopolitical Conflicts and Global Uncertainty Remain the Biggest External Risk

- The report warns that continuing geopolitical tensions in regions such as West Asia, the Russia–Ukraine conflict, and strategic rivalries among major powers could disrupt global trade and investment flows.
- Supply-chain disruptions could increase transportation costs and commodity prices.
- Higher oil prices remain a major concern because India imports nearly **85% of its crude oil requirements**.
- Crude oil prices surged above **$120 per barrel** after the Russia–Ukraine conflict, significantly affecting inflation and external balances globally.

Global Trade Fragmentation Could Hurt India's Export Growth

- The report highlights increasing protectionism, trade restrictions, sanctions, and geopolitical realignments. Global trade is becoming fragmented into competing blocs.
- Slower merchandise export growth. Reduced demand from advanced economies. Disruptions in global value chains.
- Merchandise exports have experienced volatility due to weakening demand from Europe and parts of East Asia.

Food Inflation Remains the Most Persistent Domestic Risk

- While headline inflation moderated, food inflation remains vulnerable to weather shocks and supply disruptions.
- Food items continue to contribute disproportionately to inflation volatility. Food constitutes nearly **46% of India's CPI basket**.

Climate Change Has Emerged as a Major Macroeconomic Risk

- The report repeatedly identifies climate change as a growing threat to economic and financial stability.
- **Risks identified:** Heat waves, Droughts, Floods, Cyclones, Agricultural disruptions.
- Extreme weather events in recent years have disrupted food supply chains and increased inflationary pressures. Climate risk is no longer merely an environmental issue but a **financial stability risk**.

Dependence on Monsoon Continues to Create Vulnerability

- Despite structural transformation, agriculture remains highly dependent on rainfall.
- Strong El Niño years such as 2002 and 2009 were associated with significant monsoon deficiencies and agricultural stress.
- Global agencies have warned about possible El Niño conditions affecting rainfall patterns in the coming years.

Financial Market Volatility Could Affect Capital Flows

- Global monetary tightening and geopolitical uncertainty can trigger volatility in capital flows.

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- Exchange-rate fluctuations, equity market corrections, foreign portfolio investment (FPI) outflows.
- US Federal Reserve policy decisions continue to influence capital flows into emerging markets, including India.

Labour Market and Employment Challenges Persist

- The report recognizes the importance of generating productive employment for India's large and growing workforce.
- Quality of employment, skill gaps, labour-force participation and informal employment. India's demographic dividend can become a demographic challenge if sufficient jobs are not created.

Cybersecurity and Digital Financial Risks Are Increasing

- As India's financial system becomes increasingly digitalized, new vulnerabilities emerge.
- Cyber-attacks, data breaches, digital fraud and operational disruptions are the risks involved

INDIA'S ECONOMIC PROSPECTS AND STRATEGIC INITIATIVES FOR 2026–27:

Economic Prospects for 2026-27

- **India is Expected to Remain the Fastest-Growing Major Economy:** RBI projects **real GDP growth at 6.5% in FY 2025-26**, while several agencies expect growth around **6.3–6.7% during 2026-27**. India continues to outperform most advanced economies, US: ~1.5–2%, Euro Area: ~1%, China: ~4–4.5%
- India is expected to contribute nearly **15–17% of global growth** over the next few years.
- **Growth Drivers:** Private consumption, government infrastructure spending, services exports, manufacturing expansion, digital economy.
- **Public Investment:** Union Government's capital expenditure has increased from **₹4.1 lakh crore (2020-21)** to over **₹11 lakh crore in recent budgets**.
- **Private Investment:** Capacity utilization in manufacturing has remained around **74–76%**, encouraging fresh investment. Corporate balance sheets are significantly healthier than during the previous decade.
  - Semiconductor investments in Gujarat. Electronics manufacturing expansion under PLI schemes. Rapid growth of renewable energy investments.
- CPI inflation moderated to around **4.6% in FY 2024-25**. RBI continues to target inflation at **4% ± 2%**.

Strategic Initiatives Likely to Drive Growth in 2026-27

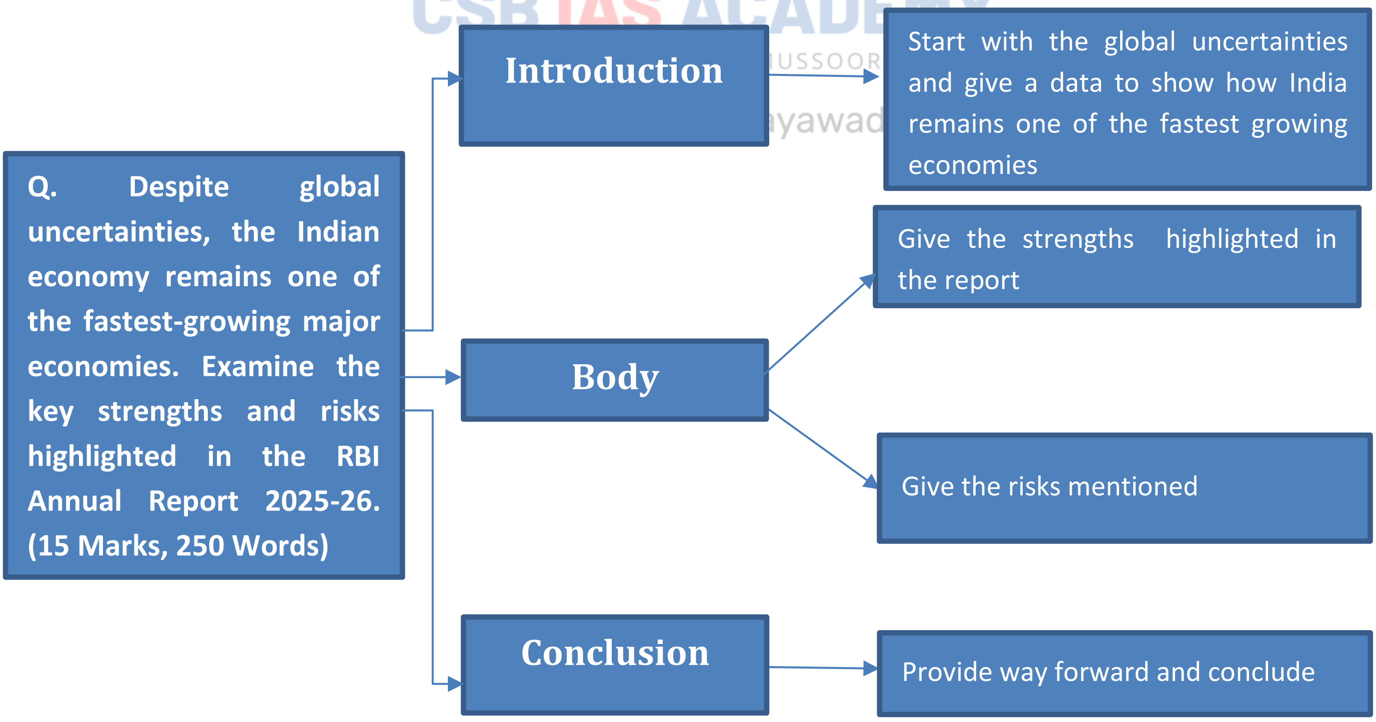
- **Infrastructure-Led Growth Strategy:** India continues to pursue infrastructure as the primary growth engine. **Key Programmes:**
  - PM Gati Shakti, National Infrastructure Pipeline (NIP), Bharatmala, Sagarmala, Dedicated Freight Corridors.
  - National Infrastructure Pipeline envisages investments exceeding **₹100 lakh crore** over the medium term.
- **Manufacturing Push Through PLI Schemes:** More than **14 sectors** including electronics, pharmaceuticals, telecom, solar modules, automobiles.
  - Mobile phone exports crossed **₹1.5 lakh crore**.
  - India has emerged as one of the world's largest smartphone manufacturing hubs.

- **Semiconductor Mission:** India Semiconductor Mission has committed incentives worth approximately **₹76,000 crore**. Semiconductor fabrication and packaging units in Gujarat and Assam. Global partnerships with firms from Taiwan, Japan, and the US.
- **Green Growth and Energy Transition:** India aims for **500 GW of non-fossil fuel capacity by 2030**. **Green Hydrogen Mission** outlay of approximately **₹19,744 crore**.
- **Financial Sector Deepening:** Expansion of corporate bond markets, digital lending frameworks, financial inclusion and insurance penetration.
- **Export Diversification Strategy: Focus areas** Electronics, engineering goods, pharmaceuticals, services exports and defence exports. Defence exports have crossed **₹23,000 crore**, compared to less than ₹1,000 crore a decade ago.
- **Urbanisation and Logistics Reforms:** India's urban population may exceed **600 million by 2030**. Strategic initiatives include Smart Cities Mission, Metro Rail expansion, Transit-oriented development and logistics efficiency improvements.

PRACTICE QUESTION

Q. Despite global uncertainties, the Indian economy remains one of the fastest-growing major economies. Examine the key strengths and risks highlighted in the RBI Annual Report 2025-26. (15 Marks, 250 Words)

APPROACH



MODEL ANSWER

At a time when global growth is constrained by geopolitical tensions in West Asia and Europe, supply-chain disruptions, trade protectionism, and financial market volatility, India has demonstrated remarkable macroeconomic resilience. The RBI Annual Report 2025-26 notes that India's economy grew by **7.3%**, making it the fastest-growing major economy globally, supported by private consumption growth of **7.7%**, manufacturing growth of **11.5%**, and strong services-sector performance.

Key Strengths of the Indian Economy

- India remained the **fastest-growing major economy**, with real GDP growth estimated at **7.3% in 2025-26**, supported by private consumption (7.7%), manufacturing GVA growth (11.5%) and services sector expansion (8.7%).
- Household financial savings improved, with **gross financial savings rising to 11.2% of GNDI** and net financial savings reaching **5.1% of GNDI**, strengthening capital formation.
- The banking sector exhibited remarkable resilience, with **GNPA falling to multi-year lows**, **Net NPA around 0.5%**, **CRAR at 17.7%**, and bank profits exceeding **₹3.7 lakh crore**.
- India's digital economy continued to expand rapidly, with **UPI processing over 172 billion transactions worth ₹246 lakh crore** during FY 2024-25.
- The external sector remained comfortable with **forex reserves above US$650 billion**, covering nearly **11 months of imports**, while the **Current Account Deficit remained contained at 1.1% of GDP**.

Key Risks and Vulnerabilities

- Geopolitical conflicts and trade fragmentation threaten exports, supply chains and energy security, particularly as India imports nearly **85% of its crude oil requirements**.
- Food inflation remains a persistent concern because food accounts for nearly **46% of the CPI basket**, making inflation vulnerable to weather shocks.
- Climate change has emerged as a macroeconomic risk through heatwaves, floods, droughts and agricultural disruptions.
- Dependence on monsoon continues to expose agriculture and rural demand to climatic uncertainties, particularly during potential El Niño years.
- Labour market challenges, skill gaps, cybersecurity threats and financial market volatility could constrain long-term growth.

Way Forward

- Accelerate infrastructure development through PM Gati Shakti and the National Infrastructure Pipeline.
- Deepen manufacturing through PLI schemes and the Semiconductor Mission.
- Strengthen climate-resilient agriculture and supply chains.
- Expand skilling initiatives and formal employment opportunities.
- Enhance cybersecurity architecture and digital financial safeguards.

India's economic fundamentals remain robust, supported by strong growth, sound banks, rising savings and digital transformation. However, sustaining high growth will require balancing macroeconomic stability with structural reforms that address climate risks, employment generation, inflation management and global economic uncertainties.

15. LOGISTICS SECTOR

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Industry and infrastructure > Infrastructure & Investment models

REFERENCE NEWS:

- Recently, India launched the **Logistics Port Performance Index (LPPI) for FY 2024–25** under the **Sagar Aankalan framework** to benchmark port performance and improve maritime logistics efficiency. The index evaluates ports on indicators such as turnaround time, berth idle time, container dwell time and cargo handled, supporting India's broader logistics reforms under **PM Gati Shakti and Maritime Amrit Kaal Vision 2047.**

MORE ON NEWS:

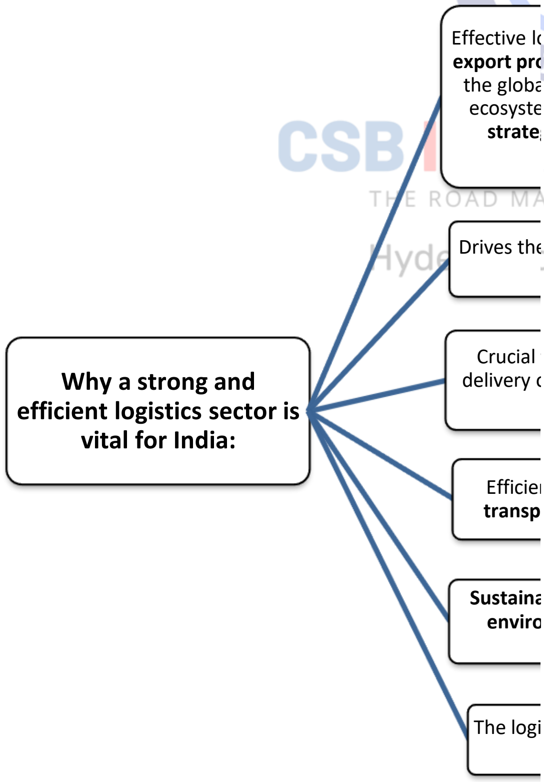
- **PM Gati Shakti** is India's integrated infrastructure planning framework aimed at improving multimodal connectivity and reducing logistics bottlenecks.
- **Maritime Amrit Kaal Vision 2047** is India's long-term maritime roadmap to make ports, shipping and inland waterways globally competitive, while the **Sagar Aankalan framework** benchmarks Indian ports through indicators like turnaround time, cargo handling, berth idle time and container dwell time.

WHAT IS LOGISTICS?

- Logistics encompasses **planning, coordinating, storing, and moving resources**—people, raw materials, inventory, equipment, etc.—from one location to another, from the production points to consumption, distribution, or other production points.

LOGISTICS SECTOR IN INDIA:

- India's logistics market is estimated to be **USD 435.43 billion in 2023 and is expected to reach USD 650.52 billion by 2028**, growing at a Compound Annual Growth Rate (CAGR) of 8.36%.
- India improved its ranking in **the World Bank's Logistics Performance Index**, **climbing six places to rank 38** out of 139 countries in 2023.
- A National Council of Applied Economic Research (NCAER) report (December 2023) highlighted a **decline in logistics costs by 0.8-0.9 percentage points of GDP** between FY14 and FY22.
- As per the **Economic Survey 2023-24**, the Goods and Services Tax (GST) has significantly reduced logistics costs by cutting truck waiting times at state borders, **lowering travel time by 30%,** and increasing average truck coverage from **225 km to 300-325 km daily.**



Source: IBEF and PIB

CHALLENGES ASSOCIATED WITH INDIA'S LOGISTICS SECTOR:

- **Heavily dependent on roads:**
  - India's logistics sector predominantly depends on road transport, holding a **65% share compared to a global average of 25%.** Railways and waterways make up roughly 35%.
  - Road transportation is **more expensive**, costing Rs. 2.2 per tonne per kilometre, in contrast to Rs. 1.4 for rail and Rs. 0.7 for waterways.
- **Port Sector Challenges:**
  - Indian ports experience **prolonged ship turnaround times**, averaging **about 62 hours in 2020-21**, significantly higher than Japan's approximate 8 hours.
  - India's port inefficiencies arise from **congested berths, slow cargo handling, and lengthy customs processes,** impacting logistics. Coastal shipping is further limited by inadequate port facilities and depth, restricting large vessel operations.
- **High fuel prices**:
  - High fuel prices significantly burden the logistics sector, as they lead to **increased transportation costs** and additional freight surcharges, ultimately impacting the sector's profitability.
- **Regulatory and Bureaucratic Hurdles:**
  - The introduction of digital platforms like the e-way bill system has streamlined some administrative procedures and reduced paperwork. However, the sector still grapples **with complex and varied regulations across states, leading to delays and increased compliance costs.**
- **Fragmented Market Structure:**
  - India's logistics market remains highly fragmented **with numerous small players**, leading to service quality inconsistencies and inefficiencies.
- **Warehousing Challenges:**

   - The state of warehousing in India's logistics sector is problematic due to **inadequate facilities and limited location choices**. Also, a significant portion of the **larger storage facilities is owned by the government** and primarily used **for storing food grains.**
- **Technological Gaps:**
   - Despite advancements in AI, IoT, and automation, and the growing utilization of robotics and drone technology, a significant part of the sector still relies on traditional methods.

- **Structural issues with infrastructure development:**
   - **Land acquisition, litigation issues, alienation of local communities, environmental clearances** etc are some major hurdles that delays infrastructure development in the country.
- **Huge capital expenditure requirements:**
   - The creation of a robust infrastructure for an efficient logistic ecosystem requires **huge capital expenditure** with **relatively longer gestation periods**.
- **Slow pace of infrastructure creation in India:**
   - For ex: Only 30-35 km of roads are constructed in India per day as compared to 45km in China
- **Skilled Manpower Shortage:**
   - The sector faces a shortage of trained and skilled manpower, which affects service quality and limits the adoption of advanced technologies.
- **Environmental Concerns:**
   - Sustainable logistics practices are in nascent stages in India, and the sector faces challenges in reducing its **carbon footprint and adopting greener practices.**
- **Supply Chain Disruptions:**
   - Global events, like the **COVID-19 pandemic**, have highlighted vulnerabilities in the supply chain network, underscoring the need for **more resilient and flexible logistics systems.**

GOVERNMENT INITIATIVES:

- **National Logistics Policy (NLP):**
- The National Logistics Policy was **launched in September 2022.**
- National Logistics Policy is an overarching **interdisciplinary, cross-sectoral, multi-jurisdictional and comprehensive policy framework** for the logistics sector. The policy complements the **PM GatiShakti National Master Plan**.
- **Vision:**
   - The **vision of the policy** is to develop a **technologically enabled, integrated, cost-efficient, resilient, sustainable and trusted logistics ecosystem** in the country for accelerated and inclusive growth.
- **Targets:**
   - **Reduce the cost of logistics** from **14-18 percent of GDP** to global best practices of **8 percent by 2030.**
   - **Improve** the country's **Logistics Performance Index (LPI) ranking** to be among **top 25 countries by 2030.**

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- Create **data-driven decision support systems (DSS)** to enable an efficient logistics ecosystem.
- To ensure that **logistical issues are minimised**, exports grow manifold, and small industries and the people working in them benefit significantly.

- **Key building blocks of the policy:**
  - **Unified Logistics Interface Platform (ULIP):** to integrate various logistics-related digital services into a single portal, aiming to enhance efficiency, transparency, and reduce logistics costs and time.
  - **Ease of Logistics Services (E-Logs)**
  - **The Comprehensive Logistics Action Plan**
- **Logistics Data Bank (LDB):** an application developed to track and trace EXIM (export-import) cargo, providing greater predictability, transparency, and reliability in the logistics sector, thereby reducing costs and minimizing supply chain wastages.
- **LEAPS:** LEAPS is a flagship **initiative of the Department for Promotion of Industry and Internal Trade (DPIIT)** under the Ministry of Commerce and Industry, aims to benchmark logistics excellence, strengthen India's competitiveness, and align with the vision of the **National Logistics Policy (NLP) and PM GatiShakti.**
  - LEAPS 2025 has been conceptualized to **acknowledge and celebrate best practices, innovation, and leadership within India's logistics industry.** It covers a wide spectrum of logistics players — including **air, road, sea, and rail freight operators; warehousing; multimodal transporters; MSMEs; Startups; and Academia.**
- **Sagarmala**
- **Bharatmala**
- **Dedicated Freight Corridors**
- **e-way bills**
- **FASTag**
- **Paperless EXIM trade process through e-sanchit**
- **Faceless assessment for customs**

WAY FORWARD:

- **Promote Multimodal Logistics to Reduce Cost**:
  - Adopt a balanced transport mix by shifting freight from roads to **rail (Dedicated Freight Corridors), coastal shipping, and inland waterways (Jal Marg Vikas Project)**. This will reduce logistics costs from **currently ~8–10% of GDP toward the NLP target of 8% by 2030**.

- **Strengthen First Mile–Last Mile Connectivity**:
  - Accelerate **PM GatiShakti-driven infrastructure planning** for seamless port–road–rail connectivity. Expand **Multimodal Logistics Parks (MMLPs)** and **Freight Village Models** near industrial corridors.
- **Adopt End-to-End Digital Logistics Systems**:

  - Integrate **Unified Logistics Interface Platform (ULIP)** with private logistics firms to enable **real-time cargo visibility, predictive analytics, and AI-based route optimization**. Enforce **E-logistics standards** for interoperability.
- **Improve Rail Freight Efficiency**:
  - Increase freight train speeds using **Automatic Signalling, ETCS Level-2** systems and prioritise **Dedicated Freight Corridors Phase-II**. Rationalize rail tariffs to compete with road freight. Introduce **Roll-on-Roll-off (RoRo) trains** on more routes.
- **Reform Road Logistics Efficiency**:
  - Implement **National Highway Logistics Management System** for reducing transportation bottlenecks. Expand **Logistics Park Clusters** near major manufacturing regions. Promote **driver welfare schemes**, trucking credit access and enforce **National Logistics Workforce Policy** to solve driver shortages.
- **Warehousing Modernisation & Cold Chain Expansion**:
  - Promote **Grade A warehouses**, automated material handling, and **plug-and-play logistics zones**. Incentivize **cold chain expansion for agriculture, pharma and fisheries** via Viability Gap Funding under PM-PRANAM and Operation Greens.
- **Encourage Green Logistics**:
  - Promote LNG/CNG truck fleets, **battery-operated commercial vehicles**, **solar-powered warehouses**, and **carbon accounting standards**. Integrate **Green Logistics Guidelines** under LEAPS 2025 and link incentives to ESG performance.
- **Skilling & Employment in Logistics**:
  - Launch **National Logistics Skill Mission** with ITIs, MSMEs, and NSDC to upskill 1 million youth in warehouse automation, robotic picking, drone delivery systems, freight planning and customs compliance.
- **Logistics Governance Reform**:
  - Provide **single-window logistics approvals** via standardised state logistics policies. Encourage **Competitive Federalism** by ranking states through the **Logistics Ease Across Different States (LEADS) Index** and **LEAPS 2025 Awards**.

CONCLUSION:

- India's logistics sector is central to reducing trade costs, improving export competitiveness and enabling faster industrial growth. With reforms such as **PM Gati Shakti, National Logistics Policy, LPPI, LEAPS, ULIP, Sagarmala and Dedicated Freight Corridors**, India is moving towards an integrated, digital, multimodal and sustainable logistics ecosystem. However, achieving global standards will require faster infrastructure creation, greater rail-waterway share, modern warehousing, skilled manpower and green logistics adoption.

PRACTICE QUESTION

Q. "India's logistics sector is critical for reducing trade costs, improving export competitiveness and supporting industrial growth". Discuss the significance of the logistics sector in India and examine the major challenges associated with it. (10 marks, 150 words)

APPROACH

Q. "India's logistics sector is critical for reducing trade costs, improving export competitiveness and supporting industrial growth". Discuss the significance of the logistics sector in India and examine the major challenges associated with it. (10 marks, 150 words)

- **Introduction** → Start with a data-based introduction mentioning India's logistics market size, LPI rank, and recent LPPI launch.
- **Body** → Discuss the significance of logistics sector; Major challenges
- **Conclusion** → Provide way forward and conclude.

MODEL ANSWER

India's logistics sector is a key enabler of trade, manufacturing and export competitiveness. The sector was valued at **USD 435.43 billion in 2023** and is expected to reach **USD 650.52 billion by 2028**, while India improved its **World Bank Logistics Performance Index rank to 38 out of 139 countries in 2023**. Recently, India launched the **Logistics Port Performance Index under the Sagar Aankalan framework** to benchmark port efficiency, showing the growing focus on logistics reforms.

Significance of Logistics Sector:

1. **Reduces logistics cost:** Efficient logistics lowers transport, storage and inventory costs. NCAER noted that India's logistics cost declined by **0.8–0.9 percentage points of GDP between FY14 and FY22**.

2. **Improves export competitiveness:** Better port efficiency, cargo handling and paperless EXIM processes reduce delays and improve India's reliability in global trade.

3. **Supports industrial growth:** Manufacturing, e-commerce, agriculture, pharma and MSMEs depend on timely movement of raw materials and finished goods.

4. **Boosts transport efficiency:** GST reduced truck waiting time at state borders, lowered travel time by **30%**, and increased average truck coverage from **225 km to 300–325 km per day**.

5. **Promotes multimodal connectivity:** PM Gati Shakti, Dedicated Freight Corridors, Sagarmala and Bharatmala improve road–rail–port integration.

Challenges:

1. **Road dependence:** Around **65% of freight depends on roads**, compared to the global average of around **25%**, making logistics costlier and fuel-intensive.

2. **Higher transport cost:** Road transport costs around **₹2.2 per tonne-km**, compared to **₹1.4 for rail** and **₹0.7 for waterways**.

3. **Port inefficiencies:** Indian ports had ship turnaround time of around **62 hours in 2020–21**, much higher than Japan's nearly **8 hours**, due to congestion, slow cargo handling and customs delays.

4. **Fragmented market:** Numerous small logistics players lead to inconsistent service quality, weak standardisation and limited technology adoption.

5. **Warehousing gaps:** Inadequate Grade-A warehouses and cold chains affect agriculture, pharma and perishable goods movement.

6. **Skilling and technology gaps:** Shortage of trained manpower limits adoption of AI, IoT, automation, robotics and drone-based logistics.

Way Forward:

- Shift freight from roads to rail, coastal shipping and inland waterways.
- Expand Dedicated Freight Corridors, Multimodal Logistics Parks and Freight Villages.
- Integrate ULIP with private logistics firms for real-time cargo visibility.
- Modernise warehousing, cold chains and automated storage systems.
- Promote green logistics through EVs, LNG/CNG trucks and solar-powered warehouses.
- Develop skilled manpower through logistics-focused training in ITIs, MSMEs and NSDC-linked institutions.

India's logistics sector can become a major driver of lower trade costs, export growth and industrial competitiveness. Initiatives such as **PM Gati Shakti, National Logistics Policy, ULIP, LEAPS, Sagarmala, Bharatmala, Dedicated Freight Corridors, FASTag, e-way bills and paperless customs reforms** provide a strong foundation, but success will depend on multimodal integration, faster infrastructure creation, digital adoption and green logistics.

16. ENVIRONMENTAL TOLL OF AI DATA CENTRES

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Technology

REFERENCE NEWS:

- Recently, **India's push to attract global AI data centre investments** has raised environmental concerns, especially after large projects such as the **Google-Adani data centre in Visakhapatnam** were criticised for **high water and power demand** in an ecologically vulnerable coastal region.

MORE ON NEWS:

- The **Google-Adani data centre project in Visakhapatnam** has drawn criticism as it is located in an **ecologically vulnerable coastal region**.
- The project is expected to **require large amounts of power and water, putting pressure on local resources.**
- The Andhra Pradesh government has reportedly offered major concessions, including subsidies on power and water
- Globally, **communities in the US, Europe and Southeast Asia** are **also resisting AI data centres due to their environmental impact**
- The issue highlights the need to balance **digital growth with environmental sustainability**.

WHAT IS AN AI DATA CENTRE?

- **AI data centres** are large digital infrastructure facilities that house powerful servers, chips and cooling systems used to **train, deploy and run Artificial Intelligence models**.
- They support activities like **machine learning, generative AI, large language models, cloud AI services and high-speed data processing**.
- In simple words, an AI data centre is like a **giant AI supercomputer warehouse**.

HOW IS IT DIFFERENT FROM NORMAL DATA CENTRES?

Basis	**Normal Data Centre**	**AI Data Centre**
Main function	Stores, manages and serves data	Trains and runs AI models
Workload	Websites, apps, cloud storage, emails	Large AI models, machine learning, generative AI
Power demand	High	Much higher
Water use	Moderate to high	Very high due to advanced cooling

Hardware	Regular servers	Powerful GPUs/AI chips
Heat generation	Comparatively lower	Very high
Environmental impact	Significant	Much more severe
Employment	Limited	Also limited after construction

WHY INDIA SUPPORTS AI DATA CENTRES?

- **To build India as a global digital hub:**
  - India wants to attract global data, cloud and AI companies.
  - Data centres are needed for storing, processing and transferring huge volumes of digital information.
  - With rising digital payments, e-governance, online education, health-tech and cloud services, India needs strong domestic digital infrastructure.
- **To support AI development:**
  - AI models require huge computing power.
  - AI data centres provide the servers, GPUs and cooling systems needed to train and run AI models.
  - Without such infrastructure, India may remain dependent on foreign cloud and AI platforms.
- **To reduce foreign dependence:**
  - Domestic data centres can help India build **sovereign AI capacity**.
  - They reduce dependence on foreign-controlled servers and cloud infrastructure.
  - This is important for sectors like defence, health, finance, agriculture and governance.
- **To attract investment:**
  - AI data centres bring large investments from companies such as Google, Amazon, Meta, Reliance, Adani and other technology firms.
  - Recent reports show major private investments and partnerships in India's AI/data centre ecosystem, including Meta-Reliance and Adani-Jabil collaborations.
- **To support Digital India and cloud economy:**
  - India's digital economy is expanding rapidly.
  - According to PIB, India's current cloud data centre capacity is around **1,280 MW** and is expected to grow **4–5 times by 2030** due to digitalisation, cloud adoption and AI use.
- **To create high-value technology ecosystem:**
  - Even if data centres do not create mass employment after construction, they can support a wider technology ecosystem by promoting semiconductor development, electronics manufacturing, cloud services, cybersecurity, AI startups and advanced computing.
- **To strengthen data localisation and security:**
  - Keeping data within India can help in better regulation, privacy protection and national security.
  - Domestic data centres can support sensitive sectors such as banking, public infrastructure, defence and governance.

ENVIRONMENTAL TOLL OF AI DATA CENTRES:

- **Huge Electricity Demand:**
  - AI data centres require continuous electricity to run high-power servers, GPUs and cooling systems.
  - **For instance**, the International Energy Agency projects that global data centre electricity consumption may reach around **945 TWh by 2030**, **more than Japan's current electricity use.**
  - The proposed Google-Adani data centre in Visakhapatnam is described as a **2 GW hyperscale facility**, showing the scale of power demand such projects can create.
- **Higher Carbon Emissions:**
  - If AI data centres depend on fossil-fuel-based grids, they can increase carbon emissions.
  - **For instance**, **India still depends heavily on coal for electricity**. Therefore, rapid data centre expansion without renewable energy and storage can add to carbon pressure.
- **Heavy Water Consumption:**
  - AI servers **generate intense heat and need large cooling systems**. Many cooling technologies consume huge quantities of water.
  - **For instance**, according to the **Environmental and Energy Study Institute**, large data centres can consume up **to 5 million gallons of water per day**, equal to the water use of a **town of 10,000–50,000 people**.
  - Also, one study estimated that global AI demand could lead to **4.2–6.6 billion cubic metres of water withdrawal by 2027**. (Source: o A 2023 study titled "Making AI Less Thirsty")
- **Pressure on Local Communities:**
  - Data centres can divert water, electricity and land away from local communities.
  - **For instance**, in Visakhapatnam, concerns have been raised that large AI data centres may put pressure on local water supply, electricity grids and coastal resources.
  - This creates **an environmental justice issue**, where private companies receive subsidised resources while **ordinary citizens may face scarcity or higher costs.**
- **Land Acquisition and Ecological Damage:**
  - Hyperscale data centres require vast land parcels.
  - **For instance**, the Google-Adani project in Visakhapatnam is expected to receive around **480 acres** of land in a coastal region.
  - Such land conversion can affect natural drainage, groundwater recharge, biodiversity and disaster resilience.
- **Weak Environmental Scrutiny:**
  - Large AI data centres may escape strict environmental assessment.
  - Concerns have been raised over concessions such as **power subsidy, water subsidy, land discount and waiver of environmental impact assessment**.
  - This weakens accountability over water use, power demand, land-use change and ecological damage.
- **Noise, Heat and Local Pollution:**
  - AI data centres operate 24×7 and require cooling units, transformers and backup generators.
  - They can cause:
    - Noise pollution

- Light pollution
- Local heat generation
- Diesel emissions from backup systems
- Construction-related disturbance

- **E-waste and Hardware Burden:**
  - AI data centres depend on GPUs, servers, batteries, cables and cooling systems.
  - Frequent hardware upgrades can increase **e-waste, mining pressure and embodied carbon emissions**.
- **Limited Jobs Despite High Resource Use:**
  - AI data centres are often **promoted as job creators**, but **once operational, they employ relatively few people.**
  - They may create temporary construction jobs, but long-term employment is usually limited to technicians, engineers and security staff. Thus, the ecological cost may be high while the employment benefit remains limited.

WAY FORWARD:

- Mandatory environmental impact assessment:
  - Large AI data centres must be brought under strict EIA norms, with assessment of water use, power demand, carbon emissions, land-use change and local ecological impact.
- Renewable energy-based operations:
  - Data centres should be required to use additional renewable energy, battery storage and green power purchase agreements to reduce dependence on fossil-fuel-based grids.
- Water-efficient cooling:
  - Companies must adopt water recycling, air cooling, liquid immersion cooling and wastewater-based cooling to reduce pressure on freshwater resources.
- Location-based regulation:
  - Data centres should not be allowed in water-stressed areas, ecologically fragile coastal zones, wetlands, flood-prone regions or fertile agricultural lands.
- Transparent resource pricing:
  - Subsidies on land, water and electricity should be rationalised so that public resources are not diverted cheaply to highly profitable private companies.
- Local community safeguards:
  - Public consultation, social impact assessment and grievance redressal mechanisms must be made compulsory before approving large data centre projects.
- Circular economy approach:
  - Proper e-waste management, server recycling, chip reuse and sustainable hardware procurement should be promoted to reduce the material footprint.
- Green data centre standards:
  - India should frame binding standards on power usage effectiveness, water usage effectiveness, heat recovery, emissions reporting and disaster resilience.

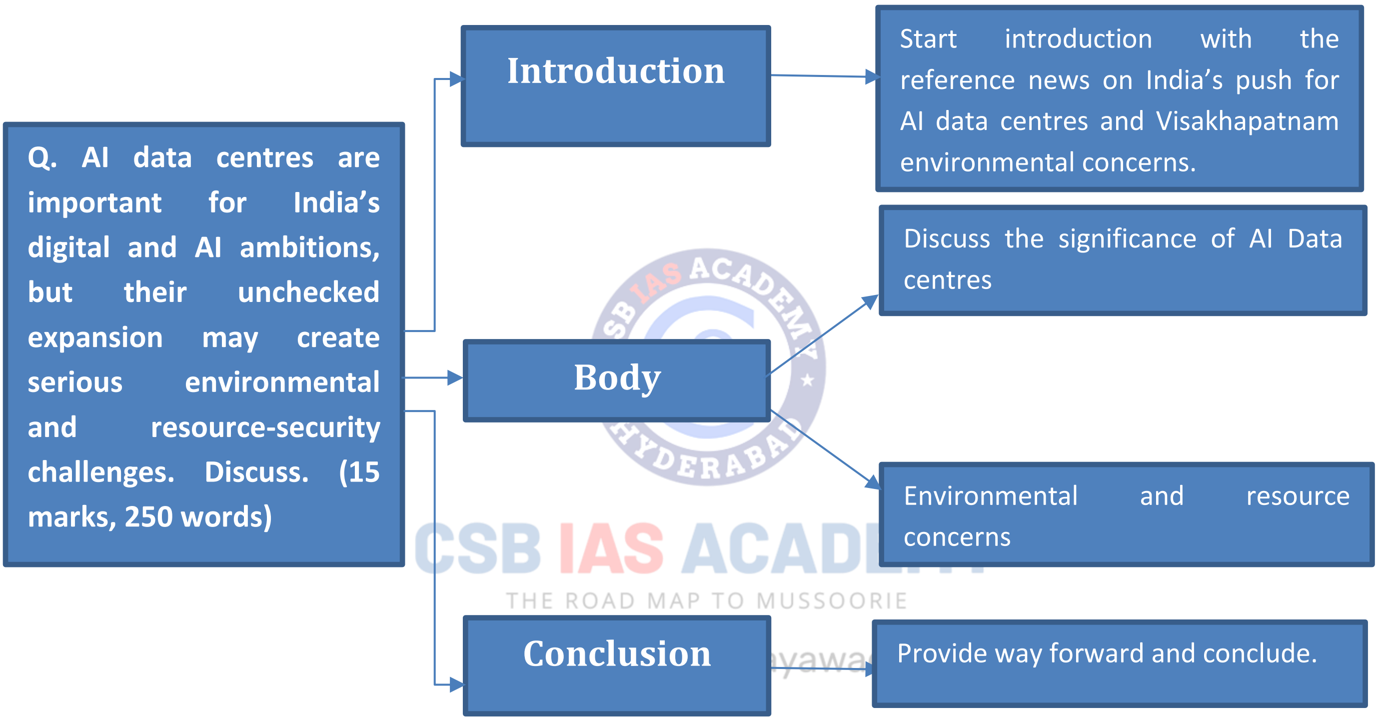
CONCLUSION:

- AI data centres are **essential for India's digital and AI ambitions**, but their growth **cannot come at the cost of water security, energy justice and ecological stability**. India must follow a green, regulated and locally accountable model of AI infrastructure to balance digital progress with environmental sustainability.

PRACTICE QUESTION

Q. AI data centres are important for India's digital and AI ambitions, but their unchecked expansion may create serious environmental and resource-security challenges. Discuss. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, India's push to attract global AI data centre investments has raised environmental concerns, especially after the Google-Adani data centre project in Visakhapatnam was criticised for high water and power demand in an ecologically vulnerable coastal region. AI data centres are essential for India's digital future, but their rapid expansion needs strict regulation.

Significance of AI Data Centres:

1. Digital infrastructure: They provide the backbone for cloud services, digital payments, e-governance, online education and health-tech.

2. AI development: They provide high-power servers, GPUs and cooling systems needed to train and run large AI models.

3. Digital sovereignty: Domestic data centres reduce dependence on foreign cloud platforms and support India's sovereign AI capacity.

4. Data localisation and security: They help store sensitive data related to banking, defence, health and governance within India.

5. Investment promotion: They attract large investments from global and Indian technology companies such as Google, Amazon, Meta, Reliance and Adani.

6. Support to technology ecosystem: They promote related sectors such as semiconductors, electronics manufacturing, cybersecurity, cloud services, AI startups and advanced computing.

7. Economic competitiveness: Strong AI infrastructure can help India compete in the global digital economy and support Industry 4.0.

Environmental and Resource Concerns:

1. High electricity demand: AI data centres require continuous electricity. For instance, IEA projects global data centre electricity use to reach around 945 TWh by 2030.

2. Carbon emissions: If powered by fossil-fuel-based grids, they can increase emissions, especially in coal-dependent countries like India.

3. Heavy water consumption: Cooling systems consume huge quantities of water. For instance, large data centres can consume up to 5 million gallons of water per day.

4. Pressure on local resources: They can divert water and electricity away from local communities, creating resource insecurity.

5. Land acquisition: Hyperscale facilities require vast land. For instance, the Visakhapatnam project is expected to receive around 480 acres in a coastal region.

6. Ecological damage: Land conversion in coastal or fragile areas can affect drainage, groundwater recharge, biodiversity and disaster resilience.

7. Weak scrutiny and injustice: Subsidies on power, water and land, along with weak environmental assessment, may benefit private companies while local communities bear the ecological cost.

Way Forward:

- Make environmental impact assessment mandatory for large AI data centres.
- Require renewable energy use, battery storage and green power purchase agreements.
- Promote water-efficient cooling, wastewater reuse, liquid immersion cooling and air cooling.
- Avoid locating data centres in water-stressed, coastal, wetland and ecologically fragile areas.
- Ensure transparent pricing of land, water and electricity to prevent misuse of public resources.
- Make public consultation and social impact assessment compulsory.
- Frame green data centre standards on energy efficiency, water use, heat recovery and emissions reporting.
- Promote circular economy through server recycling, chip reuse and strict e-waste management.

AI data centres are vital for India's digital and AI ambitions, but their growth cannot come at the cost of water security, energy justice and ecological stability. India must adopt a green, regulated and locally accountable model of AI infrastructure.

17. GREEN HYDROGEN

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development > Indian Economy and issues > Renewable energy

REFERENCE NEWS:

- Recently, Union Minister Pralhad Joshi launched the **Green Hydrogen Certification Portal of India (GHCI)** during a national workshop organised by MNRE under the National Green Hydrogen Mission.
- The portal aims to ensure **transparent certification, regulatory compliance and credibility** in India's green hydrogen sector. It will help verify whether hydrogen is genuinely produced using renewable energy and prevent **greenwashing**.

Greenwashing means making a product, company, project or policy appear more environmentally friendly than it actually is.
In simple terms, it is **false or exaggerated "green" claims** used to gain public trust, customers or investment.
Example: If a company says its hydrogen is "green" without proving that it was produced using renewable energy, it can be considered greenwashing.

NATIONAL GREEN HYDROGEN MISSION (NGHM):

- The Indian government launched the **National Green Hydrogen Mission (NGHM) in 2023**, as an umbrella programme that aims to establish a Green Hydrogen ecosystem and catalyse a systemic response to the opportunities and challenges in this sector
- The **National Green Hydrogen Mission (NGHM)** aims to build the capacity and ecosystem required to position **India as a global leader in clean hydrogen**. By 2030, the Mission will be supported by about **125 GW of new renewable energy capacity** dedicated to green hydrogen production, along with investments exceeding ₹8 lakh crore.

HYDROGEN:

- Hydrogen (H) is a **colourless, odourless, tasteless, flammable gaseous substance**. A molecule of hydrogen is the simplest possible molecule.
- Elementary hydrogen finds its **principal industrial application in the manufacture of ammonia (NH_3).**

- Hydrogen is **a clean fuel** when burned with oxygen. It can be used in fuel cells or internal combustion engines. It is also used for spacecraft propulsion.

WHAT IS GREEN HYDROGEN?

- Green Hydrogen is Hydrogen produced **using renewable energy**, such as solar or wind power, instead of fossil fuels. In this process **water is split into hydrogen and oxygen through electrolysis, using electricity from solar panels or wind turbines.**
- According to standards notified by Govt of India, Hydrogen made this way is considered "green" if the total emissions from the process are very low, not more than **2 kg of CO_2 equivalent** for every **1 kg of Hydrogen** produced. Green Hydrogen can also be produced by converting biomass (like agricultural waste) into hydrogen, as long as emissions remain below the same limit.

TYPES OF HYDROGEN BASED ON EXTRACTION METHODS:

Depending on the **nature of the method of its extraction**, hydrogen is categorised into three categories, namely, **Grey, Blue and Green.**

- **Grey Hydrogen:** It is produced via **coal or lignite gasification** (black or brown), or via a process called steam methane reformation (SMR) of natural gas or methane (grey). These tend to be **mostly carbon-intensive processes.**
- **Blue Hydrogen:** It is **produced via natural gas or coal gasification** combined with **carbon capture storage (CCS) or carbon capture use (CCU)** technologies to reduce carbon emissions.
- **Green Hydrogen:** It is produced using **electrolysis of water with electricity generated by renewable energy.**

BENEFITS OF GREEN HYDROGEN:

- **Environmentally sustainable**:
  - Green Hydrogen is a clean fuel that produces **only water, electricity, and heat.**
  - For instance, Hydrogen can potentially **replace the coal and coke in iron and steel production**. Steel manufacturing is one of the largest carbon emitters in the world, decarbonising this sector using green hydrogen is expected to **have significant impact on our climate goals.**
  - For instance, Indian companies such as **Tata Steel, JSW Steel and Vizag Steel (RINL)** have initiated hydrogen injection and pilot DRI trials, demonstrating early adoption. Green hydrogen also offers deep decarbonisation for Indian fertilizer units, methanol plants, and refineries such as those operated by **Indian Oil Corporation (IOC)** and **Hindustan Petroleum**, which currently rely on natural-gas-based grey hydrogen.
- **Reduce fossil fuel imports:**
  - At present, **hydrogen produced from natural gas is widely utilized** for production of nitrogenous fertilizers, and petrochemicals.
  - Substituting this with green hydrogen enables renewable-energy-based production and lowers dependence on **imported LNG and naphtha**.

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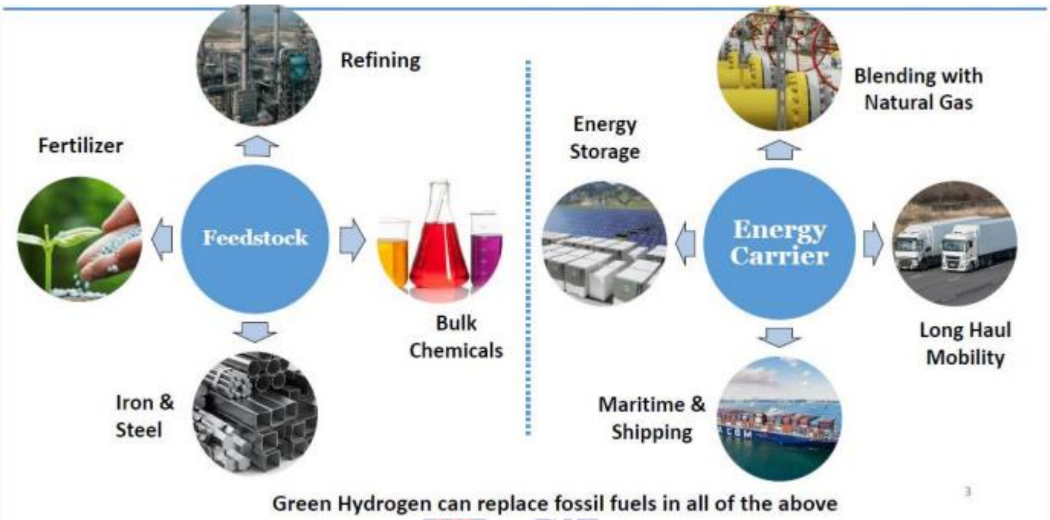
- It shields the economy from **global fuel price volatility, OPEC decisions, and geopolitical disruptions**, while strengthening long-term energy sovereignty and improving the balance of payments.



- **Lighter alternative to battery electric vehicles:**
  - **Hydrogen fuel cell electric vehicles (FCEVs)** offer a lighter alternative to battery electric vehicles (BEVs), particularly advantageous for heavy-duty trucks. FCEVs, powered by hydrogen, boast **lighter fuel cell stacks compared to bulky EV batteries.** This results in increased payload capacity, crucial for freight transportation efficiency.
  - Research indicates that long-haul FCEVs can match diesel trucks in freight amounts, while **BEVs incur a weight penalty of up to 25% due to heavier batteries.** In the pursuit of reducing carbon emissions without sacrificing revenue-generating payload capacity, green hydrogen emerges as a promising solution.

Hydrogen fuel cell vehicles:
- A **hydrogen internal combustion engine (ICE)** vehicle utilises hydrogen through combustion — which is similar to cars running on diesel and petrol, except there are no carbon emissions.
- A **hydrogen fuel cell electric vehicle (FCEV)** utilises **hydrogen electrochemically** by converting hydrogen stored in a high-pressure tank into electricity, leaving water as the byproduct.
- Even though hydrogen ICE vehicles do not emit carbon, research suggests that burning hydrogen is far less energy efficient than converting it into electricity in a fuel cell.

- **Rapid R&D growth**:
  - **Researches in hydrogen as a fuel are gaining momentum** worldwide.
  - As new technologies create cheaper production methods, **hydrogen can become cost competitive.**
  - **For instance**, in India, the **Strategic Hydrogen Innovation Partnership (SHIP)** supports advanced R&D through institutions such as **BARC, CSIR, IITs, IISc, and ISRO.**
  - India's pilot projects in **Solid Oxide Electrolysis (SOE), Anion Exchange Membrane (AEM) electrolysers, and indigenous Proton Exchange Membrane (PEM) technologies**—supported by the Solar Energy Corporation of India (SECI) and the Department of Science and

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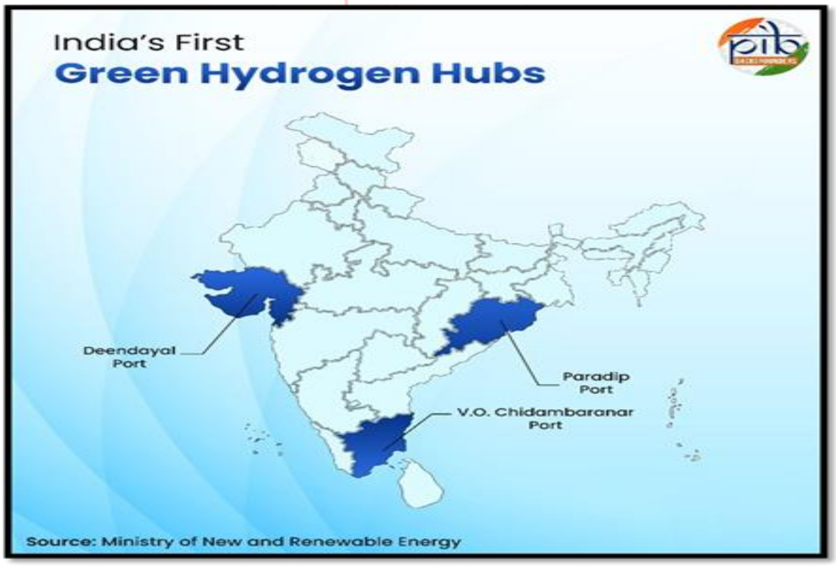
Technology (DST)—are driving higher conversion efficiencies, improving durability, and lowering overall production costs.

- **Energy density**:
  - Hydrogen has a **strong octane rating** and hence can **deliver a tremendous amount of energy.** This makes it suitable for:
    - **Indian Railways' future hydrogen trains** (proposed initially for the Northern Railway network)
    - **Mining trucks and heavy machinery** in Jharkhand, Chhattisgarh, and Odisha
    - **Long-range defence and aerospace applications** under DRDO's hydrogen fuel-cell programmes
- **Hydrogen-based transport:**
  - **Fuel cell electric vehicles (FCEVs)** run on hydrogen fuel and have **no harmful emissions.**
  - While **Battery Electric Vehicles (BEVs)** are dependent on **imported raw materials like lithium and cobalt** for lithium-ion batteries, the hydrogen fuel cell supply chain can be wholly indigenized, making India **Aatmanirbhar in the clean transportation segment.**
- **Storage**:
  - Electricity can be difficult to store and convey over long distances. But by using electricity to extract green hydrogen, both storage and transport become simple.
  - India is developing **hydrogen/ammonia storage and bunkering at:**
    - V.O. Chidambaranar Port (Tamil Nadu)
    - Deendayal Port, Kandla (Gujarat)
    - Paradip Port (Odisha)
  - **This supports energy storage, industrial supply chains, and future exports.**



- **Energy security**:
  - Green Hydrogen **can be locally produced**, meaning countries can power themselves independently without having to rely on external energy suppliers.
  - This can save India from potential **geopolitics-led energy crises like oil blockades.**

GOVERNMENT INITIATIVES:

- **National Green Hydrogen Mission:**
  - The Mission is under the **Ministry of New and Renewable Energy**. It is a program to incentivise the commercial production of green hydrogen and make India a

net exporter of the fuel. The Mission will facilitate demand creation, production, utilization and export of Green Hydrogen.

- **Key Programmes Under NGHM:**
    - **Strategic Interventions for Green Hydrogen Transition (SIGHT)** ₹17,490 crore incentive scheme supporting domestic **electrolyser manufacturing** and **green hydrogen production**.
    - **Green Hydrogen Hubs**: Three ports designated as hydrogen hubs for **production, storage, bunkering and export**:
        - Deendayal Port Authority (Gujarat)
        - V.O. Chidambaranar Port Authority (Tamil Nadu)
        - Paradip Port Authority (Odisha)
    - **Green Hydrogen Certification Scheme of India (GHCI)**: National certification framework launched in April 2025 to verify hydrogen as "green." Mandatory for producers receiving **central/state incentives** or selling hydrogen **within India**.**Bureau of Energy Efficiency (BEE)** is the nodal authority.
    - **Strategic Hydrogen Innovation Partnership (SHIP)**: Public–private R&D collaboration involving **BARC, ISRO, CSIR, IITs, IISc**, and industry. Supports innovation with **₹400 crore for 23 R&D projects** and a **₹100 crore startup fund** (up to ₹5 crore/project). Includes international joint proposals under the **EU–India Trade and Technology Council (TTC)**.

- **Green Hydrogen/Ammonia Policy.**
- **State-Level Initiatives**
    - Andhra Pradesh: Offers 100% exemption from electricity duty for the power consumed in the production of green hydrogen/ammonia from renewable plants.
    - Uttar Pradesh: Provides various incentives including reimbursement of SGST and exemptions from payment of electricity duty.
- **Supports Export Competitiveness:**
    - India's low-cost solar power provides a global competitive edge. Green ammonia, green methanol, and e-fuels are poised to become major export commodities from ports like Kandla, Paradip, and VOC.
    - Countries such as **Japan, South Korea, Germany, and the EU** are actively seeking long-term hydrogen/ammonia import contracts.

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India could emerge as a low-cost green hydrogen supplier by 2035, boosting foreign exchange earnings.

- **Job Creation and Industrial Growth:**
    - Green hydrogen creates large-scale employment across:
        - Electrolyser manufacturing (Gujarat, Tamil Nadu)
        - Hydrogen production hubs
        - Storage tank and pipeline manufacturing
    - Fuel cell assembly in **Haryana and Maharashtra**
    - The hydrogen economy will reinforce Make in India and Aatmanirbhar Bharat, while enabling new manufacturing ecosystems in renewable-rich states.
- **Catalyst for Circular Economy:**
    - Green hydrogen supports Power-to-X solutions such as e-methanol, synthetic fuels, and green chemicals.
    - Indian projects exploring these include **GAIL's green hydrogen–methanol pilot** and **IOC's green hydrogen–jet fuel research**. Hydrogen clusters around ports can also create carbon-recycling industrial corridors.
- **Aviation and Shipping Applications:**
    - Hydrogen-derived e-kerosene is vital for decarbonising aviation. **HAL and IOC** are jointly exploring hydrogen-based aviation fuels.
    - For shipping**, IMO projections suggest hydrogen and ammonia will dominate clean marine fuels by 2050.**
    - India is developing maritime hydrogen and ammonia bunkering at Kandla, Paradip, and Tuticorin, positioning itself as a future clean shipping hub.

CHALLENGES:

- **Green hydrogen is relatively expensive**:
    - The **cheapest way to manufacture hydrogen is to rely on fossil fuels** such as coal and natural gas, which produce carbon emissions. However, **green hydrogen** produced **from renewable energy is relatively expensive.**
    - For instance, it costs between **0.9 and 1.5 USD** to produce a kilogramme of hydrogen from coal and anywhere from **3.5 to 5.5 USD per kg** to produce it from renewable energy sources.
    - The cost of electrolysers in India is high because **most advanced technologies (PEM/AEM) are still imported,** increasing capital expenditure.
    - The low capacity utilisation of renewable energy plants—due to intermittency—raises the per-unit cost of green hydrogen production.

- **Competition with Battery Electric Vehicles (BEVs):**
    - BEVs currently dominate the zero-emission vehicle market due to lower fuel costs and a more established charging infrastructure.
    - For hydrogen FCEVs to compete with BEVs, green hydrogen needs to cost between USD 3 and USD 6.5 per kilogram by 2030. For instance, retail green hydrogen prices in California touched **USD 30 per kilogram in 2023**. Also, the California Transportation Commission estimates that building a **hydrogen truck fuelling station costs up to 72% more** than the cost of building a battery electric truck fuelling station.

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- **Storage and transport:**
  - In India, most cylinders are made for compressed natural gas (CNG) and cannot safely contain hydrogen due to its higher pressure requirement. To hold hydrogen, **cylinders need stronger carbon fiber**, making them costly. This poses a major barrier to hydrogen adoption in transportation. **Similarly, existing natural gas pipelines are unsuitable for hydrogen transport** due to the same pressure constraints.
  - Also, because of its **high flammability, high diffusivity** and very low density as a gas, hydrogen **needs bulky storage facilities and safety systems**.
- **Regulatory regime**:
  - Applicable codes and standards for hydrogen-based systems have not been established in India.
- **Safety imperatives for hydrogen retail stations:**
  - Hydrogen is extremely flammable, which means that special care would be needed in handling the fuel at retail stations compared to diesel, petrol, or even CNG. **Robust and fool-proof handling and safety standards** need to be developed before pushing large-scale adoption.
- **It is not easy to replace existing infrastructure:**
  - Creating infrastructure that can support hydrogen as fuel **requires huge investment.**
  - This is why it becomes **highly expensive to replace gasoline.**
- **Renewable Energy Requirement:**
  - Green hydrogen production requires large quantities of **low-cost renewable power**, but land constraints and transmission bottlenecks limit scale-up.
  - **India's best solar-wind locations (Rajasthan, Gujarat, Ladakh)** are geographically distant from industrial hydrogen demand centres, raising transmission and logistics costs.
- **Water Availability Concerns:**
  - Producing 1 kg of green hydrogen requires **9–12 litres of demineralised water**.
  - **Water scarcity in regions like Rajasthan, Ladakh, and parts of Tamil Nadu** poses challenges for large hydrogen projects.
  - **Additional desalination infrastructure is required** in coastal hydrogen hubs (Gujarat, Tamil Nadu), increasing costs and energy use.

WAY FORWARD:

- **Establish Clear Regulations:**
  - Create unified national standards for hydrogen production, storage, transport, and safety.
  - Align MNRE, MoPNG, MoRTH, BIS and state regulations to speed up approvals.
- **Improve Cost Competitiveness:**
  - Provide VGF, concessional finance, GST/tax rationalisation, and reduced import duties. Ensure long-term industrial offtake agreements to stabilise demand.
- **Build Hydrogen Infrastructure:** Develop national hydrogen corridors connecting RE-rich regions to demand centres. Expand refuelling stations, pipelines, storage systems, and port bunkering (Kandla, Paradip, VOC). Create integrated RE–Hydrogen parks with dedicated transmission lines.
- **Strengthen Indigenous R&D & Manufacturing:**
  - Scale up R&D in SOE, AEM, PEM electrolysers, fuel cells, turbines, and storage tech. Promote SHIP-based public–private partnerships and domestic manufacturing ecosystems.
- **Address Water & Renewable Energy Constraints:**

  - Promote round-the-clock RE supply (RE-RTC) for electrolysers. Set up desalination and wastewater recycling units in hydrogen hubs.
- **Develop Skilled Workforce:**Launch training in hydrogen engineering, safety, operations, and fuel-cell maintenance.
- **Establish a National Fuel Cell & Hydrogen Institute:** Create a central institution for R&D, certification, testing, and industry–academia collaboration.

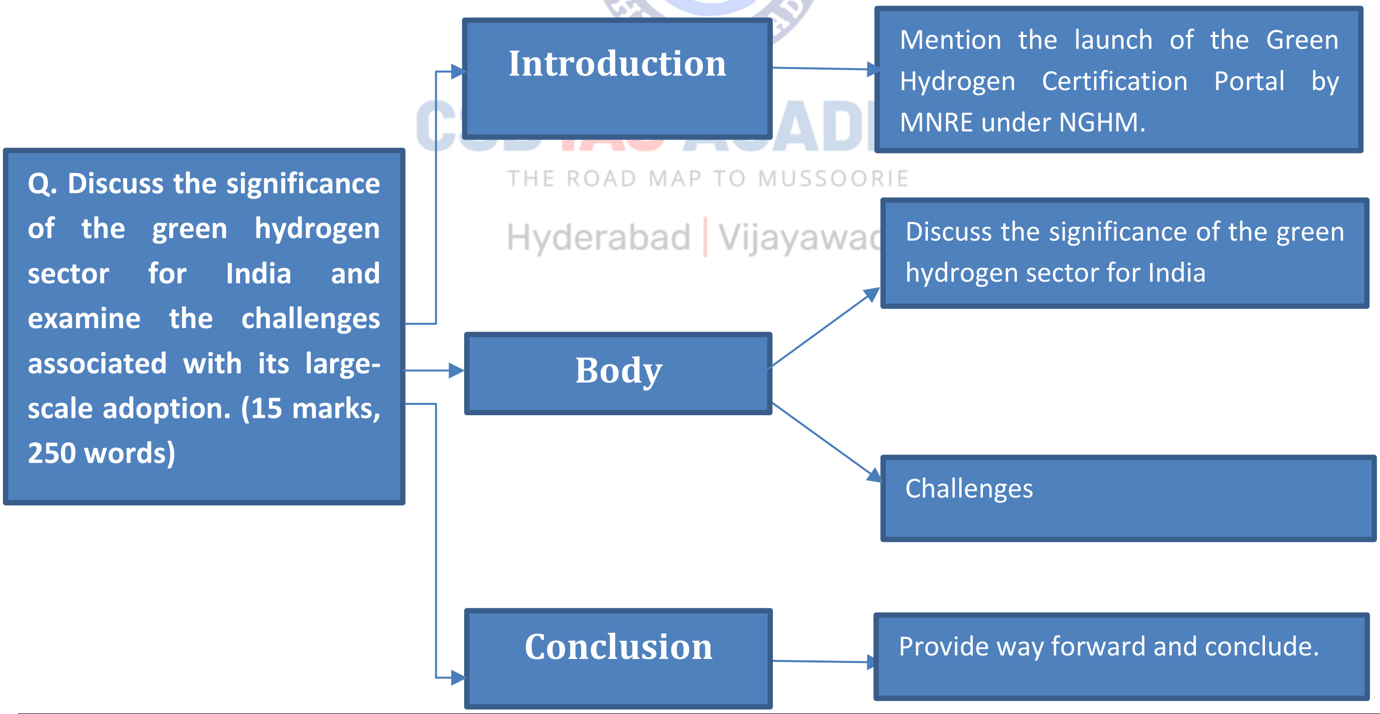
CONCLUSION:

- With supportive policies, strong R&D, and timely infrastructure creation, India can emerge as a global hub for affordable green hydrogen and its derivatives. The launch of GHCI is a key step towards making India's green hydrogen sector **transparent, credible and investment-friendly**, while supporting clean energy transition and industrial decarbonisation.

PRACTICE QUESTION

Q. Discuss the significance of the green hydrogen sector for India and examine the challenges associated with its large-scale adoption. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, Union Minister Pralhad Joshi launched the **Green Hydrogen Certification Portal of India (GHCI)** under the **National Green Hydrogen Mission (NGHM)** to ensure transparent certification and prevent greenwashing. Launched in 2023 with an outlay of **₹19,744 crore**, NGHM aims to build **5 MMT green hydrogen capacity**, supported by **125 GW renewable energy**, over **₹8 lakh crore investment**, more than **6 lakh jobs** and annual emission reduction of **50 million tonnes**.

Significance of Green Hydrogen:

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1. Energy security: Green hydrogen can reduce dependence on imported LNG, naphtha and fossil fuel-based industrial inputs, thereby protecting India from global fuel price volatility and geopolitical supply shocks.

2. Industrial decarbonisation: It can replace grey hydrogen in refineries, fertilisers, methanol and steel. For example, contracts have been awarded for **30,000 MTPA green hydrogen supply** to IOCL, BPCL, HPCL and NRL. In steel, **₹84 crore** has been sanctioned for hydrogen pilot projects, while companies like **Tata Steel, JSW Steel and RINL** have started hydrogen-based trials.

3. Fertiliser and ammonia sector: Agreements for **6.7 lakh MTPA green ammonia** supply to **11 fertiliser plants** can reduce import dependence and decarbonise fertiliser production.

4. Manufacturing and jobs: Under SIGHT, incentives have been awarded for **8,62,000 MTPA green hydrogen production capacity** and **3,000 MW/year electrolyser manufacturing capacity** to 15 companies, promoting Make in India.

5. Transport and storage: Hydrogen fuel cell vehicles are useful for heavy trucks, railways and mining vehicles. The government has allocated **₹208 crore** for **37 hydrogen vehicles** and **9 refuelling stations**.

6. Export potential: Green ammonia, methanol and e-fuels from ports like **Kandla, Paradip and VOC** can help India emerge as a green fuel exporter.

Challenges:

1. High cost: Green hydrogen costs around **USD 3.5–5.5/kg**, compared to **USD 0.9–1.5/kg** for coal-based hydrogen.

2. Storage and transport: Hydrogen requires high-pressure storage, costly carbon-fibre cylinders and special pipelines due to its low density and high flammability.

3. Infrastructure gap: India still lacks adequate hydrogen corridors, refuelling stations, storage systems and port bunkering infrastructure.

4. Renewable energy requirement: Large-scale production needs cheap round-the-clock renewable energy, but solar-wind regions like Rajasthan, Gujarat and Ladakh are far from industrial demand centres.

5. Water stress: Producing 1 kg green hydrogen requires around **9–12 litres of demineralised water**, creating concerns in water-scarce regions.

6. Regulatory gaps: Uniform standards for hydrogen safety, transport, storage and retail handling are still evolving.

Way Forward:

- **Clear regulatory framework:** Establish unified standards for green hydrogen production, certification, storage, transport and safety.
- **Cost reduction:** Provide concessional finance, viability gap funding, tax rationalisation and long-term offtake agreements to make green hydrogen commercially viable.
- **Indigenous manufacturing:** Promote domestic production of PEM, AEM and SOE electrolysers to reduce import dependence and lower costs.

- **Hydrogen infrastructure:** Develop hydrogen corridors, refuelling stations, storage facilities, pipelines and port-based bunkering at Kandla, Paradip and VOC.
- **Renewable energy integration:** Ensure round-the-clock renewable power supply through solar-wind hybrids, storage systems and dedicated transmission lines.
- **Water security:** Use desalinated water, recycled wastewater and water-efficient electrolysis technologies, especially in water-stressed regions.

Government initiatives such as **NGHM, SIGHT, GHCI, Green Hydrogen Hubs, Strategic Hydrogen Innovation Partnership, Green Hydrogen/Ammonia Policy and state-level incentives** provide a strong foundation. With cost reduction, safety regulation and infrastructure creation, green hydrogen can strengthen India's energy security, industrial competitiveness and low-carbon growth.

18. FALLING FDI IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Basic Economics >> External Sector

REFERENCE NEWS:

India's **net FDI has declined sharply** despite strong gross inflows, underlining the impact of disinvestment/capital repatriation.

INDIA'S FDI STORY:

- **Sharp fall in net FDI** from **$44 billion (2020-21)** to **less than $1 billion (2024-25)**. It recovered modestly to **$7.6 billion in 2025-26**.
- **Gross inflows remain high** and reached **$94.6 billion in 2025-26**.
- **Three Types of FDI**
    - **Real FDI (RFDI):** Traditional multinational corporations that bring technology, brands, production capabilities and these are usually long-term investments.
    - **Financial Investors:** Includes private equity funds, venture capital funds, sovereign wealth funds and asset managers. They focus on capital appreciation and enter with planned exit strategies.
    - **Diaspora and SPV Investments:** Investments routed through offshore financial centres and special Purpose Vehicles (SPVs) and may involve round-tripping of Indian capital.
- **Composition of Recent FDI (2022-23 to 2025-26)**
    - **Effective Inflows**
        - Real FDI (RFDI): **41.9%**
        - Financial investors: **40.5%**
        - Diaspora/SPV investments: **17.6%**
        - Almost half of FDI comes from investors whose objective is eventual exit rather than long-term production.
    - **Declining Manufacturing FDI:** Manufacturing-related RFDI has declined across three consecutive four-year periods. In the most recent period manufacturing RFDI constituted only **10.6% of total effective inflows**. India is attracting capital, but not enough long-term manufacturing investment that generates technology transfer, industrial upgrading, export competitiveness
- **Net FDI Falling: Not Because of Profit Repatriation Alone.** The government often attributes weak net FDI to dividend payments and profit repatriation. However, under BoP accounting dividends are recorded in the **Current Account**. They do not reduce net FDI directly. The primary reason is **disinvestment and capital repatriation.** These are recorded in the **Financial Account** and directly reduce net FDI.
    - **Example:** Temasek invested **$637 million** in Schneider Electric India (2020) and exited in 2025 with **$6.4 billion**

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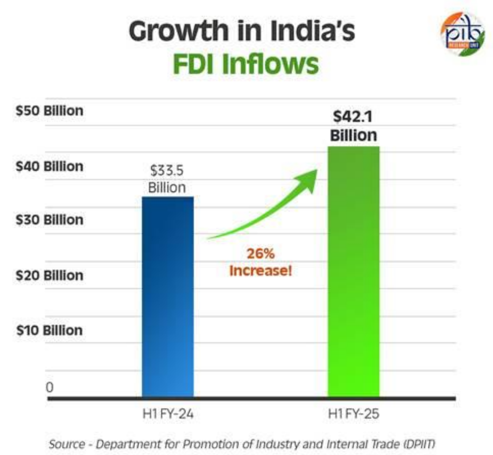
- Total foreign investor divestments recorded at **$52 billion** and 45 major PE/VC exits recorded at **$29 billion**

- **Outward FDI (OFDI) Rising: Total OFDI $65 billion** between 2023-24 and 2025-26. **45%** went to Financial, Insurance and Business Services (FIB). **Major Destinations were** Singapore: **27%** and UAE: **11%**
- **GIFT City and Capital Recycling: Rising Flows Through GIFT City.** Some outward investment may represent capital recycling and round-tripping rather than genuine international expansion.
- **Gross FDI Figures Can Be Misleading:** gross FDI numbers often include ownership restructuring, intra-group transfers, mergers, share swaps and conversion of loans into equity
    - Around **$40 billion** of the **$560 billion** equity inflows (2014-15 to 2025-26) involved such transactions. No fresh foreign capital actually entered India in these cases.
- Between 2022-23 and 2025-26 gross inward equity FDI **$317.8 billion** excluding reinvested earnings **$230.6 billion**. **Disinvestment & Capital Repatriation of $178.9 billion** and **dividend remittances of $118.9 billion**. **Intellectual Property (Royalty) Payments accounted $46.6 billion**
- For every **$1 of fresh FDI inflow,** around **$1.50 flowed out** through disinvestment, dividends and royalty payments.

FOREIGN INVESTMENT:

Foreign investment plays a pivotal role in India's economic growth by providing capital, technology, and access to global markets. It consists of two major components: **Foreign Direct Investment (FDI)** and **Foreign Portfolio Investment (FPI)**. These investments help bridge the gap between domestic savings and investment requirements, enabling India to achieve its developmental goals.



FDI has played a transformative role in India's development by providing substantial **non-debt financial resources**, fostering technology transfers, and creating employment opportunities.

India has achieved a remarkable milestone in its economic journey, with gross foreign direct investment (FDI) inflows reaching an impressive **$1 trillion since April 2000**. This landmark achievement was bolstered by a nearly **26% rise in FDI to $42.1 billion** during the first half of the current fiscal year.

- **Foreign Direct Investment (FDI)**: FDI involves **long-term investments** where a foreign entity acquires ownership or control over a business in India. It is associated with managerial control and the transfer of technology.
    - **Manufacturing**: Companies like **Apple** and **Samsung** have set up manufacturing facilities in India under the "Make in India" initiative.
    - **E-Commerce**: **Amazon** and **Walmart (Flipkart)** are prominent players.
    - **Automobiles**: Foreign companies like **Hyundai**, **Suzuki**, and **Tesla** are major investors.
- **Foreign Portfolio Investment (FPI)**: FPI refers to short-term investments by foreign investors in India's financial assets, such as equities, bonds, and mutual funds. These investments are made

through stock exchanges. FPIs are highly liquid and influenced by global market conditions, making them volatile compared to FDI.

- Global investors buying shares of Indian companies like **TCS**, **Infosys**, or government bonds.

CONSTITUENTS OF FOREIGN INVESTMENT

- **Equity Investments:** Direct equity investments by foreign companies into Indian businesses in the form of FDI and equity investments by foreign institutional investors (FIIs) in Indian stock markets as FPI.
- **Debt Instruments:** Investments in Indian government securities and corporate bonds by foreign investors. India issued **sovereign green bonds** to attract global investments in sustainable projects.
- **Venture Capital and Private Equity:** Foreign investors providing growth capital to Indian startups. Investments by **Sequoia Capital** and **SoftBank** in companies like **Paytm**, **Ola**, and **Zomato**.
- **External Commercial Borrowings (ECBs):** Indian companies borrowing from foreign financial institutions at competitive interest rates. Reliance Industries raised funds through ECBs for its expansion projects.
- **NRI Investments:** Investments by Non-Resident Indians (NRIs) in real estate, bank deposits, and startups.

KEY DRIVERS OF FOREIGN INVESTMENT IN INDIA:

- **Competitiveness and Innovation**: India's ranking in the World Competitive Index 2024 jumped three positions to 40th. India was named as the 48th most innovative country among the top 50 nations, securing the 40th position out of 132 economies in the Global Innovation Index 2023, a significant improvement from its 81st position in 2015. These rankings highlight the country's progress in enhancing its **innovation ecosystem and competitive edge.**
- **Global Investment Standing**: India was the **third largest recipient of greenfield projects** with 1,008 greenfield project announcements, as per the World Investment Report 2023. The number of international project finance deals in India also increased by 64%, making it the recipient of the second largest number of international project finance deals.

❖According to RBI's November 2024 bulletin, gross inward FDI grew to US$ 42.1 billion during April-September 2024, up from US$ 33.5 billion the previous year.

Taiwanese companies are increasingly shifting their supply chains to India due to global trade tensions, with FDI from Taiwan surpassing US$ 665 million between 2018 and 2024.

❖In June 2024, India saw an increase in outward FDI commitments to US$ 2.14 billion compared to US$ 1.14 billion in June 2023, despite a decrease from US$ 2.22 billion in May 2024.

❖April 17, 2024 marked a key policy change with the Ministry of Finance's notification on FDI in the space sector, facilitating expanded investment opportunities for Indian space startups.

- **Large and Growing Consumer Market**: India has a population of over **1.43 billion**, making it one of the **largest consumer markets** globally. The rising middle class and **increasing disposable incomes** further enhance consumer demand.
  - **Unilever**, a global FMCG giant, derives over **30% of its revenues** from emerging markets like India. Its Indian subsidiary, Hindustan Unilever Ltd. (HUL), is one of the largest FMCG companies in the country.

- **Investor-friendly FDI Policies**: India has progressively liberalized its FDI policies, allowing up to **100% FDI** in several sectors, including e-commerce, renewable energy, and single-brand retail.
    - **Amazon** invested over **$6.5 billion** in India to expand its e-commerce operations. Similarly, **IKEA** entered the Indian market with 100% FDI under single-brand retail norms.
- **Reforms to Ease Doing Business**: Comprehensive reforms like **Goods and Services Tax (GST)** and **Insolvency and Bankruptcy Code (IBC)** have streamlined regulatory processes, improving the ease of doing business. Further, to simplify tax compliance for startups and foreign investors, the Income Tax Act, 1961 has been amended in 2024 to abolish angel tax and to reduce income tax rate chargeable on income of a foreign company.
- **Strategic Geographic Location**: India's location between East and West Asia, coupled with a vast coastline, positions it as a global supply chain hub.
    - **Apple** shifted some of its manufacturing operations to India, partnering with suppliers like Foxconn and Wistron, as part of its strategy to diversify supply chains.
- **Expanding Digital Economy**: India's digital economy is growing rapidly, driven by internet penetration and government initiatives like **Digital India**. **Google** committed **$10 billion** to its Google for India Digitization Fund, focusing on connectivity and digital infrastructure. India has over **800 million internet users**, making it the second-largest online market globally.
- **Infrastructure Development**: Mega projects like **Gati Shakti**, **Smart Cities Mission**, and modernized ports attract infrastructure-focused foreign investments. India is projected to spend **$1.4 trillion on infrastructure** under the National Infrastructure Pipeline (NIP) by 2025.
- **Young and Skilled Workforce**: India has the world's largest youth population, with **66% of its population under the age of 35**, and produces millions of skilled professionals annually. India produces over **1.5 million engineers annually**, providing a competitive edge in sectors like IT and manufacturing.

CHALLENGES OF INDIA IN ATTRACTING FOREIGN INVESTMENT:

- **Policy Uncertainty and Frequent Regulatory Changes**: Inconsistent policies and frequent regulatory changes create uncertainty for foreign investors. Investors face difficulties in long-term planning, reducing India's appeal as a stable investment destination.
    - In 2020, India restricted FDI from neighbouring countries (especially China) under the **automatic route**, citing national security concerns. While justified, this abrupt policy change impacted existing and potential investments from Chinese firms like **Xiaomi** and **Oppo**.
- **Bureaucratic Red Tape**: Despite improvements in the ease of doing business rankings, complex administrative procedures and delays continue to deter investors. Land acquisition and environmental clearances for industrial projects remain cumbersome and time-consuming.
- **Infrastructure Deficiencies**: Inadequate infrastructure in logistics, transportation, and utilities increases operational costs for businesses. Despite its potential as a manufacturing hub, India struggles with high logistics costs (14% of GDP) compared to countries like China (8%). India ranked **47th** in the 2022 Logistics Performance Index, reflecting the need for infrastructure improvement.
- **Taxation and Compliance Issues**: Although India has reformed its tax system with measures like GST, complex tax compliance procedures remain a concern. Retrospective tax demands, such as the high-profile cases involving **Vodafone** and **Cairn Energy**, caused apprehension among foreign investors.

- **Land Acquisition and Labor Laws**: Difficulty in acquiring land and rigid labour laws pose significant hurdles to setting up industries in India. India's labour market flexibility is ranked low, despite reforms like the **2020 labour codes** which aim to simplify labour regulations.
- **Lack of Uniformity in State-Level Policies**: India's federal structure often results in inconsistent policies across states, complicating operations for businesses. States like Gujarat and Maharashtra are investor-friendly, but others lag due to bureaucratic inefficiencies and lack of incentives.
- **Judicial Delays and Contract Enforcement**: Prolonged legal disputes and delayed enforcement of contracts discourage investments. Arbitration cases like **Vodafone vs. India** and delays in infrastructure-related litigation affect investor confidence. India ranks **163rd** in enforcing contracts as per the **World Bank Ease of Doing Business Report (2020)**, with cases taking over four years to resolve on average.
- **Geopolitical Risks and Trade Barriers**: Global tensions, coupled with protectionist policies, create challenges for foreign investors.
- **High Cost of Capital**: High interest rates and limited access to affordable credit deter foreign companies, especially in capital-intensive sectors. Foreign companies often prefer economies like Vietnam or Thailand due to lower financing costs. India's corporate borrowing rates are among the highest in Asia, reducing its competitiveness.
- **Competition from Other Emerging Markets**: Countries like Vietnam, Indonesia, and Bangladesh are becoming preferred destinations for foreign investors due to lower costs and simplified regulations.
- **Environmental and Social Concerns**: Large-scale industrial projects often face opposition due to environmental and social concerns.

WAY FORWARD TO ADDRESS CHALLENGES:

- **Streamlining Policies**: Ensure consistent and transparent policies to build investor confidence.
- **Infrastructure Upgrades**: Accelerate projects like **Gati Shakti** and **National Infrastructure Pipeline (NIP)**.
- **Judicial Reforms**: Establish fast-track courts for dispute resolution and contract enforcement.
- **Competitive Taxation**: Maintain a business-friendly tax regime and avoid retrospective taxation.
- **Promoting Ease of Doing Business**: Simplify land acquisition, labour laws, and compliance procedures.

PRACTICE QUESTION

Q. Despite record gross Foreign Direct Investment (FDI) inflows, India has witnessed a sharp decline in net FDI in recent years. Examine the factors responsible for this trend. Discuss the challenges associated with the changing composition of FDI. (15 marks, 250 words)

APPROACH

Q. Despite record gross Foreign Direct Investment (FDI) inflows, India has witnessed a sharp decline in net FDI in recent years. Examine the factors responsible for this trend. Discuss the challenges associated with the changing composition of FDI. (15 marks, 250

Introduction → Start with decline in net FDI data as given in the statement

Body → Explain the factors responsible for this decline

→ Explain the challenges associated with changing composition of FDI

Conclusion → Provide way forward and conclude

MODEL ANSWER

Foreign Direct Investment (FDI) plays a crucial role in augmenting capital formation, technology transfer, employment generation, and integration into global value chains. While India has attracted over **$1 trillion in cumulative FDI since 2000**, net FDI has declined sharply from **$44 billion in 2020-21 to less than $1 billion in 2024-25**, despite gross inflows touching **$94.6 billion in 2025-26**.

Factors Behind the Decline in Net FDI

1. Large-Scale Disinvestment and Capital Repatriation: Foreign investors are increasingly exiting investments through IPOs, buybacks, and secondary sales. **Temasek's exit from Schneider Electric India** generated a return of $6.4 billion on an investment of $637 million.

2. Rise of Financial Investors: Financial investors account for **40.5% of effective FDI inflows**. Their business model is based on eventual exits rather than long-term production.

3. Rising Outward FDI (OFDI): India recorded **$65 billion OFDI between 2023-24 and 2025-26**, with significant investments routed through Singapore and UAE.

4. Declining Manufacturing FDI: Manufacturing-related Real FDI constituted only **10.6% of effective inflows**, weakening technology transfer and industrial deepening.

5. Round-Tripping and Capital Recycling: Investments through SPVs and offshore financial centres may not represent fresh productive capital.

Challenges Arising from the Current FDI Pattern

- Limited technology transfer and innovation spillovers.
- Weak manufacturing competitiveness.

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- Growing external payment obligations through dividends and royalties.
- Increased volatility due to PE/VC exits.
- Pressure on Balance of Payments sustainability.
- Distortion of FDI statistics through ownership restructuring and share swaps.

Way Forward

- Prioritise **greenfield and technology-intensive FDI** in manufacturing.
- Strengthen Production Linked Incentive (PLI) schemes and Make in India.
- Improve ease of doing business, contract enforcement, and dispute resolution.
- Promote stable and transparent policy regimes.
- Enhance scrutiny of round-tripping and SPV-based investments.
- Develop sector-specific strategies for semiconductors, electronics, renewable energy, and advanced manufacturing.
- Encourage long-term strategic investors over short-term financial investors.

India's FDI strategy must move beyond attracting higher volumes of capital towards securing **high-quality, technology-driven and employment-generating investments**. Sustained economic growth and external sector stability require a shift from merely counting gross inflows to assessing the developmental impact and long-term sustainability of foreign investment.

19. SPACE SECTOR OF INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Science and Technology >> Space Technology

REFERENCE NEWS:

India's space programme has transformed from a scientific endeavour into a strategic national asset supporting development, security, innovation, and diplomacy. Guided by **Aatmanirbhar Bharat**, **Make in India**, and **Viksit Bharat 2047**, India is emerging as a leading global space power

Major Space Achievements

- **Chandrayaan-3 (2023):** India became **the first country to soft-land near the Moon's south pole and the fourth nation to achieve a lunar soft landing**.
- **Aditya-L1 (2023):** India's first solar mission placed at the Sun-Earth L1 point for uninterrupted solar observation.
- **Mars Orbiter Mission (Mangalyaan):** India became the first country to reach Mars orbit on its maiden attempt.
- **SPADEX (2025):** India became the fourth country after the US, Russia, and China to demonstrate autonomous space docking.

Future Missions

- **Chandrayaan-4 (2027):** Lunar sample return mission.
- **Chandrayaan-5/LUPEX:** Joint ISRO-JAXA mission to explore lunar polar water ice.
- **Venus Orbiter Mission (2028):** India's first mission to Venus.
- **Gaganyaan:** India's first human spaceflight programme.
- **Bharatiya Antariksh Station (BAS):** Planned indigenous space station with first module by 2028.

Private Sector and Commercialisation

- Space startups increased from **1 in 2014** to **over 400 by February 2026**.
- Space startup investments exceeded **$500 million**.
- India's space economy currently stands at **$8 billion** and is projected to reach **$40–45 billion** over the next decade.
- Key institutions:
  - **IN-SPACe** – Single-window facilitator for private participation.
  - **NSIL** – Commercialisation arm of ISRO.

FDI Reforms

- Up to **100% FDI** permitted in selected space activities.
- Up to **74% automatic route** in satellite manufacturing and operations.

Launch Vehicle Developments

- Operational launch vehicles: PSLV GSLV LVM3
- Approved **Next Generation Launch Vehicle (NGLV)** with 30-tonne LEO capability.
- Development of reusable launch vehicle technologies and winged-body systems.

Infrastructure Expansion

- Second spaceport under development at **Kulasekarapattinam, Tamil Nadu**.
- Third Launch Pad approved at Sriharikota.

NavIC (Navigation with Indian Constellation)

- Indigenous satellite navigation system providing positioning and timing services

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across India and beyond.
  - Supports Train tracking Vehicle monitoring Power grid synchronisation Disaster alerts.

Governance and Public Service Applications

Space technology supports: Agriculture and crop forecasting, water resource management, disaster management, telemedicine, digital education through PM e-Vidya, fisheries advisories and coastal safety.

International Cooperation

- India has signed **300+ space cooperation agreements** with **61 countries and 5 multilateral organisations**.
- Foreign satellites launched: 35 before 2014. 399 after 2014 till March 2026.
- Major partnerships: NASA (NISAR), CNES-France (TRISHNA), JAXA-Japan (LUPEX), ESA, Russia (Gaganyaan), Germany, Italy, Saudi Arabia, Mauritius, Bhutan.

PRESENT STATUS OF INDIA'S SPACE ECONOMY:

As per the report of Novaspace, a European consultancy,

- India's space sector has directly contributed about $24 billion (₹20,000 crore) to India's Gross Domestic Product over the last decade.
- It has directly supported **96,000 jobs** in the public and private sector.
- The Indian Space Research Organisation (ISRO) is the **sixth-largest national space agency** in the world.
- For every dollar produced by the space sector, there was a **multiplier effect of $2.54** to the Indian economy and India's space force was 2.5 times "more productive" than the country's broader industrial workforce.
- India's space sector has benefitted from decades of consistent investment with $13 billion invested in the last decade it is the **8th largest space economy** (in terms of funding) in the world.
- The Indian space sector was diversifying and now had 700 companies including 200 start-ups. **India's space industry is valued at $8 billion, contributing 2% to the global space economy.**
- Satellite communications contributed 54% to the space economy, followed by navigation (26%) and launches (11%). The main industries supported by the space sector were telecom (25%), information technology (10%) and administrative services (7%), the report highlighted.
- The allocation for the space sector in Union Budget 2025-26 has increased compared to last year. The Department of Space has been allocated Rs 13,416.2 crore, up from Rs 13,042.75 crore in 2024 — a **rise of 2.86 per cent**.
- The budget also removed the 5 per cent customs duty on goods "used in the building of launch vehicles and launching of satellites".

ROADBLOCKS TO DEVELOPMENT OF SPACE SECTOR IN INDIA:

- **Limited Funding and Budget Constraints:** ISRO operates with a relatively modest budget using **frugal technology** compared to NASA or ESA. This limits the scale and frequency of missions, especially in areas like deep space exploration, human spaceflight, and large-scale commercial ventures.
  - ISRO's budget constraints have impacted the timeline of ambitious projects such as the Gaganyaan mission (India's first human spaceflight mission), which has faced delays partly due to funding limitations.

- **Technology and Infrastructure Gaps:** India lags behind in certain advanced space technologies, such as reusable launch vehicles, human-rated spaceflight systems, and advanced space habitats. The infrastructure for large-scale satellite manufacturing and testing is limited.
  - While ISRO has made progress in developing a reusable launch vehicle (RLV), it is still in the experimental phase, and the country has not yet developed a fully operational reusable rocket like SpaceX's Falcon 9.
  - India is also dependent on Russia for advanced space habitats to train her astronauts for Gaganyaan mission.
- **Regulatory and Policy Hurdles:** The sector faces regulatory challenges, including unclear policies for private sector participation, satellite communication regulations, and intellectual property rights discouraging both domestic and international investments.
  - The slow pace of implementing the **Space Activities Bill**, which is intended to provide a legal framework for commercial space activities, has created uncertainty among private players looking to invest in the Indian space economy.
- **Human Resources and Skill Development:** There is a shortage of trained personnel with expertise in space technology and innovation, particularly in the private sector.
  - The growth of space startups in India is hampered by the lack of available talent with specialized skills in satellite technology, data analytics, and space law.
- **Sustainability and Space Debris:** As India's space activities increase, so does the risk of space debris, which can pose a threat to both existing satellites and future missions. Ensuring the sustainability of space operations is crucial.
  - In response to this global concern, India has set an ambitious target to ensure all its **space missions are debris-free by 2030,** aligns with the ISRO recent efforts to implement deorbiting techniques and careful mission planning to minimise space debris.
- **Geopolitical Risks:** India's space ambitions could be impacted by geopolitical tensions, trade restrictions, and technology transfer limitations imposed by other countries.
  - Restrictions on technology transfers from the United States or other advanced countries can slow down India's access to cutting-edge space technologies, affecting the pace of development in areas like satellite navigation or space exploration.
- **Market Access and Commercialization:** The commercialization of space-based services such as satellite internet, space tourism, and asteroid mining is still in its infancy.
  - Despite the success of the NavIC system, its global adoption has been limited compared to GPS.
- **International Collaboration and Competition:** While partnerships with other space agencies can bring in resources and expertise, they also require navigating complex political dynamics.
  - Collaborations with countries like the U.S. (e.g., **NASA-ISRO Synthetic Aperture Radar (NISAR) mission**) are crucial.

ROCKET REUSABILITY

After four decades of government-led exploration, the **global space sector has entered a commercial phase**, led by private companies. Space is now a **fast-growing industry projected to exceed USD 1 trillion by 2030**. Innovations, especially **rocket reusability,** have reduced the **cost of access to space per kg by 5–20 times** and significantly increased launch frequency.

Rocket Economics and Mission Costs

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- **Human space missions** are **3–5 times more expensive** than satellite launches due to life-support systems, safety, redundancy, and complex mission planning.
- **Satellite missions** are largely one-way, with simpler hardware and software.

Physics Constraints: The Rocket Equation

- Rockets must overcome **gravity and aerodynamic drag** and move forward by ejecting exhaust backward at supersonic speeds.
- The **Tsiolkovsky rocket equation** shows spaceflight's core challenge, fuel mass. Over **90% of a rocket's mass** is propellant and tanks, leaving **<4%** for payload, creating a vicious mass cycle.

Why Rockets Have Stages

- **Staging** sheds dead weight by discarding spent propulsion-units mid-flight, improving performance.
- Traditional expendable rockets (e.g., **PSLV**, **LVM-3**) use each stage once, discarding them into the ocean.

Reusability: The Game Changer

- **SpaceX** introduced breakthroughs such as **3D printing**, **modular design**, **vertical integration**, and **reusable stages**.
- **Reusability** shifts spaceflight from a **disposable to a transportation model.**
- The **Falcon 9** first stage lands using engine relights (retro-propulsion) and aerodynamic drag.
- SpaceX has **recovered Falcon 9 first stages over 520 times**, with some stages reused **30+ times**.
- SpaceX is developing **Starship**, a **fully reusable** vehicle capable of carrying crew and cargo to **Earth orbit, the Moon, and Mars**.
- **Blue Origin** has demonstrated booster recovery for **New Glenn**.
- China's commercial sector is advancing rapidly; **LandSpace** has attempted recovery of parts of its orbital **Zhuque-3**.

Limits to Reuse

- Reusability is constrained by **structural and material fatigue,** especially engines and fuel tanks.
- Extreme temperature swings, pressure, and g-forces cause micro-fractures.
- Practical limits depend on **refurbishment cost, inspection time, and acceptable risk**.

TO FLY PAST THE HURDLES:

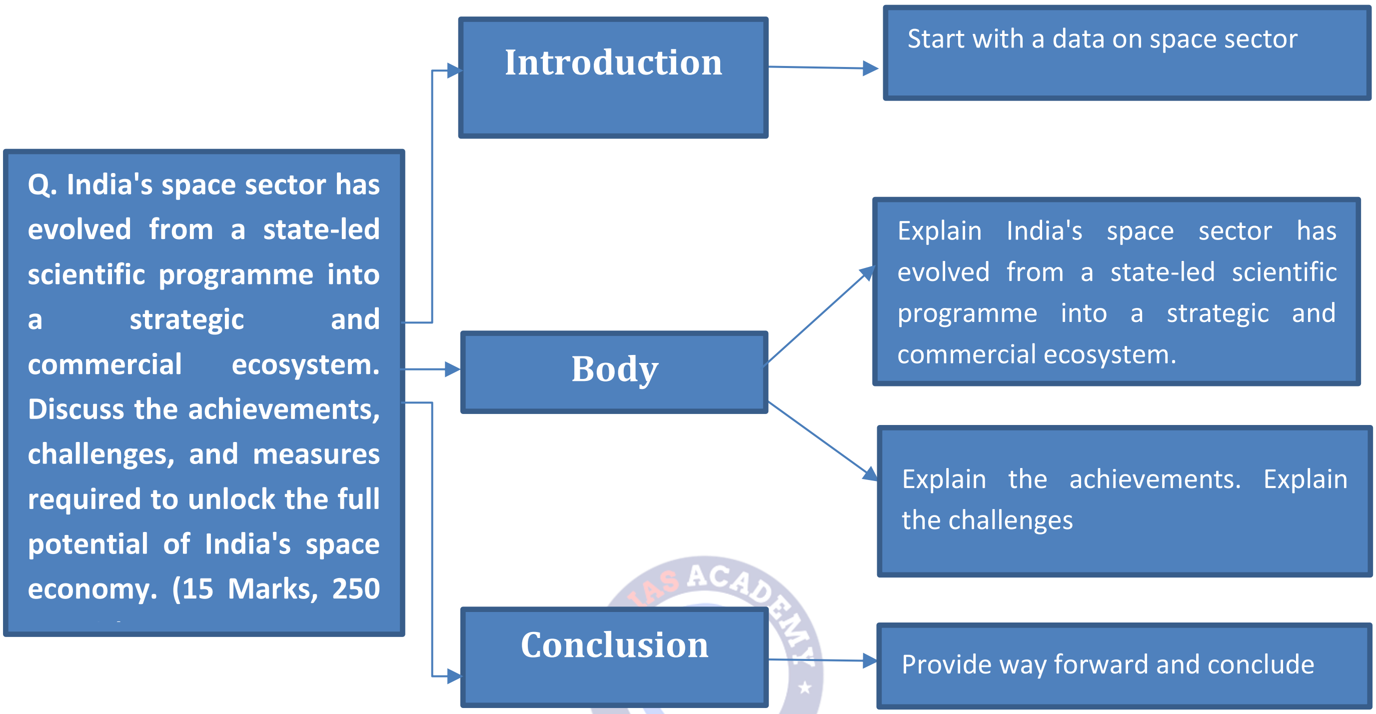
- **Enhancing Private Sector Participation:** The Indian government established the Indian National Space Promotion and Authorization Centre (IN-SPACe) and NewSpace India Limited (NSIL) to facilitate private sector participation in space activities.
  - NASA's partnership with private companies like SpaceX and Boeing under the Commercial Crew Program is a model of successful collaboration, reducing costs and accelerating innovation.
  - Creating venture capital funds and offering tax incentives for space startups can stimulate innovation and attract more private investment like ESA's Business Incubation Centres (BICs).
- **Expanding International Collaborations:** India has collaborated with several countries, including the U.S., Russia, and France, on missions like the NASA-ISRO Synthetic Aperture Radar (NISAR) and the Chandrayaan series. ISRO's commercial arm, Antrix Corporation, has successfully marketed satellite launch services to several countries, enhancing India's global presence.

- **Strengthening Regulatory Frameworks**: India has proposed the Space Activities Bill to provide a legal framework for private sector participation and space activities, though it is yet to be enacted.
    - **T**he U.S. has a robust and comprehensive space policy framework that includes clear regulations for commercial space activities, intellectual property rights, and liability issues.
    - The UK Space Agency's Space law framework, which emphasizes collaboration between the government and private sector, could be a model for India.
- **Investing in Advanced Technologies:** Development of GSLV Mk III made significant progress in heavy-lift launch vehicles, which are crucial for future deep space missions and human spaceflight. India has developed indigenous cryogenic engines, bolstering its ability to launch heavier payloads into geostationary orbits.
    - Invest more in the development and operationalization of RLVs, which can reduce the cost of space access and make space missions more sustainable.
    - The use of advanced robotics and AI in Japan's Hayabusa missions demonstrates the importance of cutting-edge technology in achieving mission success.
- **Addressing Space Debris and Sustainability:** Space Situational Awareness (SSA) targeting space debris free by 2030.Development of Project NETRA has implemented protocols for end-of-life management of satellites to mitigate space debris.
- **Boosting Human Resources and Skill Development:** ISRO has established training programs for young scientists and engineers, fostering a new generation of space professionals. Initiatives like Young Scientist Program (YUVIKA) and collaborations with educational institutions have been launched to promote space education.
- **Enhancing Commercialization and Market Access:** Through Antrix Corporation and NSIL, India has marketed its launch services and space-based services globally, generating revenue and enhancing market access. India is working on expanding the reach and application of its navigation system, NavIC, beyond its borders.
    - Develop and market satellite-based services, such as remote sensing data and satellite communication, to new industries and markets like SpaceX's Starlink project.
    - The OneWeb initiative, which involves collaboration with multiple countries and companies, could inspire India to pursue multinational commercial ventures in the space sector.

PRACTICE QUESTION

Q. India's space sector has evolved from a state-led scientific programme into a strategic and commercial ecosystem. Discuss the achievements, challenges, and measures required to unlock the full potential of India's space economy. (15 Marks, 250 Words)

APPROACH



MODEL ANSWER

India's space sector has undergone a remarkable transformation, emerging as a critical driver of national development, strategic autonomy, technological innovation, and economic growth. Today, India is the world's sixth-largest space agency and its space economy is valued at nearly **$8 billion**, with projections of reaching **$40–45 billion by 2035**.

Evolution into a Strategic and Commercial Ecosystem

- **Scientific Phase (1960s–1990s):** Focus on satellite communication, weather forecasting, remote sensing, and self-reliance through programmes such as INSAT and IRS.
- **Technological Capability Phase (2000s):** Development of PSLV, GSLV, cryogenic engines, and deep-space missions such as Chandrayaan-1 and Mangalyaan.
- **Strategic Phase:** Space assets increasingly support national security, navigation (NavIC), disaster management, surveillance, and defence preparedness.
- **Commercial Phase:** Emergence of 400+ startups, private launch services, satellite manufacturing, FDI reforms, and commercialization through NSIL and IN-SPACe.

Achievements of India's Space Sector

- Landmark missions such as **Chandrayaan-3**, **Aditya-L1**, **Mangalyaan**, and **SPADEX** have established India's technological capabilities.
- Future missions including **Gaganyaan**, **Chandrayaan-4**, **LUPEX**, **Venus Orbiter Mission**, and **Bharatiya Antariksh Station** demonstrate long-term ambition.
- Space startups have increased from **1 in 2014 to over 400 by 2026**, aided by reforms such as **IN-SPACe**, **NSIL**, and liberalized FDI norms.
- NavIC, satellite communications, disaster management systems, telemedicine, and agricultural applications have expanded the developmental impact of space technology.

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- India has signed **300+ international space cooperation agreements** and launched **399 foreign satellites** after 2014.

Challenges

- Limited funding compared to agencies such as NASA and ESA.
- Dependence on foreign technologies in advanced areas like human spaceflight infrastructure and reusable launch systems.
- Delays in regulatory reforms, particularly the Space Activities Bill.
- Shortage of skilled manpower in emerging domains.
- Growing concerns regarding space debris and sustainability.
- Geopolitical restrictions on technology transfers and market access.

Measures Required

- Strengthen private sector participation through IN-SPACe and venture capital support.
- Accelerate enactment of a comprehensive space law.
- Invest in reusable launch vehicles, AI, robotics, and advanced propulsion systems.
- Enhance international collaborations and technology partnerships.
- Promote skill development through programmes like YUVIKA.
- Expand commercialization of launch services, satellite applications, and NavIC-based solutions.

India's space sector stands at a historic inflection point. By combining scientific excellence, private innovation, regulatory reforms, and international cooperation, India can emerge as a leading global space power and realize its vision of **Viksit Bharat 2047**, while expanding its share in the trillion-dollar global space economy.

20. SEAFARER SAFETY IN CONFLICT ZONES

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

During the **G7 Summit 2026 in Evian, France**, Prime Minister Narendra Modi raised concerns with U.S. President Donald Trump regarding the **safety and security of Indian seafarers** working on global maritime routes.

- The issue gained urgency following the **death of three Indian seafarers in a recent U.S. military strike off the coast of Oman** amid escalating tensions in West Asia.
- PM Modi highlighted that **hundreds of thousands of Indian seafarers** are employed in global shipping and maritime trade, including in the strategically important **Strait of Hormuz**.
- He stressed that ensuring their safety is of **paramount importance for India**, given their critical role in international trade and energy transportation.
- PM Modi expressed confidence that the safety of seafarers would receive **high priority** during the implementation of regional peace and security arrangements.

SEAFARERS OF INDIA:

Seafarers are professionally trained personnel who work on ships and other maritime vessels engaged in international trade, coastal shipping, passenger transport, offshore energy operations and fishing and maritime services. They are commonly referred to as **merchant mariners** and form the backbone of global maritime trade.

According to the **Maritime Labour Convention (MLC), 2006**, **a seafarer** is any person who is employed, engaged, or works in any capacity on board a ship to which the Convention applies. This **includes not only navigational crew but also engineers, technicians, catering staff, and other personnel working aboard ships.**

- Around **90% of world trade by volume** is transported by sea.
- Seafarers ensure uninterrupted movement of crude oil, LNG, food grains, manufactured goods and containers
- India is among the **top three suppliers of seafarers globally**.
- India has more than **2.5–3 lakh certified seafarers**.
- Accounts for nearly **12% of the global seafaring workforce**.
- **Legal Protection for Seafarers**
    - **International Maritime Organization:** Global maritime safety regulator.
    - **Maritime Labour Convention (MLC), 2006:** Known as the **"Seafarers' Bill of Rights"**. Ensures decent working conditions, health protection, welfare, repatriation rights
    - **SOLAS Convention, 1974:** Safety of Life at Sea Convention. Establishes ship safety standards.

- **STCW Convention, 1978,** Standards of Training, Certification and Watchkeeping for Seafarers.
- **UNCLOS, 1982:** Guarantees freedom of navigation. Defines maritime rights and obligations.
- **Merchant Shipping Act, 1958:** Principal legislation governing Indian merchant shipping and seafarer welfare.
- **Directorate General of Shipping (DGS):** Apex regulator under the Ministry of Ports, Shipping and Waterways. Responsible for certification, training, welfare and safety standards
- **Information Fusion Centre – Indian Ocean Region (IFC-IOR):** Maritime Domain Awareness centre located in Gurugram. Supports maritime security and threat monitoring.

CORE ISSUES AFFECTING SEAFARER SAFETY:

- **Asymmetric Maritime Warfare:** Modern maritime threats have moved beyond traditional piracy. Merchant ships are increasingly exposed to missile strikes, drone attacks, loitering munitions and naval confrontations. Both state and non-state actors target maritime assets in conflict zones.
  - Attacks on commercial vessels in the **Red Sea** by Houthi rebels.
  - U.S. military strike on **MT Settebello** off Oman resulting in the death of Indian seafarers.
  - Commercial ships are unarmed and lack the capacity to defend themselves against military-grade threats.
- **Geopolitical Crossfire and Maritime Chokepoints:** Many Indian seafarers work in highly sensitive maritime corridors. **Key chokepoints include** Strait of Hormuz, Bab-el-Mandeb Strait, Suez Canal.
  - About one-fifth of global oil trade passes through the Strait of Hormuz.
  - Escalation of tensions between Iran, the U.S., Israel, and regional actors directly threaten merchant shipping.
  - Civilian vessels often become collateral damage despite having no role in geopolitical disputes.
- **Sanctions-Related Vulnerabilities:** A growing number of vessels operate under sanctions regimes. Sanctioned vessels may face loss of Protection & Indemnity (P&I) insurance, restricted access to ports, banking and financial restrictions, increased regulatory scrutiny
  - A vessel sanctioned by the U.S. Office of Foreign Assets Control (OFAC) may continue operating internationally but face operational and financial hurdles.
  - Crew members bear the risks even when they have no role in ownership or cargo decisions.
- **Weak Enforcement of International Maritime Law:** Several international legal frameworks guarantee freedom of navigation and protect labour rights. However enforcement mechanisms remain weak during armed conflicts and non-state actors are often outside the scope of effective international enforcement.
- **Jurisdictional Complexities:** Responsibility for seafarer protection is often fragmented. **Multiple stakeholders** like flag state, coastal state, shipowner, crew nationality and port state
  - Many Indian seafarers work on vessels registered under **Flags of Convenience (FoC)** such as Panama Liberia Marshall Islands
  - When attacks occur, determining responsibility for rescue, compensation, and accountability becomes difficult.
- **Inadequate Risk Disclosure and Consent:** Many seafarers are deployed in war-risk areas without full knowledge of evolving threats. **Industry demand** mandatory disclosure of security risks,

informed consent before deployment and right to refuse assignments in war-risk zones without professional penalties.

- **Economic and Insurance Risks:** Maritime conflicts have significant economic consequences. Higher war-risk insurance premiums. Increased shipping costs. Rising freight charges. Greater costs for energy imports.

WHY IT IS A STRATEGIC CONCERN FOR INDIA?

- **India is a Major Supplier of Global Maritime Workforce:** India is one of the world's leading suppliers of seafarers.
  - India has more than **3 lakh certified seafarers**. Indian seafarers constitute nearly **12% of the global seafaring workforce**. India ranks among the **top three seafarer-supplying nations**, alongside the Philippines and China.
  - Approximately **18,000 Indian seafarers** are estimated to be working in and around the Persian Gulf and Gulf of Oman region at any given time.
- **Critical for India's Trade Security:** India is a maritime nation whose economy depends heavily on sea-borne trade. More than **90% of India's trade by volume** and about **70% by value** is carried through maritime routes.
  - Any disruption to merchant shipping delays supply chains, raises freight costs, impacts exports and imports and increases inflationary pressures.
  - Attacks on commercial vessels in the Red Sea and Gulf region have already forced many shipping companies to alter routes, increasing transportation costs and transit times.
- **Vital for Energy Security:** India is among the world's largest importers of crude oil and LNG.
  - Nearly one-fifth of global oil trade passes through the Strait of Hormuz.
  - A substantial portion of India's crude oil imports transit through this route.
  - Escalating tensions in the Gulf region can threaten tanker movements carrying oil to India, affecting energy availability and prices.
- **Economic and Remittance Contributions:** Indian seafarers contribute significantly to the national economy. Earn valuable foreign exchange. Support thousands of coastal and maritime families. Contribute through remittances from overseas employment.
  - Loss of employment opportunities due to conflict zones or blanket restrictions on deployment would affect household incomes and foreign exchange earnings.
- **Vulnerability Due to Flags of Convenience:** Most Indian seafarers work on ships registered under foreign jurisdictions like Panama Liberia Marshall Islands. When attacks occur India has limited direct jurisdiction.
  - The MT Settebello incident demonstrated how Indian citizens can become collateral victims of geopolitical conflicts involving foreign vessels.
- **Maritime Security and Geopolitical Interests:** India seeks to be a leading maritime power in the Indian Ocean Region. **Policy Frameworks like** SAGAR (Security and Growth for All in the Region), Maritime India Vision 2030, Indo-Pacific Oceans Initiative. Protecting Indian seafarers enhances **maritime credibility, freedom of navigation and** India's role as a net security provider in the Indian Ocean.
  - India's **Operation Sankalp** has involved naval deployments to protect merchant shipping in the Gulf region.

- **Humanitarian and Diplomatic Responsibility:** The Indian state has a constitutional and moral obligation to protect its citizens abroad. Seafarers often work in conflict-prone zones without any role in geopolitical disputes. Their safety has become an important element of India's overseas citizen protection policy.
  - Following the deaths aboard MT Settebello, India lodged a strong diplomatic protest and raised the issue directly with the United States at the highest political level.
- **Rising Threat of Modern Maritime Conflicts:** The nature of maritime threats has evolved to drone attacks, missile strikes, naval blockades, hybrid warfare and sanctions-related vulnerabilities
  - Recent attacks in Red Sea, Gulf of Oman, Strait of Hormuz have shown that civilian merchant ships can become targets despite international legal protections.

WAY FORWARD:

- **Strengthen Maritime Security Presence:** India must enhance its maritime security architecture in vulnerable sea lanes. Expand naval deployments in high-risk areas. Strengthen surveillance through maritime patrol aircraft, satellites, and drones. Increase escort operations for merchant vessels. Enhance rapid-response and hostage-rescue capabilities.
  - **Operation Sankalp**, launched by the Indian Navy in the Gulf region, has protected merchant shipping and ensured freedom of navigation.
- **Mandatory Risk Assessment and Informed Consent:** Seafarers should not be deployed to conflict zones without full awareness of risks. Mandatory pre-deployment security briefings. Real-time threat advisories. Written informed consent before deployment to war-risk zones. Legal protection for seafarers refusing assignments in conflict areas.
- **Strengthen International Cooperation:** Greater cooperation through International Maritime Organization, International Labour Organization, United Nations. Promote multinational maritime security arrangements. Strengthen intelligence-sharing among coastal and flag states.
  - Anti-piracy coordination in the Gulf of Aden significantly reduced piracy incidents.
- **Improve Maritime Domain Awareness:** Strengthen the role of Information Fusion Centre – Indian Ocean Region. Use AI-based vessel tracking systems. Monitor suspicious ship movements and emerging threats.
- **Strengthen Legal and Regulatory Frameworks:** Strengthen enforcement of UNCLOS, 1982, Maritime Labour Convention (MLC), 2006, SOLAS Convention, 1974. Develop international protocols specifically protecting merchant seafarers during armed conflicts. Clarify accountability for attacks on civilian vessels.
- **Enhance Insurance and Compensation Mechanisms:** Increase war-risk insurance coverage. Ensure adequate compensation for injury, disability, or death. Strengthen Protection and Indemnity (P&I) insurance arrangements. Mandate enhanced war-risk allowances.
- **Establish Dedicated Crisis Management Systems**: Create 24×7 emergency helplines. Establish dedicated family support centres. Provide verified updates during crises. Offer psychological and legal assistance.
- **Strengthen India's Inter-Ministerial Coordination:** Agencies involved Ministry of Ports, Shipping and Waterways, Ministry of External Affairs, Indian Navy, Indian Coast Guard, Directorate General of Shipping (DGS), intelligence agencies. Create a permanent **Inter-Ministerial Maritime Security Framework** for coordinated decision-making.

- **Improve Security Standards for Merchant Ships:** Enhanced ship security protocols. Anti-drone and electronic countermeasure systems where feasible. Secure communication equipment. Crew training for conflict-zone navigation.

PRACTICE QUESTION

Q. "The safety of Indian seafarers has emerged as a strategic concern at the intersection of maritime security, energy security, and foreign policy." Examine the challenges faced by Indian seafarers in contemporary maritime conflicts. Suggest measures to enhance their safety and welfare. (15 Marks, 250 Words)

APPROACH

Q. "The safety of Indian seafarers has emerged as a strategic concern at the intersection of maritime security, energy security, and foreign policy." Examine the challenges faced by Indian seafarers in contemporary maritime conflicts. Suggest measures to enhance their safety and welfare. (15 Marks, 250 Words)

Introduction → Start with a stat on importance of seafarers to India

Body → Explain how the safety of Indian seafarers has emerged as a strategic concern at the intersection of maritime security, energy security, and foreign policy

Conclusion → Suggest measures and conclude

MODEL ANSWER

The recent death of three Indian seafarers aboard **MT Settebello** following a military strike in the Gulf of Oman has highlighted the growing vulnerabilities faced by merchant mariners operating in conflict-prone maritime regions. With India contributing nearly **12% of the global seafaring workforce** and over **90% of its trade by volume moving through sea routes**, ensuring seafarer safety has become a critical national concern.

Challenges Faced by Indian Seafarers

- **Asymmetric Maritime Warfare:** Merchant vessels increasingly face Drone attacks Missile strikes Naval confrontations. Examples include attacks in the **Red Sea** and the **MT Settebello** incident.
- **Geopolitical Crossfire:** Indian seafarers frequently operate through strategic chokepoints such as Strait of Hormuz Bab-el-Mandeb Strait Suez Canal. Escalating tensions in West Asia expose civilian vessels to collateral risks.

- **Sanctions-Related Vulnerabilities:** Sanctioned vessels often face Insurance restrictions, Port-access limitations, Financial hurdles. Crew members bear these risks despite having no role in ownership or cargo decisions.
- **Weak Enforcement of International Maritime Law:** Although frameworks such as **UNCLOS**, **MLC 2006**, and **SOLAS** provide protections, enforcement remains weak during armed conflicts.
- **Jurisdictional Complexities:** Many Indian seafarers work on ships registered under **Flags of Convenience** such as Panama and Liberia, complicating accountability and rescue operations.
- **Inadequate Risk Disclosure:** Seafarers are often deployed in war-risk zones without comprehensive threat assessments or informed consent.

Measures to Enhance Seafarer Safety

- Strengthen naval deployments and maritime surveillance under initiatives such as **Operation Sankalp**.
- Mandate pre-deployment risk assessments and informed consent for assignments in conflict zones.
- Enhance intelligence sharing through the **Information Fusion Centre–Indian Ocean Region (IFC-IOR)**.
- Strengthen enforcement of **UNCLOS**, **Maritime Labour Convention (2006)**, and **SOLAS Convention (1974)**.
- Establish an inter-ministerial maritime security framework involving the MEA, Navy, Coast Guard, and Directorate General of Shipping.
- Improve war-risk insurance coverage, compensation mechanisms, and family support systems.
- Promote international cooperation through the **IMO**, **ILO**, and the **United Nations** for protection of civilian mariners.

As India aspires to become a leading maritime power under **SAGAR** and the **Indo-Pacific Oceans Initiative**, protecting its seafarers must become a core component of national security policy. A combination of stronger maritime security, legal safeguards, international cooperation, and welfare mechanisms is essential to ensure that Indian seafarers can continue to sustain global commerce safely and securely.

21. NORTH EASTERN REGION (NER)

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Infrastructure/Security

REFERENCE NEWS:

- Over the past few years, the North-East has witnessed a **remarkable shift in its development landscape.** Driven by policy support, infrastructure expansion and inclusive schemes, improved road, rail, air and digital connectivity has reduced isolation and strengthened economic access.
- Gains in water, sanitation, housing, healthcare and education have improved quality of life, while investments in hydropower, gas infrastructure and cross-border connectivity have made the region central to **India's Act East vision.**
- Known as **"Ashtalakshmi"**, the eight Northeastern states, Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim, represent **India's rich cultural diversity, strategic importance and growing contribution to national prosperity.**

NORTH EASTERN REGION (NER):

- The North Eastern Region (NER) is **culturally and ethnically diverse** having more than **200 ethnic groups** which have distinct languages, dialects and socio-cultural identities.
- The Region covers **7.97% of the country's geographical area and 3.78% of its population.**
- It has **5,484 km of international border** viz. Bangladesh (1,880 km), Myanmar (1,643 km), China (1,346 km), Bhutan (516 km) and Nepal (99 km).
- **The terrain, the state of socio-economic development and historical factors** such as language/ ethnicity, tribal rivalry, migration, control over local resources and long and porous international borders have resulted in a fragile security situation in the North Eastern States.
- This has resulted in **violence, extortion and diverse demands** by various **Indian Insurgent Groups (IIGs)** which maintain safe havens/camps in neighbouring countries. The security situation in NER has improved significantly since 2014.

Source: *Ministry of home affairs.*

SIGNIFICANCE OF NORTH-EAST INDIA:

- **Geo-Strategic Significance:**
  - The North-East is India's land bridge to Southeast Asia and a sensitive border region, making it vital for defence and border management. **For instance,** it shares borders with

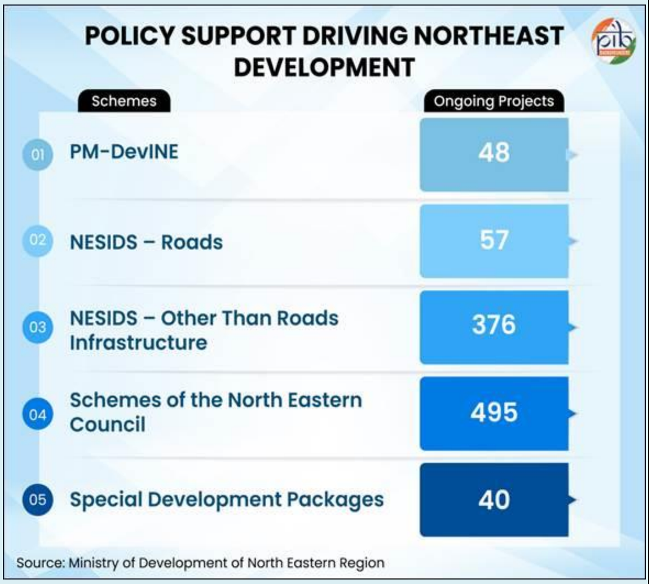
Bangladesh, Myanmar, China, Bhutan and Nepal; the Sela Tunnel strengthens all-weather strategic mobility on the Tezpur–Tawang route.

- **Gateway to Southeast Asia:**
  - The region is central to India's Act East Policy, linking India with ASEAN through trade, connectivity and cultural relations. **For instance,** the India–Myanmar–Thailand Trilateral Highway, Kaladan Multi-Modal Project and Border Haats connect the region with neighbouring countries.
- **Connectivity and Regional Integration:**
  - Better roads, railways, airports, waterways and digital networks are reducing the region's historic isolation. **For instance,** airports increased from 9 in 2014 to 17 in 2026, while National Waterways increased from 1 in 2014 to 20 in 2024.
- **Security and Border Management:**
  - Long porous borders, difficult terrain and ethnic diversity make peace in the region crucial for internal security. **For instance,** the Dhola–Sadiya Bridge connects Assam with Arunachal Pradesh and can carry 60-tonne military tanks.
- **Clean Energy Potential:**
  - The North-East is important for India's green energy transition due to its hydropower and renewable energy potential. **For instance,** the region has 55,930 MW of identified large hydropower potential, with Arunachal Pradesh alone having 50,394 MW.
- **Ecological and Biodiversity Significance:**
  - The region is one of India's richest biodiversity zones with forests, wetlands, mountains and river systems. **For instance,** Kaziranga National Park had 2,613 one-horned rhinos in 2022, around 68% of the global population.
- **Agriculture and Allied Sector Significance:**
  - The region has strong potential in horticulture, organic farming, fisheries, bamboo and forest-based livelihoods. **For instance,** inland fish production increased from 4.03 lakh tonnes in 2014–15 to 6.78 lakh tonnes in 2024–25.
- **Tourism and Cultural Significance:**
  - The North-East's ethnic diversity, natural beauty and cultural heritage make it important for tourism and soft power. **For instance,** the region has more than 200 ethnic groups, and the 2024 International Tourism Mart was held in Kaziranga, Assam.
- **Human Development and Social Inclusion:**
  - Development of the North-East strengthens inclusion of tribal, hill, border and remote communities. **For instance,** Arunachal Pradesh and Mizoram achieved 100% rural tap water coverage, while all eight states have been declared ODF.
- **Economic and Market Significance:**
  - The region can become a hub for organic products, bamboo industries, agro-processing, tourism and border trade. **For instance,** Tripura's agarwood market has an estimated annual potential of around ₹2,000 crore, and nearly 90% of India's agarwood trees are in the North-East.

MAJOR GOVERNMENT INITIATIVES FOR NORTH-EAST INDIA

- **Dedicated Institutional Support:** The government has strengthened North-East-specific development through the **Ministry of Development of North Eastern Region and the North Eastern Council.** These institutions provide focused support for infrastructure, livelihoods, tourism, bamboo, healthcare, higher education, irrigation and flood control.

- **PM-DevINE:** The **Prime Minister's Development Initiative for North East Region** is a **100% centrally funded scheme**. It aims to support high-impact infrastructure, livelihood creation, social development and projects that fill critical developmental gaps in the region.



- **NESIDS:** The North East Special Infrastructure Development Scheme supports infrastructure development in the region.
- **Special Development Packages:** Special Development Packages for Assam and Tripura aim to promote peace, inclusion and development. They focus on employment generation, skill development, women and youth entrepreneurship, tourism promotion and infrastructure creation.
- **Act East Policy:** The Act East Policy places the North-East at the **centre of India's engagement with Southeast Asia.** It aims to transform the region into India's gateway to ASEAN through better connectivity, trade, cultural linkages and border infrastructure.
- **Cross-Border Connectivity Projects: The India–Myanmar–Thailand Trilateral Highway, Kaladan Multi-Modal Transit Transport Project, Integrated Check Posts and Border Haats** aim to strengthen the North-East's links with neighbouring countries and promote trade, mobility and border livelihoods.
- **Road Connectivity Schemes:** Road connectivity has been promoted through **Bharatmala Pariyojana, Pradhan Mantri Gram Sadak Yojana and expansion of National Highways.** These initiatives aim to improve last-mile access, rural connectivity, market linkages and strategic mobility.
- **Rail Connectivity Initiatives:** Railway initiatives in the North-East focus on new railway lines, broad gauge expansion, electrification, station redevelopment and modern passenger services. The larger aim is to **connect remote hill states with the national railway grid.**
- **Air Connectivity under UDAN:** UDAN, or Ude Desh ka Aam Nagrik, seeks to make regional air travel affordable and accessible. In the North-East, it focuses on connecting underserved and unserved airports in remote and difficult terrain.
- **Inland Waterways Development:** The government has promoted inland water transport through **National Waterway-2 on the Brahmaputra and National Waterway-16 on the Barak River.** These initiatives support cargo movement, river tourism and sustainable transport.
- **Digital Connectivity:** Digital connectivity has been expanded through BharatNet and Digital Bharat Nidhi-supported projects. The focus is on high-speed internet, mobile connectivity, digital governance, online education, telemedicine and financial inclusion.
- **Energy Security and Green Growth:** The North-East is being developed as a **clean energy region** through hydropower projects, the North East Gas Grid, solar energy, rooftop solar under PM Surya Ghar, decentralised renewable systems, PM-KUSUM and green hydrogen initiatives.

- **Water, Sanitation and Housing Schemes:** Basic services have been expanded through Jal Jeevan Mission, Swachh Bharat Mission, Pradhan Mantri Awas Yojana-Gramin, Pradhan Mantri Awas Yojana-Urban, Saubhagya and Pradhan Mantri Ujjwala Yojana. These schemes aim to improve water supply, sanitation, housing, electricity and clean cooking fuel access.
- **Health and Education Initiatives:** Healthcare and education have been strengthened through AIIMS Guwahati, Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, Health and Wellness Centres, eSanjeevani, Samagra Shiksha, Eklavya Model Residential Schools, Kendriya Vidyalayas, Navodaya Vidyalayas and Atal Tinkering Labs.
- **Agriculture and Allied Sector Initiatives:** Agriculture and rural livelihoods have been supported through Pradhan Mantri Kisan Samman Nidhi, Pradhan Mantri Fasal Bima Yojana, Pradhan Mantri Matsya Sampada Yojana, Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan, Mission Organic Value Chain Development for North East Region, Van Dhan Vikas Yojana, Geographical Indication tagging, bamboo-sector projects and NERAMAC support.

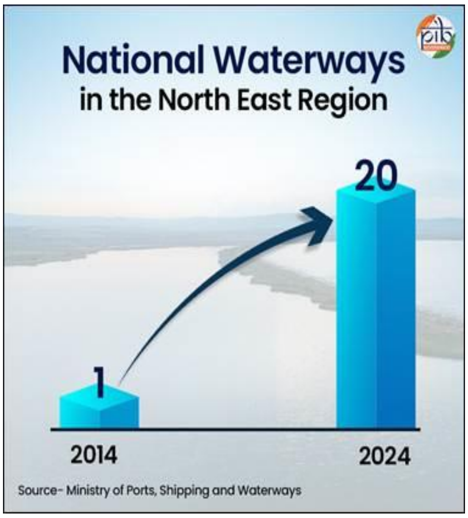
CHALLENGES ASSOCIATED WITH NORTH-EAST INDIA

- **Difficult Terrain and Physical Isolation:** The North-East has hilly terrain, dense forests, large river systems and scattered settlements. This makes road, rail and service delivery difficult and costly. **For instance,** major projects such as the Sela Tunnel, Bogibeel Bridge, Dhola-Sadiya Bridge and Noney Bridge became necessary because ordinary connectivity is difficult in the region's geography.
- **Connectivity Deficit and High Logistics Cost:** Despite recent improvements, many areas still face poor last-mile connectivity and high transport costs. Distance from major markets also affects trade and industrial growth. **For instance,** the expansion of roads, railways, airports, inland waterways and digital networks shows that geographic isolation has historically restricted the region's economic potential.
- **Strategic Vulnerability:** The region shares long international borders with China, Myanmar, Bangladesh, Bhutan and Nepal. This creates challenges of border management, illegal migration, smuggling and security. **For instance,** the Dhola-Sadiya Bridge connects northern Assam with eastern Arunachal Pradesh and is designed to carry 60-tonne military tanks, showing the strategic importance of connectivity in the region.
- **Insurgency and Ethnic Conflicts:** The North-East has faced insurgency and ethnic conflicts due to historical grievances, identity concerns, migration, land issues and competition over local resources. **For instance,** the recent Manipur conflict shows how ethnic tensions can affect peace, governance, internal security and humanitarian conditions.
- **Developmental Imbalance:** Development is not uniform across the region. Some states and urban centres have improved faster, while remote hill districts and border areas continue to face gaps in infrastructure and services. **For instance,** while Arunachal Pradesh and Mizoram have achieved 100% rural tap water coverage under Jal Jeevan Mission, states such as Assam, Manipur and Meghalaya are yet to reach full coverage.
- **Limited Industrial Base:** The region has strong potential in bamboo, organic farming, fisheries, horticulture, tourism and GI products, but industrial growth remains limited due to small markets, poor logistics and weak processing facilities. **For instance,** schemes related to FPOs, cold storage, NERAMAC support and Krishi UDAN show the need to improve value addition and market connectivity for local products.

- **Agricultural Marketing Constraints:** Farmers in the North-East face difficulties in storage, transportation, processing and market access, especially for perishable produce. **For instance,** products such as Queen Pineapple, Lakadong Turmeric, King Chilli and Large Cardamom have GI potential, but they require better branding, processing and export linkages to increase farmer income.
- **Disaster Vulnerability:** The region is highly vulnerable to floods, landslides, earthquakes, riverbank erosion and climate-related disasters. **For instance,** Assam faces recurring floods in the Brahmaputra valley, while hill states such as Meghalaya, Mizoram, Manipur and Arunachal Pradesh are prone to landslides during heavy rainfall.
- **Ecological Fragility:** The North-East is part of a biodiversity-rich and ecologically sensitive zone. Infrastructure expansion, hydropower projects and urban growth can affect forests, rivers, biodiversity and tribal livelihoods. **For instance,** large hydropower projects such as Dibang and Subansiri can support clean energy, but they also require careful management of displacement, biodiversity loss and downstream ecological impacts.
- **Human Development Gaps:** Access to healthcare, education, drinking water, sanitation and digital services remains difficult in many remote areas due to terrain and dispersed settlements. **For instance,** the expansion of Health and Wellness Centres, eSanjeevani, Jal Jeevan Mission and Samagra Shiksha shows the continuing need to reach remote and hilly communities.
- **Digital Divide:** Digital connectivity has improved, but universal access remains difficult due to mountains, forests and scattered habitations. **For instance,** 6,355 Gram Panchayats have been made service-ready for high-speed internet and 3,718 mobile towers have been commissioned, showing both progress and the scale of the remaining challenge.
- **Migration, Identity and Resource Conflicts:** Migration, land pressure and control over local resources often create tensions among communities. These issues are closely linked with ethnic identity, autonomy demands and political representation. **For instance,** conflicts over land, demographic change and local resource control have contributed to unrest in parts of the North-East.
- **Dependence on Public Investment:** The region still depends heavily on government schemes for infrastructure, welfare delivery and livelihood support. Private investment remains limited in many sectors. **For instance,** major interventions such as PM-DevINE, NESIDS, NEC schemes, PMGSY, UDAN, JJM, PMAY, PM-KISAN, PMFBY and MOVCD-NER show that public investment remains the main driver of development.
- **Cross-Border Connectivity Delays:** The North-East's potential as India's gateway to Southeast Asia depends on timely completion of cross-border projects and political stability in neighbouring countries. **For instance,** the India-Myanmar-Thailand Trilateral Highway and Kaladan Multi-Modal Transit Transport Project are crucial for Act East Policy, but their full benefits depend on cooperation and stability in Myanmar.

HOW GOVERNMENT INITIATIVES HAVE IMPROVED THE NORTH-EAST

- **Improved Physical Connectivity:** Government schemes have reduced geographic isolation and improved movement of people, goods and services. **For instance,** under PMGSY, 50,850 km of rural roads have been constructed in the North-East in the last 12 years, improving access to schools, hospitals and markets.



- **Better Rail Integration:** Rail expansion has connected remote and previously inaccessible areas with the national grid. **For instance,** track commissioning increased from 333 km during 2009–14 to over 1,900 km during 2014–26.
- **Strengthened Strategic Infrastructure:** Bridges and tunnels have improved both civilian connectivity and military mobility. **For instance,** the Dhola–Sadiya Bridge connects Assam with Arunachal Pradesh and can carry 60-tonne military tanks, while the Sela Tunnel ensures all-weather connectivity on the Tezpur–Tawang route.
- **Improved Air Connectivity:** Air connectivity has reduced travel time in remote and hilly areas. **For instance,** 8 new airports such as Pakyong, Jorhat and Tezu have been developed, increasing the total number of airports from 9 in 2014 to 17 in 2026.
- **Revival of Inland Waterways:**River transport has promoted cheaper, greener and more sustainable connectivity. **For instance,** National Waterway-2 on the Brahmaputra links Assam with mainland India through the Indo-Bangladesh Protocol route, supporting cargo movement and river tourism.
- **Improved Digital Inclusion:** Digital connectivity has expanded access to online services in remote communities. **For instance,** 6,355 Gram Panchayats have been made service-ready for high-speed internet, while 5,366 villages and locations have been covered through mobile towers.
- **Expansion of Clean Energy:** Hydropower, solar energy and gas infrastructure have improved energy security. **For instance,** the 2,000 MW Subansiri Lower Hydroelectric Project is expected to generate about 7,422 million units of renewable electricity annually, while the North East Gas Grid will create a 1,656 km pipeline network.
- **Better Drinking Water Access:** Jal Jeevan Mission has improved rural household water supply. **For instance,** Arunachal Pradesh and Mizoram have achieved 100% functional household tap water coverage, while Nagaland has reached 95.08%.
- **Improved Sanitation:** Swachh Bharat Mission has improved hygiene and public health. **For instance,** all eight Northeastern states have been declared ODF, and around 57 lakh Individual Household Latrines were constructed between 2014 and 2026.
- **Better Housing and Electrification:** PMAY and Saubhagya have improved living standards through housing and electricity access. **For instance,** over 28 lakh houses have been completed under PMAY-Gramin, and 100% household electrification has been achieved across all eight Northeastern states.
- **Improved Healthcare Access:** Health infrastructure has expanded in both tertiary and primary care. **For instance,** AIIMS Guwahati is fully functional, 12 medical colleges have been approved, and over 46 lakh hospital admissions have been supported under Ayushman Bharat PM-JAY.

- **Expansion of Education and Skills:** Education and skilling infrastructure have improved human capital formation. **For instance,** the region now has 96,496 schools, 79 universities, 1,001 colleges, 110 ITIs and 622 Atal Tinkering Labs.
- **Growth in Fisheries and Livestock:** Government support has strengthened allied sectors and rural incomes. **For instance,** inland fish production increased from 4.03 lakh tonnes in 2014–15 to 6.78 lakh tonnes in 2024–25, while milk production rose to 1,739.9 thousand tonnes in 2024–25.
- **Promotion of High-Value Agroforestry:** Agarwood has emerged as an export-oriented rural livelihood opportunity. **For instance,** India has nearly 150 million agarwood trees, with about 90% located in the North-East, while Tripura's agarwood market has an annual potential of around ₹2,000 crore
- **Strengthened Farmer Welfare:** PM-KISAN, PMFBY, PM-KUSUM and organic farming schemes have improved farmer security and resilience. **For instance,** 26.98 lakh farmers are registered under PM-KISAN, and more than 11.44 lakh beneficiaries were covered under PMFBY in 2025.
- **Promotion of Organic and GI Products:** The region's agro-biodiversity is being converted into economic value. **For instance,** the North-East has 89 GI-registered products, including Queen Pineapple, Lakadong Turmeric, King Chilli and Large Cardamom.
- **Support to Tribal and Forest-Based Livelihoods:** Van Dhan Vikas Yojana has promoted tribal entrepreneurship and value addition in forest produce. **For instance,** the scheme has benefited around 3.3 lakh gatherers and supported 19,155 Self-Help Groups.

WAY FORWARD:

- **Climate-resilient infrastructure:** Roads, bridges, tunnels and railways must be planned with landslide, flood and earthquake risks in mind.
- **Conflict-sensitive governance:** Development should address ethnic concerns, land rights, migration issues and local participation.
- **Boost private investment:** Agro-processing, bamboo, tourism, fisheries and organic products need stronger market and industry linkages.
- **Sustainable connectivity:** Act East projects, waterways and border trade must be completed with ecological safeguards.
- **Human capital focus:** Education, skilling, healthcare and digital access must be deepened in remote hill and border districts.
- **Ecological balance:** Hydropower, mining and infrastructure projects should follow strict environmental and community safeguards.

CONCLUSION:

North-East India is central to India's security, connectivity, biodiversity, Act East Policy and inclusive growth. Its development must therefore combine infrastructure expansion with peace, ecological sensitivity and local empowerment.

PRACTICE QUESTION

Q. The North-Eastern Region of India faces challenges arising from difficult terrain, ethnic diversity, fragile ecology and strategic location. Discuss these challenges and examine how recent government initiatives are improving the situation. (10 marks, 150 words)

APPROACH

Q. The North-Eastern Region of India faces challenges arising from difficult terrain, ethnic diversity, fragile ecology and strategic location. Discuss these challenges and examine how recent government initiatives are improving the situation. (10 marks, 150 words)

Introduction
- Mention recent transformation of North-East as "Ashtalakshmi" due to connectivity, welfare and Act East initiatives.

Body
- Discuss the challenges associated with North-East India
- Examine how recent government initiatives are improving the situation

Conclusion
- Provide way forward and conclude.

MODEL ANSWER

Over the past few years, the North-East has witnessed a remarkable shift in its development landscape. Improved road, rail, air and digital connectivity, along with gains in water, sanitation, housing, healthcare and education, have reduced isolation and strengthened economic access. Known as "Ashtalakshmi", the eight Northeastern states are now central to India's Act East vision and inclusive growth.

Challenges Associated with North-East India:

1. Difficult Terrain and Connectivity Deficit: The region has hilly terrain, dense forests, large rivers and scattered settlements, making infrastructure creation costly and slow. For instance, projects such as the Sela Tunnel, Bogibeel Bridge and Dhola-Sadiya Bridge became necessary because ordinary connectivity is difficult in the region.

2. Strategic and Security Challenges: The region has 5,484 km of international border with Bangladesh, Myanmar, China, Bhutan and Nepal. Long porous borders create issues of illegal migration, smuggling, insurgency and border management. Ethnic diversity, tribal rivalry, migration and control over local resources have also contributed to unrest.

3. Ethnic Conflicts and Identity Issues: The North-East has more than 200 ethnic groups with distinct languages and identities. This diversity, while a strength, can create conflicts over land, autonomy, representation and resources. For instance, the Manipur conflict shows how ethnic tensions can affect peace and governance.

4. Ecological and Disaster Vulnerability: The region is ecologically fragile and prone to floods, landslides, earthquakes and riverbank erosion. Large hydropower and infrastructure projects require careful management to avoid displacement, biodiversity loss and downstream ecological impacts.

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5. Developmental and Economic Gaps: Despite rich potential in bamboo, fisheries, organic farming, tourism and GI products, the region has a limited industrial base, weak processing capacity and high logistics costs. Farmers also face problems of storage, branding and market access.

How Government Initiatives Are Improving the Situation:

1. Connectivity Expansion: PMGSY, Bharatmala, railway expansion, UDAN and inland waterways are reducing isolation. For instance, 50,850 km of rural roads have been constructed under PMGSY, while airports increased from 9 in 2014 to 17 in 2026.

2. Strategic Infrastructure: Bridges and tunnels are improving both civilian access and military mobility. For instance, the Dhola-Sadiya Bridge can carry 60-tonne military tanks, while the Sela Tunnel ensures all-weather connectivity on the Tezpur-Tawang route.

3. Social Sector Improvements: Jal Jeevan Mission, Swachh Bharat Mission, PMAY, Saubhagya, Ayushman Bharat and Samagra Shiksha have improved basic services. For instance, Arunachal Pradesh and Mizoram achieved 100% rural tap water coverage, while all eight states have been declared ODF.

4. Livelihood and Economic Support: PM-KISAN, PMFBY, PMMSY, MOVCD-NER, Van Dhan Vikas Yojana and GI tagging are supporting rural livelihoods. For instance, inland fish production increased from 4.03 lakh tonnes in 2014–15 to 6.78 lakh tonnes in 2024–25.

5. Act East and Cross-Border Integration: Projects such as the India-Myanmar-Thailand Trilateral Highway, Kaladan Multi-Modal Project and Border Haats are transforming the North-East into India's gateway to ASEAN.

Way Forward:

- Build climate-resilient roads, bridges, tunnels and railways.
- Address ethnic concerns through dialogue and local participation.
- Promote agro-processing, bamboo, tourism and organic products
- Complete Act East connectivity projects with ecological safeguards.
- Strengthen healthcare, education, skilling and digital access in remote areas.

North-East India is vital for India's security, connectivity, biodiversity and Act East Policy. Its transformation must combine infrastructure expansion with peace, ecological balance and local empowerment.

22. TERRORISM

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Internal Security >>Role of External State and Non-state Actors in creating challenges to Internal Security.

REFERENCE NEWS:

Operation to locate terrorists in forests of Rajouri are continuing their pursuit of a group of terrorists reported to be holed up in the forests of Rajouri, in the Pir Panjal Valley. An alert has been issued in Poonch district after "suspicious movements" were spotted.

Operation Sheruwali is a major counter-terrorism operation underway in the **Manjakote sector of Rajouri district, Jammu & Kashmir**, targeting terrorists hiding in the dense forests of the **Rajouri–Poonch belt**.

- In recent years, terrorists have shifted from the heavily guarded Kashmir Valley to the forested and mountainous areas of Rajouri and Poonch. These regions have thick forests and rugged terrain, are close to the **Line of Control (LoC)** and offer natural hideouts and infiltration routes.
- The operation was launched to:
  - Locate and neutralize terrorists.
  - Destroy their hideouts and supply networks.
  - Prevent further infiltration from across the border.
  - Restore security in the Pir Panjal region.
- It is a **joint operation** involving Indian Army, Jammu and Kashmir Police, Central Reserve Police Force (CRPF), Intelligence agencies including the Intelligence Bureau. This reflects the modern approach of **multi-agency counter-terrorism**, where intelligence gathering and military action are coordinated.

How is the operation being carried out?

- **Intelligence-Based Search:** The operation began after intelligence inputs indicated the presence of terrorists in the forest area. Security agencies first identified possible hideouts, mapped movement routes and tracked local support networks.
- **Cordon and Search Operations (CASO):** The forces surround the suspected area, seal escape routes and conduct systematic searches. This prevents militants from slipping away through forest trails.
- **Use of Advanced Technology:** Unlike older operations relying mainly on ground patrols, Operation Sheruwali uses drones for aerial surveillance, thermal imagers to detect heat signatures at night, helicopters for reconnaissance and logistics, sniffer dogs to locate hidden camps, weapons, and explosives. This improves operational effectiveness in difficult terrain.
- **Destruction of Terror Infrastructure:** The objective is not merely to eliminate individual terrorists but also to dismantle their ecosystem by targeting hideouts, arms caches, food and supply dumps and communication networks. This weakens the ability of terrorist groups to sustain long-term operations.

TERRORISM IN INDIA:

India's Definition (UAPA, 1967, Section 15): "Any act done with the intent to threaten or likely to threaten the unity, integrity, security, economic security, or sovereignty of India or to strike terror in the people… by use of bombs, firearms, poisonous gases, or any other means."

Terrorism refers to criminal acts intended to cause death or serious injury to civilians with the purpose of intimidating a population or compelling a government or international organisation to act or refrain from acting." Sourced from **UNSC Resolution 1566, 2004**

India continues to face **multidimensional terrorist threats**, cross-border infiltration, urban terror, radicalization, cyberterrorism, and maritime threats making it one of the world's most persistently targeted nations.

- According to the **Global Terrorism Index 2025**, India ranks **14th globally** in terms of the impact of terrorism, reflecting both **a declining trend in incidents** and **the persistence of strategic vulnerabilities**.
- As per **Ministry of Home Affairs (MHA)** data, India recorded around **7,217 terrorist incidents between 2004–2014**, which **declined to about 2,242 incidents during 2014–2024**, marking a **69% reduction** in major terror attacks.
- Despite this decline, incidents like the **April 2025 Pahalgam attack** and the **November 2025 Red Fort car blast** reveal the **evolving nature of terror threats** shifting from large-scale bombings to **urban, symbolic, and tech-enabled attacks**.

Cross-Border Terrorism (Pakistan-Based Threats)

- Pakistan-sponsored groups such as **Lashkar-e-Taiba (LeT)** and **Jaish-e-Mohammed (JeM)** continue to infiltrate through the **Line of Control (LoC)** and international border.
- Intelligence reports indicate **continued proxy operations and infiltration attempts and presence of sleeper cells within the borders**, despite improved fencing and surveillance.
- Over **90% of cross-border attacks in Jammu & Kashmir since 1990** have been attributed to Pakistan-based outfits (*MHA 2024*). India's **counter-terror operations** have reduced infiltration by 65% since 2016, but sleeper cells remain active.

Domestic Radicalization and Ideological Extremism

- Rise of **homegrown extremist cells**, driven by online propaganda and local grievances.
- According to the **Centre for Study of Society and Secularism (CSSS)**, **communal riots rose by 84% in 2024**, with **59 incidents** compared to **32 in 2023**, reflecting the interplay between terror, social division, and communal polarization.
- **White-collar terrorism** involving educated professionals with cyber and financial expertise is an emerging pattern (e.g., **Umar Nabi case, 2025**, linked to LeT).

Decline but Persistence of Insurgencies

- **Left-Wing Extremism (LWE)** incidents have declined by **over 77% since 2010**, and LWE-affected districts reduced from **96 in 2010 to 45 in 2025** (*MHA data*).

- **North-East insurgencies** have sharply reduced after peace accords with **NLFT (Tripura)**, **Bodo**, and **Naga** groups, though **small factions** remain active in Manipur and Nagaland.
- **J&K militancy** remains the focal point of terrorism, now increasingly **hybridized with cyber and drone-based tactics**.

Maritime and Cyberterror Threats

- With **7,500 km coastline**, India faces **maritime terrorism** risks similar to the 26/11 Mumbai attacks.
- In **2024**, the **Indian Navy** intercepted vessels carrying arms through the Arabian Sea indicating renewed efforts by non-state actors to exploit sea routes.
- **Cyberterrorism: CERT-In** and **National Cyber Security Coordinator (2025)** noted **ransomware and phishing campaigns** linked to terror groups. **Drones used by northeastern insurgents (2024–25)** for cross-border supply illustrate **hybrid and tech-enabled threats**.

Urban Terrorism and Symbolic Attacks

- The **Red Fort car blast (2025)** typifies **urban terrorism**, targeting symbolic sites to instill fear.
- Use of **ammonium nitrate-based explosives** and locally assembled devices reflects **shift from rural to urban theatres**.
- Such attacks expose gaps in **urban surveillance, forensic readiness, and crowd intelligence mechanisms**.

Global Dimensions and State-Sponsored Terrorism

- India continues to face **state-sponsored terrorism** from Pakistan, aided by **Chinese diplomatic shielding** at the **UN Security Council (UNSC)**.
- **China vetoed at least 5 Indian proposals (2022)** to blacklist Pakistan-based terrorists under the **UNSC 1267 sanctions list**.
- Despite **Pakistan's FATF grey-listing (2018–2022)**, terror financing networks remain active through **cryptocurrency and hawala routes**.
- **Global Terrorism Deaths** fell **13% in 2024** (7,555 deaths globally), but **Sahel region** became new epicentre indicating terrorism's geographical shift.

<u>**GLOBAL DRIVERS OF RISING TERRORISM:**</u>

Political Instability, Civil Wars & Power Vacuums

- Terrorist organisations thrive in regions with weak governance (UN Global Terrorism Index 2025).
- **Sahel region** became the **epicentre of global terrorism** in 2024, accounting for **over 50%** of global terror deaths.
- State collapse in **Syria, Somalia, Afghanistan** allowed groups like ISIS and Al-Shabaab to expand.

Radicalisation via Digital Media

- Over **90 terrorist groups** use encrypted apps and social media for propaganda (UN Counter-Terrorism Office, 2023).
- ISIS disseminates multi-language content, enabling "lone wolf" attacks **93% of fatal attacks in the West in 2020–24** were lone-wolf incidents.

State-Sponsored Terrorism

- Countries use terror groups as geopolitical tools. **Pakistan's support to LeT and JeM** continues to cause instability in South Asia.
- FATF reports highlight persistent terror financing networks operating through hawala and cryptocurrencies.

Economic Inequality & Marginalisation

- High unemployment, lack of state services, and social exclusion create fertile ground for recruitment.
- Boko Haram and ISIS recruit from impoverished communities in Africa and Middle East.

Ideological and Religious Extremism

- Extremist interpretations and identity-based grievances contribute significantly.
- ISIS remains the **deadliest global terrorist organisation in 2024** (1,805 deaths; GTI 2025).

Weak Global Consensus & Selective Counterterrorism

- China blocked India's proposals to list Pakistan-based terrorists **five times in 2022** at UNSC 1267.
- Global fragmentation reduces coordinated action, enabling terror sanctuaries.

REASONS FOR RISING TERRORISM IN INDIA:

Cross-Border Terrorism from Pakistan

- Pakistan-backed LeT, JeM continue infiltration attempts.
- **Over 90% of terror attacks in J&K since 1990** are attributed to Pakistan-based groups (MHA).
- The **April 2025 Pahalgam attack** and **Red Fort blast (Nov 2025)** show continued proxy operations.

Domestic Radicalisation & Online Extremism

- National Cyber Coordination Centre (NCCC) flagged over **2,000 radicalisation-linked posts in 2024**.
- Arrests of IS-inspired "white-collar" radicals like **Umar Nabi (2025)** show growing sophistication.

Communal Polarisation & Identity Conflicts

- Terror outfits exploit communal divides to fuel domestic extremism.
- India saw **59 communal riots in 2024**, an **84% increase** from 2023 (CSSS dataset).

Technological Enablers: Drones, Crypto & Dark Web

- Drones used for arms dropping along Punjab and J&K borders (BSF, 2024).
- Cryptocurrency channels used for terror financing; cases registered by NIA doubled between 2021–2024.
- The **foiled 2025 UP chemical weapons plot** signals rising ambitions for unconventional terror.

CHALLENGES OF TERRORISM TO THE NATION:

National Security & Strategic Challenges

- **Cross-Border Terrorism:** Pakistan-backed groups such as **LeT and JeM** continue infiltration attempts along the LoC.
- **Hybrid Warfare & Proxy Conflicts:** China–Pakistan nexus uses **terror proxies, cyber tools, drones, and disinformation** to destabilize India. Increased UAV intrusions along Punjab and J&K borders (BSF, 2024).

Social & Communal Harmony Challenges

- **Communal Polarisation:** Terror groups exploit religious fault lines to trigger communal riots. India witnessed **59 communal riots in 2024**, an **84% increase** from 2023
- **Fear and Psychosocial Impact:** Terror attacks create a climate of fear, leading to social fragmentation and mistrust.

Economic Challenges

- **Impact on Tourism & Investment:** Tourism-dependent regions like J&K suffer large losses after major attacks. The 2025 Pahalgam attack led to a decline in tourist arrivals and cancellation of bookings.
- **Cost of Counterterror Security:** India spends billions annually on counterterrorism, border fencing, intelligence, and coastal security. National security budgets for CAPFs increased by over 15% between 2020–24 (MoF).
- **Damage to Infrastructure:** Attacks on railways, communication systems, and power grids strain development.

Technological & Cyber Challenges

- **Cyberterrorism & Online Propaganda:** UNCTC reports over **90 terror groups** use encrypted apps for recruitment. India's National Cyber Security Coordinator (2025) noted rising terror-linked ransomware.
- **Use of Drones and Emerging Technologies:** Drones used by Pakistan handlers for dropping arms and drugs across borders (BSF, 2024).
- **Dark Web Terror Financing:** NIA investigations (2021–24) revealed increased use of cryptocurrency for funding terror modules.

Governance & Intelligence Challenges

- **Coordination Deficits:** Over **20 intelligence agencies** operate with overlapping mandates.
- **Inadequate Capacity of State Police Forces:** Many state police units lack advanced cyber-forensic training. Uneven adoption of AI-based surveillance across states.
- **Legal and Procedural Delays:** Low conviction rates in terror cases due to lack of forensic readiness and procedural loopholes.

Diplomatic & Foreign Policy Challenges

- **Global Double Standards:** China **blocked India's proposals 5 times in 2022** to list Pakistan-based terrorists at UNSC 1267. Western nations often adopt selective definitions of terrorism, affecting cooperation.

- **FATF Grey Listing of Pakistan Not Enough:** Despite Pakistan's grey-listing (2018–22), terror financing networks persist.
- **Geopolitical Complexity:** Terrorism intertwined with Afghanistan instability, Middle East tensions, and global radical networks.

WAY FORWARD:

India requires a **holistic, multi-layered counterterrorism strategy** combining legal, intelligence, technological, diplomatic, and community-based interventions.

Strengthening Intelligence Architecture

- **Create a Statutory Multi-Agency Centre (MAC 2.0):** Convert MAC (currently under IB via executive order) into a **statutory body** with clear mandates. Recommended by **Naresh Chandra Task Force (2012)** and **Ramakrishna Committee on Intelligence (2000)**.
- **Establish National & State Fusion Centres:** Similar to **U.S. Fusion Centers**, integrating real-time data from IB, RAW, NIA, NTRO, NCRB, and state police. Helps in early warning, predictive analysis, and **360° threat mapping**.
- **Strengthen Intelligence Training:** Upgrade Sardar Vallabhbhai Patel National Police Academy & state academies with cyber, drone, crypto, and OSINT modules. **Malimath Committee on Criminal Justice (2003)** recommended modern investigative training.

Technological Modernisation

- **Expand AI, Facial Recognition, and Big Data Analytics:** Use predictive policing tools like Crime and Criminal Tracking Network System (CCTNS), Integrated Criminal Justice System (ICJS), AI-enabled terror hotspot prediction
- **Strengthen Cybersecurity Framework:** Expand **I4C (Indian Cyber Crime Coordination Centre)** for counter-radicalisation monitoring. CERT-In must collaborate with global CT cyber units. Mandatory reporting of crypto transactions to combat terror financing.
- **Anti-Drone Systems Deployment:** Adopt anti-drone technologies used in **NSG's 2025 India–EU counter-drone training**.

Hardening Borders and Maritime Security

- **Smart Fencing & Integrated Surveillance:** Expand **CIBMS (Comprehensive Integrated Border Management System)** along J&K and Punjab borders.
- **Coastal Security Strengthening:** Implement full Phase-III of the **Coastal Surveillance Network**. Improve coordination between Navy–Coast Guard–State Marine Police. Inspired by **Israel's integrated maritime grid**.

Legal and Judicial Reforms

- **Strengthen UAPA Safeguards + Efficiency:** Ensure balance between national security and due process.
- **Improve Conviction Rates:** Invest in forensic labs: DNA, cyber-forensics, explosives analysis. **Malimath Committee** recommended higher forensic capacity, Witness protection and greater interagency coordination

- **Community Policing Models:** Adopt best practices from **Singapore's Religious Rehabilitation Group (RRG), Saudi Arabia's Sakina Program, UK Channel Programme**
- India can expand **Manipur's community vigilance committees, Kerala's Cyberdome surveillance for online radicalisation**

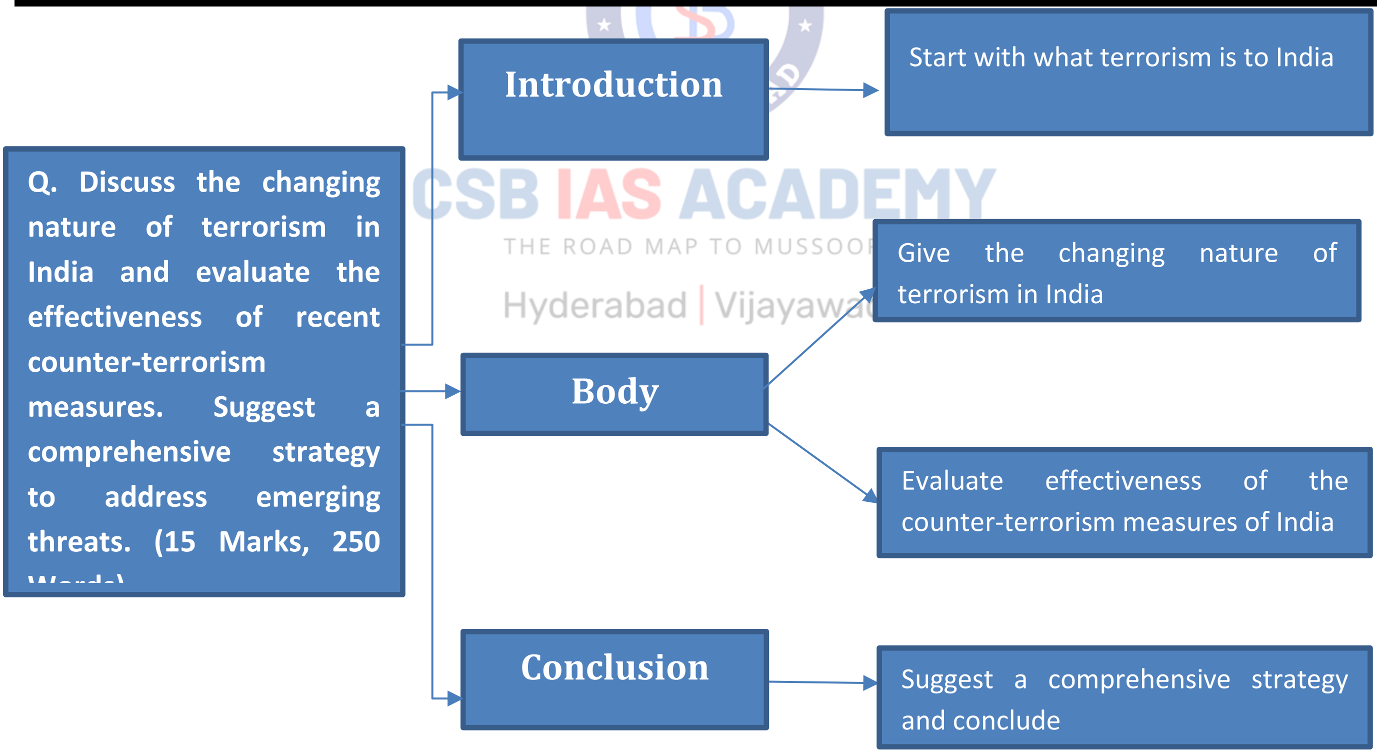
Countering Terror Financing

- **Strengthen Enforcement Directorate (ED) & FIU:** Identify hawala–crypto networks. Comply fully with **FATF recommendations**.
- **Regulation of Crowdfunding, Crypto, NGOs:** Mandatory KYC + audit trails for digital platforms.

PRACTICE QUESTION

Q. Discuss the changing nature of terrorism in India and evaluate the effectiveness of recent counter-terrorism measures. Suggest a comprehensive strategy to address emerging threats. (15 Marks, 250 Words)

APPROACH



MODEL ANSWER

India continues to face complex security threats arising from cross-border terrorism, radicalisation, cyberterrorism, maritime vulnerabilities, and emerging technology-enabled terror networks. While terrorist incidents have declined by nearly 69% between 2014–2024, recent attacks such as the Pahalgam attack (2025) indicate that the threat remains dynamic and evolving.

Changing Nature of Terrorism in India

- **Cross-Border Terrorism Persists:** Pakistan-backed groups such as LeT and JeM continue infiltration attempts through the LoC and international borders.

- **Shift from Large-scale Attacks to Hybrid Warfare:** Terror groups increasingly combine physical attacks with cyber operations, drones and disinformation campaigns.
- **Rise of Home-grown Radicalisation:**Online propaganda and local grievances are facilitating recruitment of self-radicalised individuals.
- **Emergence of White-Collar Terrorism:** Educated professionals with expertise in technology, finance and cyber tools are increasingly involved in terror networks.
- **Increasing Use of Technology:** Terrorists employ drones, encrypted communication platforms, cryptocurrency and the dark web for logistics and financing.
- **Urban and Symbolic Terrorism:** Attacks increasingly target iconic locations and urban centres to maximise psychological impact.
- **Maritime and Cyber Terror Threats:** Vulnerabilities along India's coastline and cyberspace have expanded the scope of terrorism beyond traditional battlefields.

Effectiveness of India's Counter-Terrorism Measures:

- **Significant Reduction in Terror Incidents:** Terror incidents declined by nearly 69% between 2014–2024 compared to the previous decade.
- **Improved Border Management:** Enhanced fencing, surveillance systems and counter-infiltration operations have reduced infiltration attempts.
- **Success Against Left-Wing Extremism:** LWE incidents declined by over 77%, with affected districts reducing significantly.
- **Decline in North-East Insurgencies:** Peace accords with Bodo, NLFT and Naga groups have improved security conditions.
- **Technology-driven Operations:** Operations such as Operation Sheruwali demonstrate effective use of drones, thermal imaging and intelligence-led targeting.
- **Strong Legal and Institutional Framework:** Laws such as UAPA, NIA investigations and specialised anti-terror agencies have strengthened response capabilities.
- **Persistent Gaps Remain:** Coordination deficits among agencies, low conviction rates, cyber vulnerabilities and active sleeper cells continue to challenge effectiveness.

Comprehensive Strategy to Address Emerging Threats:

- **Strengthen Intelligence Architecture:** Establish a statutory Multi-Agency Centre (MAC 2.0) and integrated intelligence fusion centres.
- **Harness Advanced Technology:** Expand AI-enabled surveillance, predictive policing, facial recognition and big-data analytics.
- **Enhance Cyber and Counter-Radicalisation Efforts:** Strengthen I4C, CERT-In and online monitoring to prevent digital radicalisation.
- **Secure Borders and Coastlines:** Expand smart fencing, integrated border management systems and coastal surveillance networks.
- **Strengthen Legal and Forensic Capacity:** Improve forensic infrastructure, witness protection mechanisms and judicial efficiency.
- **Counter Terror Financing and Promote Community Participation:** Crack down on hawala, cryptocurrency networks and strengthen community policing and deradicalisation programmes.

Terrorism in India has evolved from conventional cross-border infiltration to a hybrid threat combining technology, radicalisation, cyber capabilities and proxy warfare. A coordinated strategy integrating intelligence, technology, legal reforms, diplomacy and community participation is essential to ensure long-term national security and resilience.

23. MICRO SMALL AND MEDIUM ENTERPRISES

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

The **Ministry of MSME** will celebrate **MSME Day 2026 – Udyami Bharat** on **27 June 2026** to highlight the critical role of **Micro, Small and Medium Enterprises (MSMEs)** in driving **economic growth, employment, exports, innovation, and inclusive development**. The event will be presided over by the **Vice President of India** and will focus on building a **technology-driven, competitive, and future-ready MSME ecosystem**.

Key Highlights

Strengthening the MSME Ecosystem

- **National Small Industries Corporation (NSIC)** has been upgraded from a **Schedule 'B' to Schedule 'A' CPSE**, reflecting its growing contribution to MSME development.
- **Ponduru Khadi** (Andhra Pradesh) has received the **Geographical Indication (GI) tag**, promoting traditional artisans and rural livelihoods.

Launch of Six Major Digital Platforms

- **PMEGP 2.0 Portal:** End-to-end digital platform for enterprise promotion. Integrated with the **Jan Samarth Portal** for seamless loan processing, sanction and disbursement.
- **SAMADHAAN 2.0 Portal:** Digital platform to report and monitor **pending payments owed to MSMEs** by Ministries, Departments, CPSEs and government agencies. Promotes transparency and timely payment.
- **Procurement and Marketing Support (PMS) Portal:** Paperless platform linked with **Udyam Registration**. Facilitates participation in trade fairs, exhibitions and online reimbursement.
- **MSME Global Mart 2.0:** Integrated with the **Open Network for Digital Commerce (ONDC)**. Enables MSMEs to access domestic and international markets through digital commerce.
- **MSME Testing Portal:** Digitises testing services offered by MSME Testing Centres. Provides online sample booking, payment, tracking and download of test reports.
- **MSME Idea Hackathon 6.0:** Conducted under the **MSME Champions Scheme**. Supports innovation through incubation and mentorship with **financial assistance up to ₹15 lakh per idea**.
- **Launch of E-Books: Coffee Table Book** commemorating **three years of the PM Vishwakarma Scheme**, showcasing successful artisan stories. Book on the **Self-Reliant India (SRI) Fund**, highlighting its contribution to enterprise growth, employment, innovation and women entrepreneurship.

Multilingual Digital Inclusion

- MSME portals will now support **22 Scheduled Indian languages** through **BHASHINI** and **NIC**.
- Features include AI-enabled voice grievance redressal, voice-based navigation, document translation, aims to improve accessibility and digital inclusion.

Promotion of Sustainable Livelihoods

- **KVIC** will launch eco-friendly products including Tukun (Infant Wear) Bela (Infant Wrap Sheets) Rangtaal (Table Runners & Mats) Vanya (Eri Stoles) Umang (Wool Stoles)

Focus on Entrepreneurship

- The event concludes with panel discussions on **Women Entrepreneurship, Growth Capital for Scalable MSMEs.** These discussions will bring together policymakers, industry leaders, financial institutions and entrepreneurs to strengthen MSME competitiveness.

The initiatives mark a shift towards a **digital-first MSME ecosystem** by improving **credit access, market linkages, payment transparency, quality certification, innovation, multilingual accessibility, and ease of doing business**. Collectively, they strengthen MSMEs' role in achieving **Atmanirbhar Bharat**, **Digital India**, **inclusive growth**, and **employment generation.**

MSME SECTOR IN INDIA:

Micro, Small and Medium Enterprises (MSMEs) have become a key driver of India's economy, **fostering entrepreneurship** and creating **significant employment opportunities** with **low capital investment.** It plays a vital role in the country's inclusive industrial development, complementing large industries as ancillary units.

- MSME stands for micro, small and medium enterprises. MSMEs are businesses that produce, process, and preserve goods and commodities.
- These are broadly classified based on their **investment in plant and machinery for manufacturing or equipment for service enterprises, as well as their annual turnover**.

New classification of MSME

Type	INVESTMENT		TURNOVER	
	Current	Revised	Current	Revised
MicroEnterprise	Rs 1cr	Rs 2.5cr	Rs 5cr	Rs 10cr
Small Enterprise	Rs 10cr	Rs 25cr	Rs 50cr	Rs 100cr
Medium Enterprise	Rs 50cr	Rs 125cr	Rs 250cr	Rs 500cr

Source: Budget 2025-2026, Speech of Nirmala Sitharama, Union Minister of Finance February 1, 2025.

- The sector is a critical source of livelihood and provides nearly 111 million jobs.
- With the current emphasis on Atmanirbhar Bharat Abhiyan, these MSMEs have become even more significant to India's economic and financial strategy.
- Acknowledging the importance of the sector, the government of India envisioned that the sector would account for half of India's GDP and add 50 million fresh jobs over the next five years.
- MSMEs contribute to 40% of total exports from India, 45.56% of manufacturing GDP and 30% of GDP (6.11% from manufacturing sector and 24% from services sector)
- It is the 2nd largest employment generator.
- **Rural-Urban Distribution**: Around 51% of these are situated in rural India and 49% of them are situated in urban India.
- 99.5% of all MSME fall in micro category distributed all over. But small and medium are predominantly in urban India
- **Social Distribution of MSMEs:** About 66% of all MSMEs are owned by people belonging to the Scheduled Castes (12.5%), the Scheduled Tribes (4.1%) and Other Backward Classes (49.7%)
- The **gender ratio** among employees is largely consistent across the board at roughly 80% male and 20% female.

- Over **2.09 crore MSMEs** registered on UDYAM portal (as of Jan 2024)

CHALLENGES FACED BY MSME SECTOR IN INDIA:

Structural Challenges:

- **IPR Related Issues:** Limited awareness and enforcement of Intellectual Property Rights.
- **Regulatory Cholesterol:** Bureaucratic hurdles in obtaining government services and approvals like construction permits, contract enforcements, tax payments etc.
  - Out of the 6.3 crore MSMEs only about 1.1 crores are registered with Goods and Services Tax regime
- **Lack of Formalisation Amongst MSMEs:** High number of unregistered MSMEs leading to limited access to formal credit.
  - Almost 93% of MSMEs in manufacturing sector are unregistered as per Economic Survey
- **Lack of Specialised MSME clusters**: Indian MSME sector has a tendency of generalisation than specialisation
  - Chinese cluster exclusive for button manufacturing contributes to over 90% of world button exports
- **Government Policy Challenges:**
  - GST rollout, demonetisation and frequent definition updates and its implementational challenges boost structural issues in MSMEs

Economic Challenges:

- **Credit Conundrum:** Significant gap in credit supply to MSMEs. Only **16%** of MSMEs have access to formal credit; credit gap estimated at **₹25 trillion**.
  - A concerning gap in India's MSME sector has been the credit supply shortage to MSMEs. The formal credit available to this sector is ₹16 trillion. The viable credit gap is ₹20 trillion against a total demand of ₹36 trillion.
- **High Energy Costs:** Inefficiencies and outdated technologies increase operational costs leading to poor competitiveness.
- **Problem of Scale:** Predominance of micro-enterprises limits scalability and growth.
  - Economic survey 2018-19 quoted the phenomenon of Dwarfism in MSME sector
- **Low Market Penetration:** Limited reach compared to cheap imported goods.
  - For example, Chinese plastic toys compared to India's traditional toys like Channapatna toys
- Lack of Greater Budgetary push to MSME Sector:
  - The fact that MSMEs contribute 55% and 60% to the GDP of Germany and China respectively is a clear indication that India still has a long way to go in its MSME journey.

Technological Challenges:

- **Obsolete Technology:** Hindrance in production efficiency and competitiveness. This leads to hindrance in large scale production and further dwarfism in the sector. Over **80%** of MSMEs use outdated technology.
- **Emerging Technologies:** Challenges posed by advancements like AI, data analytics, and robotics.

Social Challenges:

- **Low Marginal Productivity:** Inefficient use of manpower and resources.
  - PLFS reports that only around 13% of Indian workers are formally skilled

- **Quality Assurance and Certification Negligence:** Affects product competitiveness and market acceptance.
    - Indian exports face larger phytosanitary standards and quality checks in international market

Due to these issues, the productivity of small firms in Indian manufacturing is abysmally low relative to larger firms. This has created **a conspicuous 'missing middle'** in the size structure of firms, which deters employment generation and dynamism in Indian manufacturing.

GOVERNMENT INITIATIVES TO BOOST MSME SECTOR:

- **The CHAMPIONS** stand here for Creation and Harmonious Application of Modern Processes for Increasing the Output and National Strength.
    - It is a technology driven Control Room-Cum-Management Information System which utilises modern information and communication technology (ICT) tools.
    - It is also fully integrated on a real time basis with the Government of India's main grievances portal Centralized Public Grievances Redress and Monitoring System (CPGRAMS)
    - Launched by Ministry of Micro, Small and Medium Enterprises (MSME)
- **National Manufacturing Competitiveness Programme**
- **Limited liability partnership Act**,2008 to enable early corporatization of MSME.
- **Udyam Mitra Portal** by SIDBI
- **MSME SAMBANDH**-to monitor implementation of public procurement
- **MSME SAMADHAAN**-to directly register cases of delayed payments by govt.
- **DIGITAL MSME SCHEME**
- **REVAMPED SFURTI**: traditional industries, artisans into clusters
- **CREDIT LINKED CAPITAL SUBSIDY SCHEME**
- **ASPIRE**: A Scheme For Promoting Innovation, Rural Industry And Entrepreneurship
- **PM MUDRA YOJANA**: With recent budget extending loan facility from 10 lakh to 20 lakh
- A credit guarantee scheme for purchase of machinery and equipment without collateral or third-party guarantee.

REFORMS FOR REJUVENATING MSME SECTOR:

Cluster-Based Development Strategy

- Promote **regional MSME clusters** with shared infrastructure and common facility centres.
- Encourage **sector-specific cluster development** (textiles, food processing, automotive, chemicals).
- Support innovation, technology transfer and R&D in clusters through collaboration with academia and industry.

Strengthening Digital and Physical Infrastructure

- Expand **broadband and reliable electricity access** in MSME-dense regions.
- Enable **wider use of Industry 4.0 technologies** (AI, IoT, robotics) with training support.
- Promote digital inclusion through **Digital MSME schemes, skilling programs** for digital literacy and **affordable access to software/tools** (e.g., accounting, CRM)

Formalisation and Ease of Doing Business

- **Simplify UDYAM registration** and integrate it with GSTN, EPFO, and ESIC.

- Ease compliance burden by reducing inspections, introducing single-window clearances and rationalizing taxes and licenses.
- Incentivize informal MSMEs to formalize by offering **benefits like credit linkage, skilling, and subsidies**.

Access to Finance

- **Revamp CGTMSE** (Credit Guarantee Fund Trust for Micro and Small Enterprises) for wider coverage and simplified disbursements.
- Use **Digital Public Infrastructure (DPI)** (like UPI, Aadhaar, GST, TReDS) to build credit histories and assess MSME creditworthiness.
- Mandate timely payment by government buyers and PSUs (within **30–45 days**).
- Promote **invoice discounting platforms (TReDS)** adoption by all large buyers.

Workforce Development and Skilling

- Integrate MSMEs with national skilling schemes like **PMKVY**, **Skill India**, and **PM Vishwakarma Yojana**.
- Encourage **apprenticeship models** in MSMEs through cluster-level facilitation.
- Provide **digital and green skill training** aligned with emerging market demands.

Innovation and R&D Promotion

- Encourage MSME participation in **R&D through tax incentives and funding** (e.g., SIDBI, DST).
- Create **Innovation Hubs** within industrial clusters to foster collaboration with academia.
- Promote the use of **National Research Foundation** support for MSMEs.

Market Access and Branding Support

- Facilitate MSME onboarding on **ONDC** and other e-commerce platforms.
- Promote **local branding**, quality certifications (ISO, FSSAI), and GI tagging.
- Launch **MSME export readiness programs** targeting GVC integration and foreign markets.

Greening the MSME Sector

- Promote **energy-efficient technologies**, **renewable integration**, and **green finance**.
- Build awareness and support for **climate-resilient business practices**.

Improved Governance and Monitoring

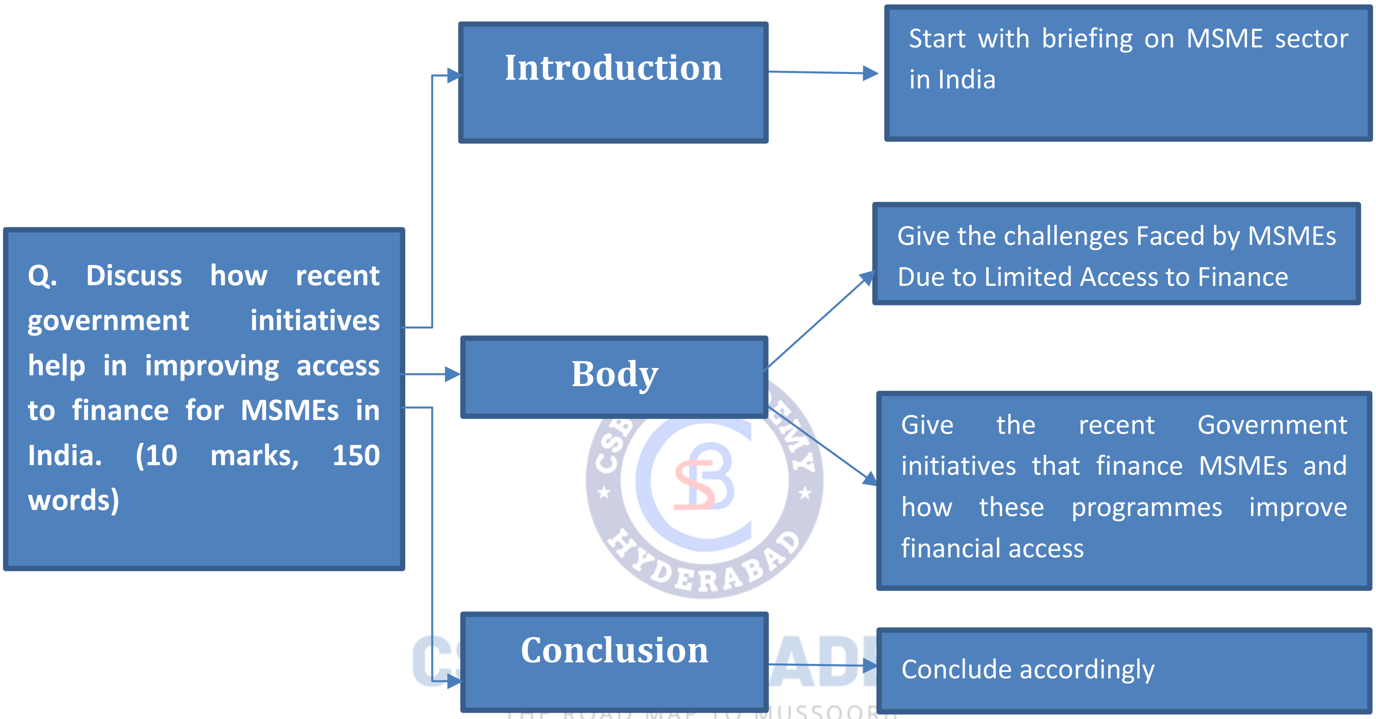
- Strengthen **District Industries Centres (DICs)** as MSME support agencies.
- Set up a **State-level MSME Champion** to monitor implementation, address bottlenecks and drive policy execution.
- Improve **data collection, real-time dashboards, and evaluation metrics**.

Focussing on MSME Sector and prioritising their development is crucial for India's economic trajectory. The vicious cycle of MSME growth can be managed by following the recommendations of **U.K. Sinha Committee.**

PRACTICE QUESTION:

Q. Discuss how recent government initiatives help in improving access to finance for MSMEs in India. (10 marks, 150 words)

APPROACH



MODEL ANSWER

Micro, Small and Medium Enterprises (MSMEs) form the backbone of India's economy, contributing **30% to GDP**, **45% of manufacturing output**, and **over 48% of exports**. As per the **RBI 2023 report**, India's MSME credit gap is estimated at **₹25 trillion**, with nearly **70% of MSMEs dependent on informal sources** of finance.

Challenges Faced by MSMEs Due to Limited Access to Finance

- **High collateral requirements:** Nearly 80% of MSMEs lack property-based collateral, limiting access to bank loans.
- **High interest rates:** Formal credit interest ranges from 12–18%, while informal borrowings can reach 24–36%.
- **Delayed payments:** Large buyers and government entities often delay payments; **MSME Samadhaan portal shows ₹15,000+ crore pending dues**.
- **Limited digital & financial literacy:** Many micro-units struggle with GST compliance, documentation, and credit scoring frameworks.
- **Poor credit history:** Thin credit files restrict access to formal banking and discourage lenders due to higher perceived risk.
- **Low investment in technology:** Financial constraints limit automation and modernisation, reducing competitiveness against global firms.

Recent Government Initiatives Improving Credit Access

- **Expanded Credit Guarantee (CGTMSE):** Ceiling enhanced from **₹5 crore to ₹10 crore**, enabling collateral-free loans at lower risk for banks. Encourages lending to first-generation entrepreneurs.
- **PMEGP Higher Margin Money Subsidy:** Subsidy up to **35%** reduces upfront cost burden and improves project viability for micro units in manufacturing and services.
- **PM Vishwakarma Scheme:** Offers loans up to **₹3 lakh** with **8% interest subvention** for artisans in 18 traditional trades, boosting livelihood-based enterprises.
- **Self-Reliant India (SRI) Fund:** A **₹50,000 crore equity infusion mechanism**, attracting private venture capital and helping MSMEs scale and innovate.
- **TReDS Platform Expansion:** Digital invoice discounting ensures faster cash flow and reduces dependence on informal lenders.
- **Mutual Credit Guarantee Scheme (MCGS):** Provides guarantees for projects requiring loans up to **₹100 crore** for machinery/equipment, widening access for medium enterprises.

Through these programmes, MSMEs can have:

- **Timely payment enforcement:** Strengthen MSME payment rules with strict penal provisions for delayed payments by PSUs and large corporates.
- **Deepened financial literacy:** Expand district-level credit counselling and digital training for micro-enterprises.
- **Alternative financing models:** Promote cash-flow based lending, fintech credit, P2P lending, and Open Credit Enablement Network (OCEN).
- **Stronger credit guarantee coverage:** Expand CGTMSE to include working capital and high-risk innovative start-ups.
- **Strengthening supply chain finance:** Mandatory onboarding of all large buyers on TReDS platforms.
- **Ease of doing business reforms:** Simplify compliance, reduce paperwork, and integrate GST–ITR–Udyam data for automated credit scoring.

Focussing on MSME Sector and prioritising their development is crucial for India's economic trajectory. The vicious cycle of MSME growth can be managed by following the recommendations of **U.K. Sinha Committee.**

24. CLIMATE CHANGE AND INDIA'S RISING COST OF LIVING

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment / Economic Development

REFERENCE NEWS:

- The World Bank has warned that climate change could cost India nearly **2.8% of its GDP by 2050** and reduce living standards for almost **half of its population**. This shows that climate change is no longer only an environmental issue; it is becoming a **direct cost-of-living crisis**, visible in higher food prices, rising electricity bills, water scarcity and increasing health expenditure.

HOW CLIMATE CHANGE IS INCREASING THE COST OF LIVING IN INDIA?

- **Persistent Food Inflation:**
  - Food remains a key channel of **climate-driven inflation**, as food and beverages still carry the **highest weight in the CPI basket**, though reduced from 45.86% to 36.75% in the new series. Hence, **climate shocks to agriculture quickly affect retail prices.**
  - Extreme heat damages crop yields, while delayed or weak monsoons disturb sowing cycles. **For instance**, a **6% rainfall deficit in 2023** reduced the sown area under pulses and oilseeds, while prices of rice, wheat and pulses rose by **6–15% year-on-year**.(Source: Down To Earth)
  - This creates a **chain reaction** of lower yields, supply bottlenecks, hoarding and speculation, making food inflation more persistent. Economists warn that intense heat and weak monsoon conditions **could push inflation above 5%.** (Source: Reuters)
- **Energy Strain and Rising Electricity Bills:**
  - Heatwaves increase the **use of fans, coolers and air conditioners**, raising **electricity demand and stressing the power grid**.
  - **For instance**, during the **May 2026 heatwave**, India's power demand touched a record **270.8 GW**, largely due to cooling needs. To meet such demand, utilities may **use expensive coal and imported fuels**, which can later be passed on to consumers through tariffs or surcharges.
  - For the middle class, this means higher bills; for low-income families, it can mean **cutting expenses on food, health or education.**
- **Water Scarcity and Tanker Economy:**
  - Erratic rainfall and groundwater depletion make **water access more expensive.** Rural wells dry up more often, while many cities face unreliable municipal supply.
  - **For instance, Bengaluru's 2024 water crisis showed this clearly:** weak monsoon rains lowered groundwater and Cauvery basin storage, forcing many households to depend on private tankers. Reuters reported tanker prices rising to around **₹2,000 for a 12,000-litre tanker**, compared to **₹1,200 earlier**.

  - Such tanker dependence creates an **additional financial burden on slums, informal settlements and marginalised communities**, who already have lower access to reliable public water supply.
- **Rising Health Expenditure:**
  - Climate change increases **out-of-pocket health expenditure** through heat stress, poor air quality and climate-sensitive vector-borne and water-borne diseases. For instance, National Health Accounts 2022–23 show **that out-of-pocket expenditure** still accounts for **43.4% of India's total health expenditure.**
  - For informal workers, **every day lost to climate-induced illness means both medical expenses and wage loss**, reducing household income and human capital.
  - For instance, rural women face a heavier burden as they **walk longer distances for water**, work in hotter fields and care for sick family members
- **Unequal Economic Burden:**
  - **Wealthier households** can **invest in adaptive technologies** such as better irrigation, insurance, cooling and private healthcare.
  - Marginalised castes and tribes often **lack access to such adaptation resources.** Hence, climate change acts **like a regressive tax**, penalising those who contributed least to emissions.
  - **For instance**, States such as **Chhattisgarh, Madhya Pradesh, Rajasthan, Uttar Pradesh and Maharashtra** are projected to face sharp declines in living standards, and many of these areas already suffer from agrarian distress and indebtedness.

Government Initiatives to Address Climate-Induced Cost of Living:

National Climate Policy Framework

  - **National Action Plan on Climate Change:** NAPCC provides India's broad climate policy framework through national missions on solar energy, energy efficiency, sustainable habitat, water, Green India, sustainable agriculture and climate knowledge.
  - **State Action Plans on Climate Change:** SAPCCs translate national climate priorities into state-level action on agriculture, water, forests, health, energy, disaster management and urban resilience.
  - **India's NDC 2031–35:** India's updated climate commitment focuses on reducing emissions intensity, expanding non-fossil electricity capacity and increasing carbon sink through forest and tree cover.
  - **LiFE Mission:** Lifestyle for Environment promotes sustainable consumption, resource efficiency and behavioural change to reduce pressure on energy, water and natural resources.

Climate-Resilient Agriculture:

  - **National Mission for Sustainable Agriculture:** It promotes climate-resilient farming through soil health management, water-use efficiency, rainfed-area development and sustainable agriculture.
  - **NICRA:** ICAR's National Innovations in Climate Resilient Agriculture develops climate-resilient crop varieties and location-specific technologies to reduce losses from heat, drought and erratic rainfall.
  - **PMFBY:** Pradhan Mantri Fasal Bima Yojana provides insurance protection against crop losses caused by non-preventable natural risks from pre-sowing to post-harvest

stages.

- **PM-KISAN:** It provides ₹6,000 per year as direct income support to eligible farmer families, helping cushion income uncertainty during agricultural stress.
- **PMKSY:** Pradhan Mantri Krishi Sinchayee Yojana promotes irrigation expansion and water-use efficiency through the idea of "more crop per drop."

Food and Price Stabilisation:

- **Buffer stocks and market intervention:** The government uses buffer stocks, open market sales and market intervention to stabilise food supply and control sudden price spikes.
- **Essential Commodities Act:** It enables regulation of supply, storage and distribution of essential commodities during shortages or inflationary pressure.
- **Export and stock management:** Export restrictions, stock limits and procurement operations are used to protect domestic availability of essential food items.

Cooling and Heat Preparedness

- **India Cooling Action Plan:** ICAP aims to reduce cooling demand, improve energy efficiency, support sustainable cooling and ensure thermal comfort across sectors.
- **Heat Action Plans:** More than 250 cities and districts across 23 heat-prone States have operational Heat Action Plans supported by NDMA advisories and technical mechanisms.
- **Early warning systems:** IMD heatwave forecasts, colour-coded alerts and advisories help governments prepare for extreme heat events.

Health Protection

- **National Programme on Climate Change and Human Health:** NPCCHH monitors heat-related illnesses and climate-sensitive diseases and supports preparedness through the IHIP platform.
- **Ayushman Bharat PM-JAY:** It provides hospitalisation coverage to vulnerable households and helps reduce the burden of major medical expenses.
- **Health infrastructure strengthening:** Public health surveillance, heat illness reporting, hospital preparedness and awareness campaigns are being used to reduce climate-linked health risks.

Water Security and Urban Resilience

- **Jal Jeevan Mission:** It aims to provide functional household tap connections and improve rural drinking water access.
- **AMRUT:** It supports urban water supply, sewerage, drainage, green spaces and basic infrastructure in cities.
- **Atal Bhujal Yojana:** It promotes community-led groundwater management in water-stressed areas.
- **Watershed and recharge programmes**

Energy Security and Affordability

- **PM-KUSUM:** It promotes solar pumps and decentralised solar energy, reducing farmers' dependence on diesel and costly electricity for irrigation.
- **PM Surya Ghar Muft Bijli Yojana:** It promotes rooftop solar power for households, helping reduce electricity bills and improve distributed clean energy access.
- **Renewable energy expansion:** Solar, wind, green hydrogen and battery storage improve long-term energy security and reduce dependence on expensive fossil fuels.

Income and Livelihood Support

- **MGNREGA:** It provides rural wage employment and can act as a livelihood cushion during droughts, crop losses and rural distress.
- **Self-help groups and rural livelihood missions:** These support income diversification, women's livelihoods and local resilience in climate-vulnerable areas.

- **Disaster relief and SDRF:** States can use SDRF resources for notified and certain local disasters, providing limited relief during extreme weather events.

CHALLENGES IN ADDRESSING INDIA'S CLIMATE-INDUCED COST OF LIVING:

- **Statutory and legislative gaps: Heatwaves are still not included in the centrally notified disaster list** for SDRF/NDRF assistance, though frost and cold waves are included. This restricts central relief support for heat-related losses. States can use **only up to 10% of SDRF for locally notified disasters such as heatwaves**, creating a funding gap despite rising extreme-heat risks
- **Short-term price control approach:** The **Essential Commodities Act, 1955** allows stock limits, export restrictions and supply regulation during price spikes. However, these measures mainly address **short-term inflation** and **do not solve climate-induced supply disruptions** behind repeated food price rise.
- **Weak cooling and housing regulation:** India Cooling Action Plan provides a useful roadmap for sustainable cooling, but it is **not legally binding**. There is **no strict requirement for low-income housing to include heat-resistant roofs, shading, cross-ventilation and cool materials.** For instance, many poor households live in dense concrete settlements that trap heat, increasing dependence on fans and coolers and pushing up electricity bills.
- **Scheme-level limitations:** PMFBY provides crop insurance, but notified-area or village-level assessments **may miss highly localised crop damage caused by heatwaves, hailstorms or erratic rainfall.** For instance, a farmer may suffer crop loss in one village pocket, but if the wider notified unit does not show sufficient yield loss, compensation may remain limited. Similarly, PM-KISAN provides ₹6,000 annually, but the amount is fixed and not linked to inflation or climate-related crop losses.
- **Labour protection gaps:** India lacks a **uniform statutory heat allowance or wage compensation mechanism** for outdoor and informal workers during extreme heat. For instance, construction workers, street vendors and farm labourers often face a difficult choice between losing wages and working in unsafe heat conditions.
- **Water governance gaps:** Water scarcity is worsened by poor regulation of emergency water supply. In cities, **private tanker markets** often operate with limited price control during shortages. For instance, **Bengaluru's 2024 water crisis** forced many households to depend on expensive private tankers, showing how climate stress and weak municipal supply increase household costs.
- **Healthcare coverage gaps:** Climate change increases heat stress, respiratory illness, water-borne diseases and vector-borne diseases. However, Ayushman Bharat PM-JAY mainly covers hospitalisation, while many climate-linked illnesses require OPD visits, medicines and follow-up care. For instance, heat exhaustion or climate-sensitive diseases **may not require hospital admission but still impose medicine, consultation and wage-loss costs on poor households.**
- **Weak Heat Action Plans:** Many Indian cities and districts now have Heat Action Plans, but they often **lack statutory backing, dedicated budgets and enforceable obligations.** For instance, without funds for cooling shelters, drinking water points, worker protection and heat-resilient housing, HAPs risk remaining paper plans.
- **Institutional fragmentation:** Climate-induced cost of living cuts across agriculture, power, water, health, housing and labour, but policies remain departmental. For instance, food inflation is treated as a price issue, heatwaves as a disaster issue and water scarcity as a municipal issue, even though all are linked to climate change.

WAY FORWARD:

- **Recognise heat as an economic risk:** Heatwaves should be given stronger disaster-financing support, with clearer access to relief funds for affected workers, farmers and vulnerable communities.
- **Climate-index welfare schemes:** Support under schemes like PM-KISAN, crop insurance and social protection programmes should be linked to inflation, crop loss intensity and extreme weather events.
- **Strengthen climate-resilient agriculture:** India must expand drought-resistant seeds, micro-irrigation, crop diversification, natural farming and local storage systems to reduce climate-driven food inflation.
- **Make cooling affordable and sustainable:** India Cooling Action Plan should be backed by enforceable building norms, especially for low-income housing, with passive cooling, cool roofs and better ventilation.
- **Protect informal and outdoor workers:** Heat safety rules should include work-hour changes, shaded rest spaces, drinking water, health alerts and wage protection during extreme heat.
- **Regulate emergency water markets:** Cities should regulate tanker prices during shortages, strengthen municipal water supply, revive lakes and expand groundwater recharge.
- **Expand climate-health protection:** Public health systems must cover heat illness, vector-borne diseases, OPD care, medicines and wage-loss risks, especially for informal workers and women.
- **Improve coordination:** Food inflation, water scarcity, heatwaves and health risks should be addressed through integrated climate-cost planning involving agriculture, health, power, labour and urban departments.

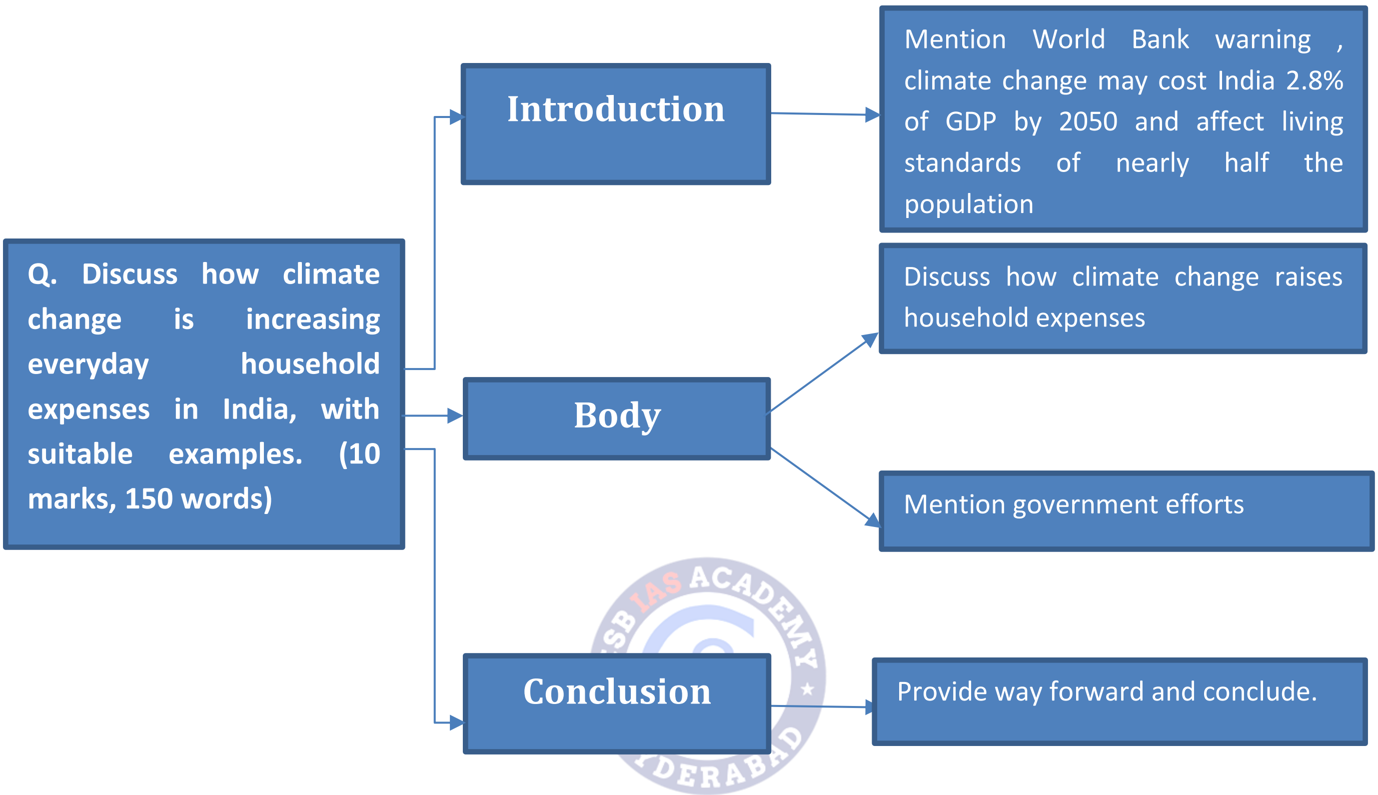
CONCLUSION:

- Climate change is no longer only an environmental challenge for India; it is becoming an everyday economic burden. Reducing its cost-of-living impact requires climate-resilient development that protects food, water, health, energy access and livelihoods together.

PRACTICE QUESTION

Q. Discuss how climate change is increasing everyday household expenses in India, with suitable examples. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The World Bank has warned that climate change could cost India **nearly 2.8% of its GDP by 2050 and reduce living standards for almost half of its population**. This shows that climate change is no longer only an environmental issue; it is increasingly becoming a cost-of-living crisis affecting food, electricity, water, health and livelihoods.

How Climate Change Raises Household Expenses:

1. **Food inflation:**
   - Extreme heat, delayed monsoons and erratic rainfall reduce crop yields and disturb sowing cycles. Since food and beverages still carry the highest weight in the CPI basket, climate shocks quickly affect retail prices.
   - **For instance**, **a 6% rainfall deficit in 2023** reduced sown area under pulses and oilseeds, while prices of **rice, wheat and pulses rose by 6–15% year-on-year.**
2. **Energy costs:**
   - Heatwaves increase the use of fans, coolers and air conditioners, raising electricity demand and stressing the power grid.
   - **For instance**, during the **May 2026 heatwave**, India's power demand touched **270.8 GW.** Higher generation costs may be passed on to consumers through tariffs and surcharges.
3. **Water costs:**
   - Erratic rainfall and groundwater depletion make water access expensive. In cities, weak municipal supply increases dependence on private tankers. **Bengaluru's 2024 water crisis** showed how tanker dependence adds a direct financial burden on households, especially slums and informal settlements.

4. **Health expenditure:**
    - Climate change increases heat stress, respiratory illness and vector-borne diseases. National Health Accounts 2022–23 show that **out-of-pocket expenditure forms 43.4% of total health expenditure.** For informal workers, illness means both medical expenses and wage loss.
5. **Unequal burden:**
    - Wealthier households can afford ACs, private healthcare, insurance and water tankers, while poorer households cope through debt, migration or reduced spending. Thus, climate change acts like a regressive tax on vulnerable communities.

Government Initiatives:

- **Climate framework:** NAPCC, SAPCCs, India's NDCs and LiFE Mission provide the broad policy framework for climate resilience.
- **Agriculture support:** NMSA, NICRA, PMFBY, PM-KISAN and PMKSY aim to support climate-resilient farming, crop insurance, income support and irrigation efficiency.
- **Cooling and health preparedness:** India Cooling Action Plan, Heat Action Plans, IMD alerts and the National Programme on Climate Change and Human Health address heat and health risks.
- **Water and energy security:** Jal Jeevan Mission, AMRUT, Atal Bhujal Yojana, PM-KUSUM and rooftop solar schemes seek to reduce water and energy vulnerability.

Way Forward:

- Link welfare support with inflation, crop loss and climate shocks.
- Expand drought-resistant seeds, micro-irrigation and local food storage.
- Make passive cooling mandatory in low-income housing.
- Regulate private tanker prices during water crises.
- Provide heat safety rules, shaded rest spaces and wage protection for outdoor workers.
- Expand OPD and medicine support for climate-linked illnesses.
- Improve coordination across agriculture, power, water, health, labour and urban departments.

Climate change is silently raising India's everyday expenses while reducing household incomes. A climate-resilient India must therefore protect food security, water access, health, energy affordability and livelihoods together.

25. TELECOM SECTOR IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

TRAI has released the **"Indian Telecom Services Performance Indicator Report"** for the Quarter ending 31st March, 2026. This Report provides a broad perspective of the Telecom Services in India and presents the key parameters and growth trends of the Telecom Services as well as Cable TV, DTH & Radio Broadcasting services in India for the period covering 1st January, 2026 to 31st March, 2026 compiled mainly on the basis of information furnished by the Service Providers.

Key Telecom Trends

- Total telephone subscribers increased from **1,306.14 million to 1,330.58 million**, registering **1.87% quarterly growth**.
- **Overall tele-density rose from 91.74% to 93.26%.**
- Rural tele-density increased from **59.63% to 60.46%**, indicating continued digital penetration in rural areas.

Internet and Broadband Growth

- **Total internet subscribers increased by 6.24%, reaching 1,092.79 million.**
- Broadband subscribers rose to **1,065.88 million**, accounting for nearly the entire internet subscriber base.
- Wireless internet dominates with **1,046.26 million subscribers**, compared to **46.54 million wired subscribers**.
- **Internet penetration reached 76.59 subscribers per 100 population.**

Wireless Sector

- Total wireless subscribers (mobile + FWA) reached **1,282.33 million**, with a net addition of **23.56 million users** during the quarter.
- **Wireless tele-density increased to 89.88%.**
- Average wireless data consumption stood at **26.7 GB per subscriber per month**, reflecting rising digital usage.

Financial Performance

- Telecom sector **Gross Revenue (GR)** increased to **₹1.05 lakh crore**, while **Adjusted Gross Revenue (AGR)** rose to **₹86,716 crore**.
- Monthly **Average Revenue Per User (ARPU)** increased to **₹196.04**, indicating improved monetisation by telecom operators.

Quality of Service (QoS)

- Telecom operators broadly complied with TRAI benchmarks on:
  - Call setup success rates
  - Network availability
  - Broadband speeds
  - Customer grievance redressal
  - Billing standards

Broadcasting and Media Sector

- India had **917 permitted private satellite TV channels**, including **342 pay channels**.

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- Pay DTH subscriber base declined slightly to **49.05 million**.
- Private FM radio expanded to **390 operational channels across 120 cities**.
- **564 community radio stations** were operational as of March 2026.

The report highlights India's continued progress toward a **digitally connected economy**, driven by rapid broadband expansion, rising rural connectivity, growing data consumption, and improving telecom sector revenues.

TELECOM SECTOR IN INDIA:

Over the last two decades, India's telecom sector has transformed from a **luxury-driven service to a mass public utility**, becoming the **second-largest telecom market in the world**. Today, it caters to **over one billion users** and contributes nearly **6% to India's GDP**, underlining its strategic importance to the economy.

- **2000**: Seamless connectivity was a luxury, restricted to urban elites.
- **2001**: Tele-density stood at merely **3.5 connections per 100 people**.
- **2024**: Tele-density surged to **85.6%**, reflecting near-universal access.

This expansion has been driven by **policy liberalisation, private participation, technological innovation and affordability**, fundamentally reshaping communication, governance and economic activity.

- **Data Consumption and Infrastructure Expansion**
  - **Wireless data cost**: Reduced to **₹8.31 per GB (2024)**: among the lowest globally.
  - **Average monthly data usage**: **21.30 GB per subscriber (June 2024)**: a **353-fold increase** since the early 2010s.
  - **Mobile base stations**: **29.4 lakh** (November 2024), reflecting strong infrastructure growth.
  - **FDI inflows**: **USD 670 million (2024-25)**, indicating rising investor confidence.
- **Rapid 5G Rollout**
  - India has achieved **one of the fastest 5G rollouts globally**
  - **767 out of 778 districts** are already connected.
  - This has significantly enhanced **network efficiency, speed and digital service delivery**.
- **Global Digital Standing**
  - **Network Readiness Index (NRI) 2024**: India climbed **11 positions** to rank **49th**.
  - **Global Cybersecurity Index (GCI) 2024**: India achieved **Tier-1 status**, reflecting robust cybersecurity frameworks.
- **Telecommunication Act, 2023:** Replaced colonial-era laws (1885, 1933). Introduced:
  - Simplified authorisation framework
  - Clear spectrum assignment norms
  - Efficient Right of Way (RoW)
  - National security and public emergency provisions
  - **Digital Bharat Nidhi**, regulatory sandboxes
  - Two-tier adjudication mechanism and user protection
- **Infrastructure Facilitation**
  - **GatiShakti Sanchar Portal**: Single-window RoW approvals across **36 States/UTs. 3.23 lakh approvals** for towers and OFC since inception
  - **National Master Plan (NMP)**: Used for 4G saturation in uncovered villages

- **Pan-India Cell Broadcasting (CB)**: Covers nearly **80% of networks**. Enables targeted disaster and emergency alerts
- **PM-WANI**: Expands public Wi-Fi, especially in rural areas
- **Bharat 6G Vision (2030)** and **Bharat 6G Alliance**: Positions India as a **global 6G leader**

SIGNIFICANCE OF THE TELECOM SECTOR IN INDIA:

- **Driver of Economic Growth:** Telecom contributes **~6% to GDP** and supports allied sectors such as IT, fintech, logistics and e-commerce. Stable connectivity reduces transaction costs and boosts productivity.
- **Instrument of Digital Inclusion:** Low-cost data and smartphones have bridged the **digital divide** between rich and poor. Telecom enables access to education, healthcare, banking and governance services. Data cost at **₹8.31/GB** has made India one of the **cheapest data markets globally**.
- **Backbone of Digital India:** Telecom underpins all four pillars of **Digital India** affordable devices, nationwide connectivity, low-cost data, digital-first governance. Direct Benefit Transfers (DBT), Aadhaar authentication and DigiLocker depend on reliable telecom networks.
- **Catalyst for Financial Inclusion:** Mobile connectivity has driven **digital payments and fintech expansion**. Telecom enables last-mile financial access through mobile banking and UPI. UPI transactions rose from **92 crore (2017-18)** to **8,375 crore (2022-23)**, enabled by telecom penetration.
- **Enabler of Education, Health and Work:** During COVID-19, telecom enabled **remote work, online education, telemedicine.** Continues to support hybrid models in post-pandemic India. Online learning platforms and e-health services rely on mobile broadband penetration.
- **Strategic and National Security Importance:** Telecom networks are critical infrastructure. **Tier-1 ranking in Global Cybersecurity Index (2024)** reflects India's strengthened digital security posture. Cell Broadcasting enhances **disaster preparedness and public safety**.
- **Platform for Future Technologies:** 5G and upcoming 6G will enable smart cities, IoT, Industry 4.0. India's goal of **100 crore 5G subscribers by 2030** reflects readiness for next-generation digital transformation.

6 STRATEGIC MISSIONS OF NATIONAL TELECOM POLICY:

Universal and Meaningful Connectivity	Domestic-Manufacturing Mission	Secure and Trusted Telecom Network
○ **100% 4G coverage & 90% 5G coverage by 2030.** ○ Fiberisation of **80% telecom towers** and **all Gram Panchayats** with 98% uptime under BharatNet. ○ Provide **fixed-line broadband to 10 crore households**. ○ Expand connectivity in **unserved/underserved areas** using **satellite,**	○ **Increase telecom manufacturing output by 150%**. ○ Achieve **50% import substitution** for telecom products. ○ Establish **Telecom Manufacturing Zones** with integrated infrastructure. ○ Incentivise **operators to adopt indigenous equipment**. ○ Harmonise **Indian**	○ Create **National Telecom SafeNet** for network protection. ○ **Biometric-based user identification** for telecom subscribers. ○ Reduce **cyber incident response time by 50%**. ○ Conduct **regular cybersecurity audits** of telecom networks. ○ Establish **Satcom Monitoring Facility** to detect unauthorized

Non-Terrestrial Networks (NTN), and submarine cables. ○ Deploy **1 million public Wi-Fi hotspots**. ○ Increase **fiberised towers** from **46% to 80%**.	**telecom testing standards with global norms**. ○ Develop **industry-aligned courses** in AI, 5G/6G, IoT, cybersecurity.	interference. ○ Align **NTN policy** with **Indian Space Policy 2023**. ○ Enable **Ground Station-as-a-Service (GSaaS)** from India. ○ Set up **Satcom use-case labs** for socio-economic applications. ○ Strengthen **international engagement** (ITU) to secure **orbital slots & spectrum sustainability**. ○ Introduce **mobile number validation services** for secure banking, insurance, e-governance, etc.
Innovation Mission ○ Make **spectrum available for R&D** with minimal compliance. ○ Establish **regulatory sandboxes** for emerging technologies. ○ Allow **experimentation in Terahertz bands for 6G**. ○ Transform **C-DOT into a global telecom R&D hub**. ○ Launch **Technology Readiness Level funding** & enable **IPRs as collateral for financing**.	**Ease of Living & Ease of Doing Business** ○ Simplify **regulatory frameworks & licensing**. ○ Light-touch authorisation for **submarine cables & Satcom services**. ○ Improve **Right of Way clearances** and **spectrum allocation process**. ○ Promote **hybrid access** (Mobile, FWA, FTTH, Satellite, Wi-Fi).	**Sustainable Telecom Mission** 1. Reduce **telecom sector carbon footprint by 30% by 2030**. 2. Promote **renewable energy use in telecom infra**. 3. Ensure **e-waste management & circular economy models** for telecom equipment.

CHALLENGES OF INDIA'S TELECOMMUNICATIONS:

- **Digital Divide & Uneven Connectivity:** As per TRAI (2024), **rural tele-density is ~60% vs urban ~130%**, and **only 37% of villages have reliable 4G**.
- **Low Fiberisation & Infrastructure Gaps:** India has only **46% telecom towers fiberised** compared to **80-90% in developed nations**, leading to poor backhaul for 5G/6G. BharatNet Phase II fiberisation delays caused **slow broadband penetration in 1.3 lakh Gram Panchayats**.
- **High Spectrum Costs & Policy Uncertainty:** Spectrum pricing in India is among the **highest globally**, burdening telecom operators. In the **2022 5G auction**, spectrum rates were **7x higher than global average**, forcing operators to increase tariffs.

- **Financial Stress on Telecom Operators:** AGR (Adjusted Gross Revenue) dues & hyper-competition led to **operator exits & consolidation**. **Vodafone-Idea faces ₹2 lakh crore debt**, leaving the sector with **only 3 major players (Jio, Airtel, Vi)**.
- **Low Fixed Broadband Penetration:** India relies heavily on mobile data, with **limited FTTH (Fiber-to-the-Home)** access. Broadband penetration is **<10% households**, compared to **50–70% in OECD nations**.
- **Cybersecurity & Network Trust Issues:** Rising **cyber frauds, spyware attacks, and cross-border network spillage** threaten telecom security. In 2023, **1.2 lakh cyber fraud cases** were linked to misuse of mobile numbers & telecom networks.
- **Low Domestic Manufacturing & Import Dependence:** Heavy reliance on imported telecom equipment (esp. from China). India imports **80% of telecom gear**, causing a **$7 billion trade deficit** in 2023.
- **Satcom & Spectrum Coordination:** Lack of **clear satellite communication policy** slows Satcom deployment for rural connectivity. Disputes over **low-earth orbit satellite spectrum** delayed approvals to wider participation.
- **Environmental & Right of Way (RoW) Issues: High RoW charges by states** delay tower installation & fibre rollout. 2024 TRAI report noted **RoW clearance delays of 6–12 months** in states like Maharashtra & UP.
- **Affordability & Device Access:** 5G/6G devices remain expensive for low-income users, widening digital inequality. Only **18% smartphone users** have 5G-enabled devices (TRAI 2024).

WAY FORWARD:

Bridge the Digital Divide & Improve Connectivity

- **National Digital Communications Policy (NDCP) 2018** – aimed for **50 Mbps broadband access to every citizen**.
- **Srikrishna Committee on Data Protection (2018)** – stressed on **secure, equitable digital access**.
- **Australia's National Broadband Network (NBN)** used **hybrid fibre, satellite, and fixed wireless** to cover remote areas.

Reduce Spectrum Costs & Policy Uncertainty

- **TRAI (Telecom Regulatory Authority of India)** suggested **rationalized spectrum pricing** in 2022.
- **Union of India v. Association of Unified Telecom Service Providers (2011)** – Supreme Court's 2G spectrum verdict emphasized **transparent spectrum allocation**.

Strengthen Domestic Manufacturing & R&D

- Expand **PLI Scheme for telecom gear** and incentivize **design-led manufacturing**.
- Establish **Telecom Manufacturing Zones (TMZ)** and align Indian testing with global standards.
- **Satyanarayana Committee (2012)** – pushed for **domestic telecom manufacturing ecosystem**.
- **China's "Made in China 2025"** integrated R&D, manufacturing, and state incentives for telecom self-reliance.

Improve Financial Health of Operators

- Rationalize **Adjusted Gross Revenue (AGR)** definition.

- **NDCP 2018** suggested a **light-touch regulatory regime** to reduce compliance costs.
- **Vodafone Idea AGR Case (2020)** – SC ruling on AGR dues highlighted the need for **policy clarity to avoid retrospective liabilities**.

Enhance Cybersecurity & Trusted Networks

- **Nandan Nilekani Committee on Digital Payments (2019)** – stressed **robust telecom cybersecurity frameworks**.
- **EU's 5G Toolbox** approach restricts high-risk vendors while ensuring interoperability.

Streamline Right of Way & Regulatory Approvals

- **B.N. Srikrishna Committee on Net Neutrality** – recommended **uniform state policies** for telecom infra rollout.
- **Bharti Airtel Ltd. v. State of Chhattisgarh (2016)** – HC upheld **telecom infra as essential service**, urging easier clearances.

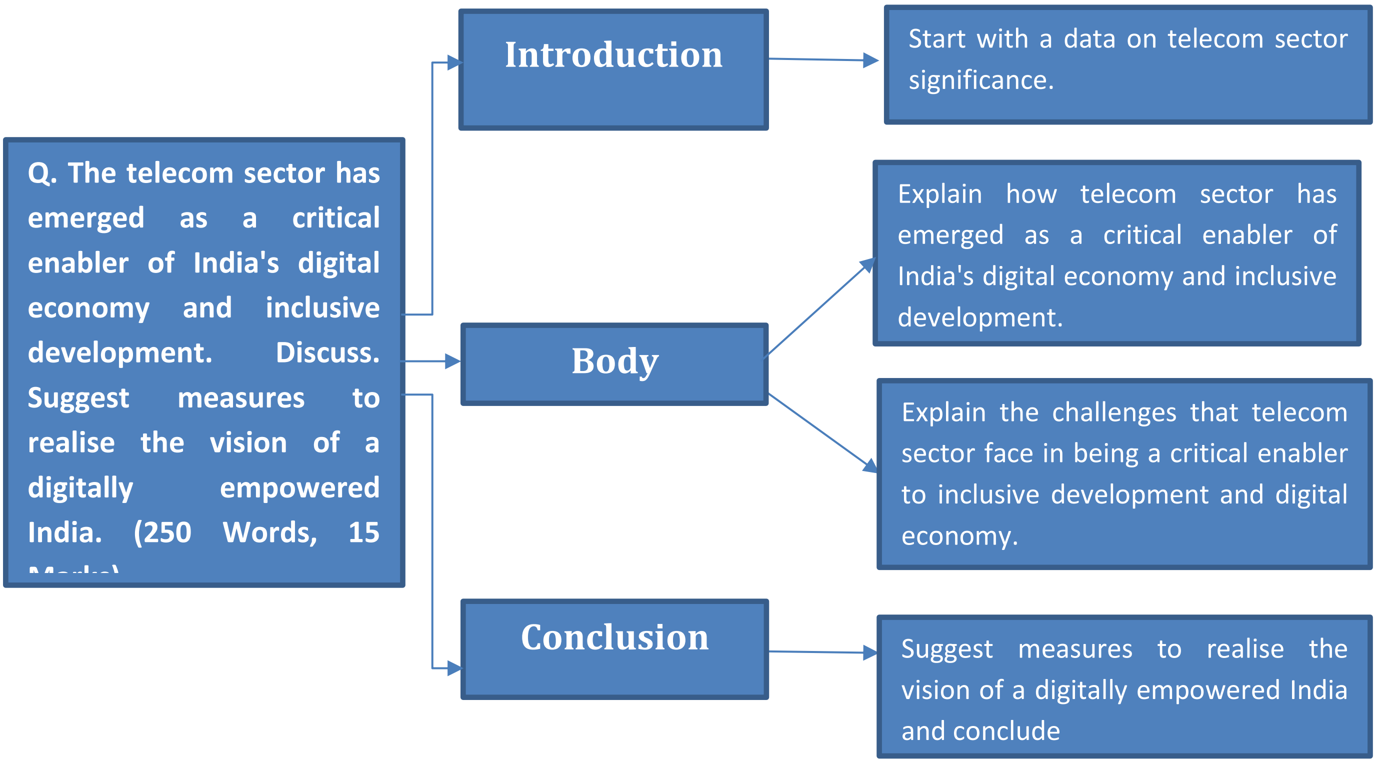
Make Telecom Sustainable & Affordable

- Promote **green telecom** with renewable-powered towers.
- **Germany's Green ICT initiative** focuses on **energy-efficient telecom infra & e-waste recycling**.

PRACTICE QUESTION

Q. The telecom sector has emerged as a critical enabler of India's digital economy and inclusive development. Discuss. Suggest measures to realise the vision of a digitally empowered India. (250 Words, 15 Marks)

APPROACH



MODEL ANSWER

India's telecom sector, the **second-largest in the world**, serves over **1.33 billion subscribers**, with a tele-density of **93.26%** and over **1.09 billion internet users** as of March 2026. Its contribution of nearly **6% to GDP** highlights its transformation from a communication service into a foundational pillar of India's digital economy.

Telecom Sector as a Critical Enabler of Digital Economy and Inclusive Development

- **Backbone of Digital Governance:** Enables Digital India initiatives such as **Aadhaar, DigiLocker, CoWIN and Direct Benefit Transfers (DBT)**. Over **₹44 lakh crore** transferred through DBT since inception, made possible by digital connectivity.
- **Catalyst for Financial Inclusion:** Telecom networks underpin **UPI, mobile banking and fintech services**. UPI transactions increased from **92 crore (2017-18) to over 8,300 crore (2022-23)**.
- **Driver of Economic Growth:** Contributes nearly **6% of GDP** and supports e-commerce, IT, logistics and digital services. Telecom sector AGR reached **₹86,716 crore** in Q4 FY26.
- **Instrument of Digital Inclusion:** Affordable data rates (**₹8.31/GB**, among the world's lowest) have democratized internet access. Internet subscribers crossed **1.09 billion**, including **440 million rural users**.
- **Enabler of Education and Healthcare:** Facilitates online learning, telemedicine and e-health platforms. Digital connectivity proved indispensable during the COVID-19 pandemic.
- **Platform for Emerging Technologies:** Rapid 5G rollout covering **767 of 778 districts** supports AI, IoT, Industry 4.0 and smart cities.
- **Strategic and National Security Asset:** Cell Broadcasting covers nearly **80% of networks** for disaster alerts. India achieved **Tier-1 status in the Global Cybersecurity Index 2024**.

Challenges Hindering Telecom-led Inclusive Development

- **Persistent Digital Divide:** Rural tele-density is only **60.46%** compared to **151.47% in urban areas**.
- **Low Fiberisation:** Only **46% of telecom towers are fiberised**, compared to 80–90% in advanced economies. Limits effective deployment of 5G and future 6G networks.
- **Financial Stress of Operators:** AGR liabilities and intense competition have weakened operators. Vodafone Idea faces debt exceeding **₹2 lakh crore**.
- **High Spectrum Costs:** India's spectrum prices remain among the highest globally. The 2022 5G auction witnessed prices significantly above global averages.
- **Cybersecurity Risks:** Telecom networks face increasing cyber frauds and spyware threats. Over **1.2 lakh cyber fraud cases** were linked to telecom misuse in 2023.
- **Import Dependence:** Around **80% of telecom equipment** is imported, exposing the sector to supply-chain vulnerabilities. Telecom trade deficit stood at nearly **$7 billion in 2023**.
- **Right of Way (RoW) and Infrastructure Delays:** RoW approvals in some states take **6–12 months**, delaying tower and fibre deployment.

Measures to Realise a Digitally Empowered India

- Accelerate **BharatNet** and achieve universal broadband connectivity to all Gram Panchayats.
- Increase tower fiberisation from **46% to 80%** as envisaged under the National Telecom Policy.
- Rationalise spectrum pricing and provide a stable regulatory environment.

- Strengthen indigenous manufacturing through **PLI schemes** and Telecom Manufacturing Zones.
- Expand **PM-WANI**, satellite communication and Non-Terrestrial Networks (NTNs) for remote regions.
- Establish robust cybersecurity architecture through **National Telecom SafeNet** and trusted telecom networks.
- Promote affordable 5G/6G devices and digital literacy to bridge socio-economic divides.

Telecom infrastructure is the foundation of India's transition towards a **$30-trillion digital economy and Viksit Bharat 2047**. Bridging connectivity gaps, strengthening telecom resilience, and fostering innovation will transform the sector from a communication utility into a powerful instrument of inclusive growth, digital empowerment and national competitiveness.

26. FIRE ACCIDENTS IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Disaster Management >> Man-made Disasters

REFERENCE NEWS:

A massive fire broke out on **3 June 2026** in a multi-storey building in **Malviya Nagar, South Delhi**. The blaze is suspected to have originated in the restaurant before rapidly spreading through the building.

FIRE ACCIDENTS IN INDIA:

Fire accidents have emerged as one of India's most persistent urban and industrial safety challenges. Despite the existence of the National Building Code (NBC), State Fire Acts, and disaster management frameworks, India continues to witness frequent fire incidents causing substantial loss of life, property, and economic assets. Recent tragedies indicate that fire safety remains characterized by weak enforcement, inadequate preparedness, and rapid urbanization outpacing safety infrastructure.

- According to the **NCRB's Accidental Deaths and Suicides in India (ADSI) Report 2022**, **7,435 people were killed in more than 7,500 fire accidents** across the country.
- Broader estimates indicate that India experiences nearly **1.6 lakh fire incidents annually**, resulting in **over 27,000 deaths every year**, making fire one of the leading causes of accidental fatalities.
- **Fire accidents are increasingly occurring in commercial and public establishments rather than being confined to residential areas.**
- Fire-related economic losses are estimated to exceed **₹1,000 crore annually**, affecting industries, supply chains, and employment.
- **Fire service capacity remains inadequate in many parts of the country.** Fire services continue to face shortages of personnel, equipment, fire stations, and water infrastructure.

Incident	Year	Deaths	Key Issue
Goa Nightclub Fire	2026	25	Fire safety violations
Delhi Hotel-Restaurant Fire	2026	21	Emergency preparedness failure
Rajkot Game Zone Fire	2024	27	No valid Fire NOC
Mundka Building Fire	2022	27	Electrical fault, single exit
Bhandara Hospital Fire	2021	10 infants	Hospital safety lapses
Surat Coaching Centre Fire	2019	22	Blocked exits
Anaj Mandi Fire	2019	43	Congestion and illegal use

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Kamala Mills Fire	2017	14	Unauthorized structures
AMRI Hospital Fire	2011	94	Poor emergency response
Kumbakonam School Fire	2004	94	Unsafe school infrastructure

REASONS FOR FIRE ACCIDENTS IN INDIA:

Weak Enforcement of Fire Safety Regulations is one of the biggest causes of recurring fire accidents in India.

- Many buildings continue to operate without valid Fire No-Objection Certificates (NOCs), periodic safety audits, or compliance with prescribed fire-safety standards.
- Safety inspections are often irregular, allowing hazardous establishments to function unchecked.
  - The **Rajkot Game Zone Fire (2024)** occurred in a facility operating without a valid fire NOC and structural stability certificate, resulting in 27 deaths.
  - The recent **Goa nightclub fire (2026)** and **Delhi hotel fire (2026)** have again highlighted failures in enforcement and monitoring.

Electrical faults remain the leading cause of fire accidents across the country.

- Short circuits, overloaded electrical systems, aging wiring, illegal connections, and poor maintenance account for a majority of urban fire incidents. Rapid urbanization and increasing dependence on electrical appliances have further increased risks.
  - Experts estimate that nearly **70% of urban fires originate from electrical failures**.
  - The **Mundka Building Fire (Delhi, 2022)** and the **Hyderabad residential fire** were linked to electrical faults and equipment failures.

Illegal constructions and violations of building norms significantly increase fire vulnerability.

- Unauthorized modifications, high rises, often block ventilation, emergency exits, and firefighting access. Many buildings violate setback requirements and occupancy norms.
  - The **Surat Coaching Centre Fire (2019)** trapped students because illegal rooftop structures obstructed evacuation routes.
  - Unauthorized rooftop restaurants contributed to the rapid spread of the **Kamala Mills Fire (Mumbai, 2017)**.

Blocked exits and inadequate evacuation routes frequently convert manageable fires into mass-casualty disasters.

- Emergency exits, staircases, corridors, and escape routes are often encroached upon or used for storage. During fires, smoke and panic quickly trap occupants who have no alternative means of escape.
  - In the **Kolkata hotel fire**, several victims died from asphyxiation after becoming trapped in smoke-filled stairwells.

Congested urban planning and narrow roads delay firefighting operations.

- Unplanned urban growth, overcrowded settlements, and narrow lanes often prevent fire tenders from reaching affected sites quickly. High population density accelerates the spread of fire between adjacent structures.
- New residential complexes, malls, and commercial centres often emerge faster than supporting safety infrastructure. The National Institute of Disaster Management has noted that many urban areas remain inadequately prepared for modern fire risks.
  - The **Anaj Mandi Fire (Delhi, 2019)** exposed how congested urban environments can severely hamper rescue operations and increase fatalities.

Poor maintenance of buildings and fire-fighting equipment contributes significantly to fire incidents.

- Fire alarms, sprinklers, extinguishers, smoke detectors, and hydrants often remain non-functional due to poor maintenance. Many establishments install safety equipment merely to obtain licences but fail to maintain them thereafter.
- Investigations into several commercial and hospital fires have revealed malfunctioning safety systems.
  - The **AMRI Hospital Fire (Kolkata, 2011)** killed 94 people and remains one of India's deadliest hospital fires.
  - The **Bhandara District Hospital Fire (Maharashtra, 2021)** killed 10 infants and raised concerns about safety audits in healthcare facilities.

Unsafe storage and handling of hazardous materials frequently trigger industrial and warehouse fires.

- Chemicals, fuels, explosives, fireworks, and combustible materials are often stored without adherence to safety protocols. Inadequate monitoring and illegal storage practices increase the likelihood of explosions and large-scale fires.
- **Industrial negligence and poor workplace safety standards increase fire risks.**
  - The **Gujarat fireworks warehouse explosion** killed 21 people after highly combustible materials were reportedly stored without proper authorization.

Lack of public awareness and emergency preparedness contributes to higher casualties.

- Occupants are often unaware of evacuation procedures, emergency exits, and fire-response protocols.
- Fire drills are rarely conducted in many schools, offices, hospitals, and commercial establishments. Panic and confusion during emergencies often result in avoidable deaths.
- The repeated occurrence of casualties due to stampedes and delayed evacuation reflects poor preparedness.

Climate change and extreme heat are emerging as new contributors to fire incidents.

- Rising temperatures increase electricity consumption, placing additional stress on power infrastructure. Heat waves increase the probability of short circuits, transformer failures, and air-conditioner-related fires.
- Climate change is also increasing fire risks in agricultural lands, peri-urban areas, and forests.

New technologies and emerging infrastructure have created new categories of fire risk.

- Electric vehicles, lithium-ion batteries, metro systems, data centres, multi-level parking facilities, and piped gas networks pose unique fire challenges.
- EV battery fires are particularly difficult to extinguish and require specialized firefighting techniques.
- Concerns regarding lithium-ion battery fires led to revisions in BIS safety standards in 2023.

MEASURES TO BUILD SAFER AND FIRE-RESILIENT INFRASTRUCTURE IN INDIA:

India needs to move from a **reactive firefighting approach to a proactive fire-risk management approach**. Most fire disasters are preventable and require stronger regulations, safer infrastructure, technological integration, institutional accountability, and public participation.

- **Make Fire Safety Compliance Non-Negotiable:** Fire safety regulations should be treated as mandatory public-safety requirements rather than mere licensing formalities.
  - Make compliance with **NBC 2016 Part IV (Fire & Life Safety)** compulsory across all states. Link occupancy certificates and business licences to annual fire-safety compliance.
  - Introduce automatic closure of establishments operating without valid Fire NOCs.
  - After the **Rajkot Game Zone Fire (2024)**, Gujarat ordered statewide inspections of entertainment venues and stricter compliance audits.
- **Introduce Mandatory Third-Party Fire Audits:** Independent fire-safety audits should replace the current system of irregular inspections.
  - Annual third-party audits for hotels, hospitals, malls, schools, factories, high-rise buildings, digital publication of audit reports, risk-based grading system for buildings.
  - Countries such as **Singapore** and **Australia** require periodic independent fire-safety certification for high-risk occupancies.
- **Modernize Building Design for Fire Safety:** Fire safety should be incorporated at the design stage rather than retrofitted later.
  - Mandatory fire-resistant construction materials. Fire compartmentalization to prevent spread. Smoke-proof stairwells. Multiple emergency exits. Fire lifts in high-rise buildings.
- **Strengthen Safety in Basements and Underground Structures:** Basements have become major fire traps due to poor ventilation and illegal commercial use.
  - Mandatory smoke extraction systems, automatic sprinkler systems, mechanical ventilation, two independent exits and ban commercial activities in unsafe basements.
- **Upgrade Electrical Infrastructure:** Since electrical faults cause a majority of urban fires, electrical safety must become a national priority.
  - Mandatory electrical audits every 3 years. Smart circuit breakers. Thermal imaging inspections. Replacement of outdated wiring. Overload monitoring systems.
  - Japan conducts regular electrical inspections for commercial buildings and high-density residential complexes.
- **Create Fire-Resilient Urban Planning:** Fire safety must become an integral component of urban planning.
  - Wider roads for fire-engine access. Dedicated emergency lanes. Hydrant networks in all urban local bodies. Fire stations within prescribed response distances.
- **Modernize Fire Services:** Fire services should be transformed into technologically advanced emergency-response agencies.

- Increase fire stations and personnel. Establish rapid-response units. Procure aerial ladder platforms. Deploy compact fire tenders for narrow lanes.
- **Bengaluru's rapid-intervention vehicles** and **Mumbai's specialized high-rise firefighting units** offer useful models.

- **Leverage Technology and Artificial Intelligence:** Technology should be used for prevention, detection, and response.
  - AI-based fire prediction systems. Smart smoke and heat sensors. GIS mapping of fire hydrants. Drone-assisted firefighting. Thermal imaging cameras.
  - Delhi and Mumbai have initiated pilot projects using AI-based heat mapping and surveillance systems for early detection.
- **Establish a Unified Digital Fire Safety Platform:** All regulatory approvals should be integrated digitally
  - Create a national dashboard linking: Building approvals, fire NOCs, occupancy certificates, electrical safety clearances, structural stability certificates.
- **Strengthen Accountability and Liability:** Negligence should attract stringent penalties. Criminal liability for owners violating fire norms, accountability of municipal officials approving unsafe structures.
- **Improve Industrial and Warehouse Safety:** Industrial facilities require sector-specific fire-risk management. Hazardous material inventory systems, automatic suppression systems, gas-leak detection mechanisms and fire-resistant storage facilities.
  - The **Process Safety Management (PSM)** framework used internationally can be adapted for Indian industries.
- **Institutional Reforms and Governance Improvements:** Fire safety governance should be standardized nationwide. Enact a comprehensive Fire Safety Act in all states. Adopt the Model Fire and Emergency Services Bill. Update NDMA Fire Service Guidelines periodically. Establish dedicated Fire Safety Regulatory Authorities.

<u>KEY FIRE SAFETY REGULATIONS IN INDIA</u>

National Building Code (NBC) 2016: The code, formulated by the **Bureau of Indian Standards (BIS)**, is the primary framework governing fire safety in buildings across India.

- Part IV of the Code prescribes standards relating to fire prevention and protection, building design and construction, fire-resistant materials, means of escape and emergency exits, fire detection and alarm systems, sprinklers, hydrants, and firefighting installations.
- It applies to residential, commercial, industrial, institutional, and high-rise buildings.
- Although comprehensive, the NBC becomes legally enforceable only when adopted by States and Urban Local Bodies through local bye-laws.

Model Building Bye-Laws (MBBL), 2016: Issued by the **Ministry of Housing and Urban Affairs (MoHUA)** to guide States and Urban Local Bodies in updating building regulations. Mandates use of fire-resistant construction materials, installation of fire alarms and detection systems, adequate ventilation and natural lighting, provision of emergency exits and firefighting equipment. Aims to ensure uniformity in fire-safety standards across India.

State Fire Prevention and Fire Safety Acts:

- Fire services are a **State Subject** under the Constitution and are listed as a

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municipal function under the **12th Schedule (Article 243W)**.

- Accordingly, most States have enacted their own Fire Prevention and Fire Safety Acts.
- These laws generally provide for Fire No-Objection Certificates (Fire NOCs), inspection of buildings, enforcement of fire-safety norms, penalties for non-compliance and powers of Fire Departments.
- Delhi Fire Service Act, Maharashtra Fire Prevention and Life Safety Measures Act, Gujarat Fire Prevention and Life Safety Measures Act.

Model Bill for Fire and Emergency Services, 2019: Prepared by the Ministry of Home Affairs. Provides a model legal framework for States to modernize fire and emergency services. Seeks to standardize fire-service administration, strengthen fire prevention mechanisms.

Fire No-Objection Certificate (Fire NOC) System: Certain categories of buildings must obtain a Fire NOC before commencing operations. Applicable to high-rise buildings, hospitals, hotels, malls, educational institutions and industrial establishments.

National Disaster Management Authority (NDMA) Guidelines: The NDMA has issued detailed guidelines on fire safety in Homes, Schools, Hospitals, Commercial establishments, Industrial facilities. Key recommendations include establishing dedicated Fire Acts in States, strengthening fire-service infrastructure, expanding fire stations, capacity building and training and community awareness and preparedness.

Scheme for Expansion and Modernization of Fire Services in States (2023–26): Launched following the **15th Finance Commission's recommendation of ₹5,000 crore** for strengthening fire services.

Hospital Fire Safety Guidelines (2020): Issued by the Ministry of Health and Family Welfare after several hospital fire incidents.

Occupational Safety, Health and Working Conditions (OSHWC) Code, 2020: Provides safety standards for factories and workplaces. Requires employers to maintain fire-prevention measures.

Bureau of Indian Standards (BIS) Fire Safety Standards: BIS prescribes technical standards for fire-resistant materials, fire extinguishers, sprinkler systems, smoke detectors, electrical installations, Lithium-ion batteries and EV safety. These standards support the implementation of NBC provisions.

PRACTICE QUESTION

Q. Fire accidents in India are increasingly becoming a governance and urban safety challenge rather than merely accidental events. Discuss the major causes of recurring fire accidents in India and suggest measures to build fire-resilient infrastructure. (10 marks, 150 words)

APPROACH

Q. Fire accidents in India are increasingly becoming a governance and urban safety challenge rather than merely accidental events. Discuss the major causes of recurring fire accidents in India and suggest measures to build fire-resilient infrastructure. (10 marks, 150 words)

Introduction → Start with a data or recent incident of fire accident in India

Body → Show how fire accidents are increasingly due to governance and urban safety challenge than accidents
→ Give the major causes of recurring accidents

Conclusion → Suggest measures and conclude

MODEL ANSWER

Recent incidents such as the **Delhi Hotel-Restaurant Fire (2026)**, **Goa Nightclub Fire (2026)** and **Rajkot Game Zone Fire (2024)** highlight the growing challenge of fire safety in India. According to NCRB data, over **7,435 people died in more than 7,500 fire accidents in 2022**, while India records nearly **1.6 lakh fire incidents annually**.

Fire accidents are increasingly a governance and urban safety challenge because:

- Most major fires occur despite the existence of the National Building Code and State Fire Safety Acts, indicating failures in enforcement rather than absence of regulations.
- Many commercial establishments continue to operate without valid Fire NOCs, as seen in the **Rajkot Game Zone Fire (2024)**.
- Illegal constructions and unauthorized structural modifications often block evacuation routes, as witnessed in the **Surat Coaching Centre Fire (2019)** and **Kamala Mills Fire (2017)**.
- Congested urban planning and narrow roads delay firefighting operations, as exposed by the **Anaj Mandi Fire (2019)**.
- Poor maintenance of fire alarms, sprinklers and hydrants contributes to large-scale casualties, as seen in the **AMRI Hospital Fire (2011)**.
- Inadequate institutional capacity, including shortage of fire stations, equipment and trained personnel, weakens emergency response.
- Lack of periodic inspections, accountability and coordination among agencies allows safety violations to persist unchecked.

Major causes of recurring fire accidents:

- Electrical faults caused by overloaded circuits, faulty wiring and poor maintenance account for nearly 70% of urban fires.

- Weak enforcement of fire-safety regulations enables hazardous establishments to continue operations.
- Illegal constructions and violations of building norms obstruct ventilation and emergency exits.
- Blocked staircases and encroached escape routes convert manageable fires into mass-casualty disasters.
- Unsafe storage and handling of hazardous chemicals and combustible materials trigger industrial fires.
- Lack of public awareness, fire drills and emergency preparedness increases fatalities during evacuations.
- Climate change, heatwaves and emerging risks from EV batteries, data centres and modern infrastructure are creating new fire hazards.

Measures to build fire-resilient infrastructure:

- Make compliance with **NBC 2016 Part IV** mandatory across all States and Urban Local Bodies.
- Introduce compulsory annual third-party fire-safety audits for high-risk buildings.
- Upgrade electrical infrastructure through periodic electrical audits and smart monitoring systems.
- Integrate fire safety into urban planning through wider roads, hydrant networks and dedicated emergency access corridors.
- Modernize fire services with AI-based detection systems, drones, thermal imaging cameras and rapid-response units.
- Strengthen accountability by imposing strict penalties on violators and fixing responsibility on regulatory authorities for negligence.

Fire disasters in India are largely preventable and stem from regulatory lapses, unsafe urbanization and poor preparedness. A shift from **reactive firefighting to proactive fire-risk management**, supported by technology, compliance and accountability, is essential for creating fire-resilient cities and protecting lives.

27. ONLINE GAMING IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

Recently Supreme Court in **Union of India v. Gameskraft Technologies Pvt. Ltd.** (along with a batch of connected petitions). delivered two rulings with major ramifications for the country's real-money gaming industry. The division bench upheld the constitutional validity of the Centre's retrospective 28% GST levy on online gaming companies and affirmed the validity of state laws prohibiting real-money gaming platforms.

What Cases Were Before the Court?

1. State Laws Regulating Online Betting

- Tamil Nadu and Karnataka enacted laws prohibiting online betting and wagering. High Courts had struck down these laws.
- States appealed to the Supreme Court, arguing:
  - Betting and gambling fall within State legislative competence.
  - Restrictions are necessary to address addiction and social harms.

2. GST on Online Gaming

- Gaming companies challenged GST demand notices worth several lakh crores.
- Bombay and Karnataka High Courts had earlier ruled in favour of gaming companies.
- The Union Government appealed these rulings before the Supreme Court.

Why Did the Supreme Court Uphold the 28% GST?

- GST Council decided that:
  - All online games involving bets or wagers would attract **28% GST**.
  - Distinction between games of skill and games of chance would not matter for GST purposes.
- **Gaming Companies argued** GST should apply only on platform fees or commissions, not on entire value of bets/stakes.

Supreme Court Held: The Court rejected challenges against the levy of GST on actionable claims arising from online gaming and fantasy sports under the category of betting and gambling.

- An **actionable claim** refers to a legally enforceable claim to unsecured debt or beneficial interest in movable property. Under the GST law, actionable claims related to lottery, betting, gambling, casinos, horse racing and online money gaming may be brought within the tax framework.
- The Court observed that even if an online game involves skill, staking money on an uncertain outcome can still bring it within the scope of betting and gambling for taxation and regulatory purposes.
- The Court rejected the argument that games of skill should automatically remain outside GST or regulatory control merely because skill is involved.
- Rummy and Poker: The Court upheld the statutory ban on online games such as rummy and poker when played for a wager, bet, money or other stakes.

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Why Did the Court Uphold State Restrictions?

- Betting and gambling are **res extra commercium** (activities outside legitimate commerce). Therefore, they do not enjoy the same constitutional protection available to ordinary business activities.
- Even if a game contains elements of skill:
  - Introduction of money stakes converts it into a wagering activity.
- States have legislative competence under:
  - Entry 34, State List (Betting and Gambling)
  - Public Order provisions.
- Smartphones and digital payment systems have effectively turned "every mobile phone into a virtual gambling house."

Implications of the Judgment

- **Major Blow to Online Gaming Industry:** Industry already facing challenges under Promotion and Regulation of Online Gaming Act, 2025. The Act prohibits most forms of real-money online gaming.
- **Huge Tax Liability:** Gaming firms face GST demands worth several lakh crore rupees. Many companies may find these liabilities unsustainable.
- **Business Closures and Relocation:** Companies may shut operations and move overseas. Shift to social gaming or fintech sectors.
- **Increased Insolvency Risks:** Tax demands reportedly exceed revenues earned by several companies. Industry representatives fear insolvency proceedings and significant contraction of the sector.
- **Strengthens State Regulatory Powers:** Judgment clearly recognises States' authority to regulate Betting, Gambling and Online wagering activities.
- **Impact on Future Legal Challenges:** The ruling may weaken challenges against Promotion and Regulation of Online Gaming Act, 2025. Court's recognition of betting and gambling as State subjects strengthens the government's legal position.

MAJOR PROVISIONS OF THE PROMOTION AND REGULATION OF ONLINE GAMING ACT, 2025:

Classification of Online Games

- **E-Sports**: Competitive, skill-based digital games recognised under the **National Sports Governance Act, 2025**.
- **Social Games**: Recreational or educational games with **no monetary stakes**, may include subscription or one-time access fees.
- **Online Money Games (RMGs)**: Any game (skill/chance/both) involving money or convertible stakes (coins, tokens, credits). **Completely banned.**

Prohibition Measures

- **Ban on RMGs**: Offering, operating, or facilitating online money gaming services is prohibited.
- **Ban on Advertisements**: Direct or indirect promotion of money games via any media, including celebrity endorsements.
- **Ban on Financial Transactions**: Banks/financial institutions prohibited from facilitating payments for money games.

Establishment of an Authority

- Central Government to constitute a **Regulatory Authority on Online Gaming**.Powers include:

- Recognising, categorising, and registering e-sports and social games.
- Determining whether a game qualifies as an RMG.
- Handling complaints related to unfair or harmful gaming practices.

Offences and Penalties

- Offering RMG services → **Up to 3 years imprisonment** and/or **₹1 crore fine**.
- Advertising RMGs → **Up to 2 years imprisonment** and/or **₹50 lakh fine**.
- Financial facilitation of RMG → **Up to 3 years imprisonment** and/or **₹1 crore fine**.
- **Repeat offenders** face enhanced penalties (up to 5 years imprisonment, ₹2 crore fine).
- **Cognisable & non-bailable offences** under BNSS, 2023.

Enforcement

- **CERT-IN empowered** to block online money gaming services.
- Authority/officers can **search, seize, and arrest without warrant** for violations.
- Offshore platforms violating the ban can be acted upon using **Interpol cooperation**.

Protection and Oversight

- Immunity for government/authority officers acting in **good faith**.
- Act overrides inconsistent provisions of any other law (including IT Act, 2000).
- Central Government empowered to **frame detailed rules** for implementation.

IMPACT OF ONLINE GAMING IN INDIA:

Addiction and Financial Ruin

- **WHO** recognises online money gaming addiction as a behavioural disorder causing **compulsive play, distress, and financial harm**.
- Indians collectively lose **~₹15,000 crore every year** on Real Money Games (RMGs) (Govt. data, 2025).
- Families fall into debt when players chase "quick profits" but end up losing savings.

Mental Health & Suicides

- Psychological stress from losses often leads to **depression and suicides**.
- **32 suicides** linked to online gaming addiction were reported in Karnataka alone between 2022–2024 (State Govt. data).
- Clinical studies link prolonged online gambling to **increased anxiety, insomnia, and relationship breakdowns**.

Fraud, Money Laundering & Tax Evasion

- RMG platforms are often misused for **illegal financial activities**:
- **₹30,000 crore GST evasion** linked to online gaming firms (Govt. reports, 2023–24).
- **₹2,000 crore tax evasion** detected by the Financial Intelligence Unit (2022).
- Chinese app **FIEWIN defrauded Indians of ₹400 crore** using mule accounts and crypto wallets (ED probe).

Threat to National Security

- A **Parliamentary Panel (2023)** found that some portals had become **agents for terror financing**.
- Investigations reveal platforms also used for **illegal messaging and covert communication**.
- Offshore operators evade Indian law, making enforcement difficult.

Legal and Regulatory Loopholes

- **Betting & gambling are state subjects** (Entries 34 & 62, State List), leading to inconsistent regulations.
- States like **Telangana (2017), Andhra Pradesh (2020), and Tamil Nadu (2022)** banned online gambling, but operators continue via **VPNs and offshore servers**.
- The online space was largely **unregulated** until the new Bill (2025), unlike physical gambling which already faced restrictions.

Consumer Exploitation & Opaque Algorithms

- Govt. has said RMG platforms use **opaque algorithms and bots** to ensure users never emerge net winners.
- Misleading advertisements often endorsed by celebrities (e.g., **MS Dhoni, Hrithik Roshan, Sourav Ganguly**) lure users with "easy wins."
- The **Central Consumer Protection Authority (CCPA)** has already issued advisories against such promotions.

Enforcement Challenges

- Offshore RMG firms bypass Indian laws and operate across jurisdictions.
- Despite **1,524 betting/gambling sites and apps being blocked (2022–June 2025)** under IT Act provisions, new ones keep emerging.
- Lack of uniform definition of **"skill vs chance"** games creates legal ambiguity—while SC earlier held Rummy/Fantasy Sports involve skill, the new Act treats all RMGs alike.

Youth Vulnerability

- Minors are particularly at risk due to **lack of age-gating mechanisms**.
- Reports show teens spending family money on in-game stakes without parental knowledge.
- Ministry of Education has issued guidelines for parents/teachers, but implementation remains weak.
- Industry warns of **2 lakh job losses** across 400+ firms if RMGs are banned.

Judicial & Federal Issues

- **States' domain**: Betting/gambling under Entries 34 & 62, State List. Several states (Telangana, Andhra, Tamil Nadu) already banned online gambling.
- **GST**: In 2023, uniform **28% GST** imposed on deposits. Gaming firms oppose, calling skill-based games different from gambling. SC has stayed retrospective GST notices.
- **SC view**: Rummy and Fantasy Sports involve "substantial skill," not pure gambling. Critics argue Act erases this distinction, violating **Article 19(1)(g)** (right to trade/occupation).

WAY FORWARD:

Clear Legal Distinction – Skill vs Chance

- **State of Andhra Pradesh v. K. Satyanarayana (1968***)* → Rummy involves a "substantial degree of skill."
- **K.R. Lakshmanan v. State of Tamil Nadu (1996)** → Horse racing involves skill, not mere gambling. *Dr. K.R. Lakshmanan* also reinforced that "games of skill" are protected under **Article 19(1)(g)** (Right to Trade).
- The Bill should **differentiate between chance-based gambling and skill-based gaming**, ensuring constitutionality.

Balanced Regulatory Framework

- **Law Commission of India Report No. 276 (2018)**: Suggested a **regulated legal framework** for betting & gambling to curb black money and generate revenue.
- Establish a **National Online Gaming Regulatory Authority (NOGRA)** for licensing, monitoring, and consumer protection.

Stronger Enforcement & Digital Surveillance

- Use **AI-based monitoring** (similar to South Korea's "Game Rating and Administration Committee") to detect fraud, bots, and underage play.
- Strengthen **CERT-In** with capacity for cross-border enforcement; enhance cooperation with **Interpol** against offshore operators.

Protection of Minors & Vulnerable Groups

- China imposes **gaming time limits for minors** (max 3 hours/week on RMGs).
- Mandatory **age-verification and KYC** for all users. Parental control features and in-game spending caps. Integration with Aadhaar-based checks to prevent minors' misuse.

Taxation & Revenue Regulation

- Ensure **uniform GST regime** without retrospective application, to avoid industry uncertainty.
- Adopt **UK Gambling Commission's model**, where operators are taxed but required to contribute to **public welfare funds for addiction treatment**.

Awareness & Mental Health Support

- Launch nationwide campaigns on **safe gaming habits** (like Singapore's *National Council on Problem Gambling*).
- Establish **helplines & rehabilitation centres** for gaming addicts.
- Mandate that platforms display **"responsible gaming" warnings** similar to tobacco/alcohol advisories.

Technological Transparency

- Mandate **algorithm audits** by independent third parties to prevent manipulation of odds.
- Public disclosure of **winning probabilities** (as done in EU jurisdictions).

PRACTICE QUESTION

Q. The unchecked rise of online money gaming in India has posed serious socio-economic, legal, and national security challenges. Critically examine the online gaming sector with reference to the recent Supreme Court rulings. (15 marks, 250 words)

APPROACH

Q. The unchecked rise of online money gaming in India has posed serious socio-economic, legal, and national security challenges. Critically examine the online gaming sector with reference to the recent Supreme Court rulings. (15 marks, 250 words)

Introduction
- Start with the recent ruling of SC

Body
- Explain the unchecked rise in online gaming.
- Explain the serious socio-economic, legal, and national security challenges. Explain what the SC rulings deal with this sector.

Conclusion
- Provide way forward and conclude

MODEL ANSWER

Supreme Court upheld the constitutional validity of the **28% GST on online real-money gaming** and affirmed the validity of State laws prohibiting online betting and wagering in **Union of India v. Gameskraft Technologies Pvt. Ltd.**

Unchecked Rise of Online Gaming in India

The rapid expansion of online money gaming has been driven by:

- Widespread smartphone and internet penetration.
- Growth of UPI and digital payment ecosystems.
- Aggressive celebrity-endorsed advertising.
- Easy accessibility through mobile applications.
- Venture capital investments and gaming startups.
- Regulatory gaps and operation of offshore platforms beyond Indian jurisdiction.

Socio-Economic, Legal and National Security Challenges

Socio-Economic Challenges

- Gaming addiction leading to compulsive behaviour and financial ruin.

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- Rising mental health issues, including anxiety, depression and suicides.
- Exploitation of youth and vulnerable populations.
  Household indebtedness due to losses on real-money gaming platforms.

Legal and Regulatory Challenges

- Ambiguity regarding the distinction between games of skill and games of chance.
- Fragmented regulatory framework due to varying State laws and jurisdictional issues.
- Use of gaming platforms for money laundering, tax evasion, terror financing, illegal communication networks and cryptocurrency-based financial transactions by offshore operators.

Significance of the Recent Supreme Court Rulings

- Upheld the 28% GST on the full value of bets and wagers.
- Held that wagering activities attract GST irrespective of skill or chance.
- Recognised betting and gambling as *res extra commercium* (outside legitimate commerce).
- Affirmed States' legislative competence under Entry 34 of the State List.
- Strengthened the constitutional validity of restrictions on online betting and wagering.
- Reinforced the regulatory framework established under the Promotion and Regulation of Online Gaming Act, 2025.

Way Forward

- Establish a National Online Gaming Regulatory Authority.
- Create a clear legal distinction between skill-based gaming and gambling.
- Mandate KYC, age verification and spending limits
- Strengthen CERT-In and cross-border enforcement against offshore operators.
- Introduce algorithm audits and transparency standards.
- Expand awareness campaigns and addiction rehabilitation services.
- Develop a stable and predictable taxation framework.

While online gaming offers opportunities for innovation, employment and digital growth, unchecked real-money gaming can undermine public health, financial security and national interests. A balanced framework combining strict regulation, technological oversight, consumer protection and responsible gaming practices is essential to harness the benefits of the sector while mitigating its risks.

28. STARTUP ECOSYSTEM OF INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

Addressing the **RISE Conclave 2026**, organised under the theme **"Innovation & Entrepreneurship Driven Growth for Viksit Bharat 2047",** Union Minister of State (Independent Charge) for Science & Technology and Earth Sciences, said that **India's StartUp movement has emerged as a major driver of employment generation, creating nearly 24–25 lakh jobs over the last decade.**

RISE CONCLAVE 2026: KEY HIGHLIGHTS

- India has become the **world's 3rd largest startup ecosystem**.
- Number of startups increased from **350–400 startups (2015)** to n**early 2.3 lakh startups (2026)**.
- Startups have generated **24–25 lakh jobs** over the last decade.
- Policy reforms encouraged Innovation Entrepreneurship and Private sector participation in strategic sectors.
- **Rise of Tier-2 and Tier-3 Cities:** More than **50% of Indian startups** now originate from Tier-2 cities and Tier-3 cities. Indicates that innovation is no longer limited to metropolitan centres.

About RISE Conclave 2026:

- **RISE stands for** Research, Industry, Startups, Entrepreneurship
- Create collaboration among Scientists, Industry, Investors, Academia, Policymakers.
- Supports the vision of **Viksit Bharat 2047.**

Aerospace Startup Ecosystem

- India's first public-private aerospace incubation centre **mach33.aero**(completed 5 years). Established by CSIR-NAL and partners.
- Incubated **34 startups**.
- RISE 2026 witnessed participation of **125+ startups**, many from the aerospace sector.

Emerging Technology Sectors

The government highlighted growing private participation in Space sector Biotechnology Deep-ocean exploration Nuclear energy Artificial Intelligence Quantum technologies.

National Missions Highlighted:

National Quantum Mission

- Launched with an 8-year roadmap.
- Achieved several milestones ahead of schedule.

IndiaAI Mission

Focus areas:

- Computing infrastructure
- Data ecosystems
- AI innovation
- Future skills development.

Improvement in Global Innovation Ranking:

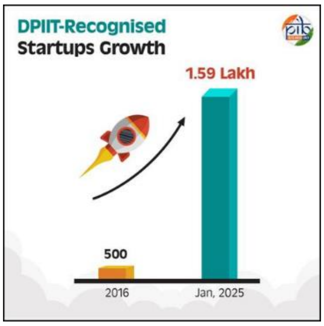
- India has significantly improved its position in the **Global Innovation Index (GII).**
- **Patent Ecosystem:** Increase in patent filings by Indian residents and high-quality scientific publications.

STARTUP ECOSYSTEM OF INDIA:

The **startup ecosystem in India** has undergone a dramatic transformation over the last decade, positioning itself as the **world's third-largest hub** after the US and China.

Growth of India's Startup Ecosystem

- As of **January 2025**, there are **1,59,157 DPIIT-recognized startups**, up from just ~500 in 2016.
- India's startup ecosystem has expanded from about **350 startups to 2.3 lakh startups**, generating nearly **25 lakh jobs.**
- **Unicorn Boom:** India has **73 unicorns**(startups valued above $1 billion). Examples: Flipkart, Byju's, Paytm, OYO, Nykaa.
- **Geography:** Maharashtra, Karnataka, Delhi, Uttar Pradesh, and Gujarat lead in startup



Key Growth Drivers

- **Demographic Dividend:** Over **65% of the population below 35 years**—tech-savvy and entrepreneurial.
  - Youth-driven fintech startups like **PhonePe** and **Razorpay**.
- **Rising Consumption:** By 2030, half of Indian households will be **upper-middle or high-income**, expanding consumer demand.
- **Digital Revolution:** Cheap internet, UPI payments, smartphone penetration.
  - UPI processed **14 billion+ transactions in Dec 2023** (NPCI data).
- **Government Push:**
  - **Startup India (2016):** tax exemptions, ₹10,000 crore Fund of Funds, easier compliance.
  - **Atal Innovation Mission (AIM):** tinkering labs, incubation centres.
  - **MUDRA & Stand-Up India:** loans for small entrepreneurs, women, SC/ST.
  - **iDEX & IN-SPACe:** fostering defence and space-tech startups.
  - **BHASKAR Platform (2024):** A digital ecosystem connecting startups, mentors, and investors. Key features include: Seamless networking, centralized access to resources and inclusivity for startups from non-metro regions.
- **Corporate-Startup Synergy:** Large firms partnering/acquiring startups for innovation.
  - **HCL acquired ed-tech platform GUVI (2022)**.
- **Global Linkages:** Startup20 under India's G20 presidency boosted cross-border collaborations.

IMPACT OF STARTUPS ON INDIAN ECONOMY AND SOCIETY:

Boosting Economic Growth

- India is the **3rd largest startup ecosystem** globally, with **73 unicorns (2025)** valued at over $240 billion (ASK Private Wealth Hurun Report 2025).
- Startups contribute significantly to **GDP growth** by creating new markets (fintech, edtech, healthtech).

- Zerodha (**$8.2B valuation)** transformed India's brokerage industry with low-cost digital trading, expanding financial inclusion.

Job Creation and Employment Generation

- Startups employ **over 10 lakh people directly and 50+ lakh indirectly** (DPIIT, 2024).
- Sectors like e-commerce, fintech, logistics, and SaaS are major job creators.
- **Rapido (bike taxi startup)** created lakhs of gig jobs across Tier-2/3 cities.

Encouraging Innovation and R&D

- Startups are driving **AI, clean tech, space tech, and health tech innovations**.
- **Agri-tech startups** like **DeHaat** provide AI-based advisory and market linkages to farmers, reducing inefficiencies.

Strengthening Digital and Financial Inclusion

- **Fintech startups (19 unicorns, $50B value)** revolutionized banking and payments.
- **Razorpay & PhonePe** expanded digital payments to millions of small businesses.
- India's UPI, supported by startups, now processes **over 12 billion transactions monthly (2025)**.

Global Recognition and Exports

- SaaS startups like **Freshworks (NASDAQ-listed)** and **Zoho** export services globally, making India a **SaaS hub**.
- India's SaaS sector is expected to reach **$50B by 2030** (NASSCOM).

Promoting Entrepreneurship Culture

- Startups have democratized entrepreneurship beyond metros.
- **Bengaluru (26 unicorns)** leads, but Tier-2 hubs like Pune, Jaipur, and Coimbatore are rising.
- IITs have produced **160 unicorn founders**, inspiring student entrepreneurs.

Social Impact – Healthcare, Education & Agriculture

- **Edtech** (e.g., Byju's, PhysicsWallah) expanded access to online education, though facing governance challenges.
- **Healthtech startups** like **Practo, 1mg** improved telemedicine and medicine delivery, especially during COVID-19.
- **Agri-tech startups** (DeHaat, Ninjacart) connect farmers to markets, reducing post-harvest losses.

Women and Youth Empowerment

- Over **18% of startups in India** now have at least one **woman founder** (Invest India, 2024).
- Startups have also tapped into India's **youth dividend** – average founder age is 31 years.
- **Falguni Nayar's Nykaa** became India's first woman-led unicorn to go public.

Contribution to Sustainable Development

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- Startups are leading India's **green economy transition**: **ReNew Power** (renewable energy), **Ather Energy** (EV mobility), **Ola Electric** (EVs, now a unicorn)
- This supports India's **net-zero 2070 goal**.

CHALLENGES OF STARTUP ECOSYSTEM IN INDIA:

Funding Constraints and Dependency on Foreign Capital

- Despite India being the **third-largest startup hub**, funding remains volatile.
- **2022–23 slowdown**: Startup funding fell by **33% YoY to $24B**, with early-stage startups hit hardest (Tracxn Report, 2023).
- Heavy reliance on foreign investors (e.g., SoftBank, Tiger Global, Sequoia) makes the ecosystem vulnerable to global interest rate cycles.
- Many startups like Byju's faced valuation markdowns by global investors in 2023–24 due to weak governance and overdependence on external capital.

Regulatory and Policy Uncertainty

- Frequent policy changes (e.g., **Online Gaming Bill 2025**) have impacted valuations and led to **exits of Dream11, MPL, WinZO** from the unicorn list.
- Complex compliance framework (labour laws, taxation, GST norms) creates friction. FDI regulations remain restrictive in sensitive sectors like e-commerce and fintech.

High Taxation Burden – 'Angel Tax' Issue

- Section 56(2)(viib) of the Income Tax Act, known as **"Angel Tax"**, taxed capital raised by startups if above fair market value.
- Though relaxed for DPIIT-recognised startups, compliance continues to cause uncertainty.
- In 2019, over **2,000 startups received tax notices**, creating fear among investors.

Talent Retention and Skill Gap

- While IITs/IIMs produce top founders (160 unicorn founders from IITs – Hurun Report 2025), there is still a **shortage of skilled workforce** in AI, semiconductors, and clean tech.
- Startups face brain drain as skilled professionals move abroad for better pay and stability. Many Indian AI researchers migrate to the U.S. or Europe, limiting India's capacity to build world-class AI firms.

Infrastructure and Operational Bottlenecks

- High cost of land and office spaces in metro hubs like Bengaluru and Mumbai.
- Weak physical infrastructure (power, transport) in Tier-2/3 cities hinders decentralised growth.
- Only **0.2% of national landmass** is occupied by top 10 cities (SC observation, 2024), straining urban resources.

Corporate Governance and Transparency Issues

- Several unicorns face questions over governance, financial mismanagement, and opaque practices.

- Byju's valuation plummeted from **$22B in 2022 to below $5B in 2025** due to audit concerns, mounting losses, and debt defaults. Poor governance affects investor confidence and long-term sustainability.

Uneven Sectoral Growth

- Fintech dominates with **19 unicorns valued at $50.1B (2025)**, but sectors like healthcare, deep tech, and clean tech remain underfunded.
- Over-concentration in consumer tech reduces innovation diversity. AI sector saw rapid unicorn growth (Ai.tech at $1.5B in 3 years), while agri-tech still struggles for scaled funding.

Intellectual Property (IP) and R&D Deficit

- India lags in **global patent filings**. In 2023, India filed around **66,000 patents**, compared to China's **1.6 million**.
- Startups focus more on business models than core tech innovation. Limited university–industry collaboration weakens the R&D pipeline.

Exit Challenges for Investors

- IPO route is underdeveloped: Indian startup IPOs like **Paytm (2021)** faced post-listing value erosion (~70% decline from IPO price).
- M&A activity is limited compared to U.S./China, making investor exits harder.

<u>WAY FORWARD:</u>

- **Promote Original Innovation:**
  - **Go Beyond Imitation:** Focus on creating **meta-level startups** addressing fundamental problems with **global scalability** rather than replicating existing global ideas.
  - **Upgrade R&D and Education:** Improve research infrastructure and update educational curriculums to prepare students for the digital age.
- **Strengthen Domestic Financing Ecosystem**
  - **Enhance Existing Mechanisms:** Strengthen banks, venture capital, and angel investor networks to promote startup funding.
  - **Introduce New Financing Models:** Explore innovative approaches like equity crowdfunding, peer-to-peer lending, and pre-order financing.
  - **Leverage Institutional Investors**: Encourage domestic funding from large institutions like pension and insurance funds.
  - **Allow Overseas Listing:** Permit domestic companies to list overseas to access global capital markets.
- **Decentralize Startup Infrastructure**
  - **Expand to Tier 2/3 Cities:** Establish more incubators, science parks, and mentorship programs outside metropolitan areas.
  - **Support Niche Industries:** Provide targeted incubation support in sectors like media, education, healthcare, governance, sanitation, and clean energy.
- **Reverse Brain-Drain**

   - Incentivize Indian professionals abroad to return and establish startups domestically by offering financial, regulatory, and infrastructure support.
- **Foster Data-Driven Decision Making**
   - **Open Data Access**: Make comprehensive startup data available for big data analysis to identify success factors and address failure risks.
   - **Global Best Practices:** Learn from **Japan's Credit Risk Database**, which uses decades of data to analyze SME characteristics and promote financing. Establish an agency similar to **Singapore's International Enterprise** to help Indian startups expand globally.
- **Promote Innovation and R&D**
   - **Boost R&D Spending**: Raise R&D investment beyond the current 0.64% of GDP to drive innovation and match global leaders like China (2.4%) and the US (3.5%).
   - **Collaboration:** Foster partnerships between industry, academia, and government to bridge innovation gaps.
- **Ease Regulatory Hurdles**
   - Simplify processes for accessing government benefits and creating a startup friendly tax regime.
   - Reduce bureaucratic delays in registration, permits, and compliance requirements.

PRACTICE QUESTION

Q. India has emerged as the world's third-largest startup ecosystem, but challenges persist in ensuring sustainability and inclusiveness. Discuss the significance of startups in India's economic and social transformation. (15 marks, 250 words)

APPROACH

Q. India has emerged as the world's third-largest startup ecosystem, but challenges persist in ensuring sustainability and inclusiveness. Discuss the significance of startups in India's economic and social transformation. (15

Introduction → Start with a data or any fact about India's startup ecosystem

Body → Give the significance of the startups in economic and social transformation
→ Since the directive is discuss and first statement shows persisting challenges, give the challenges

Conclusion → Provide way forward and conclude

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MODEL ANSWER

India's startup ecosystem has grown dramatically in the last decade, with over **1.59 lakh DPIIT-recognised startups (2025)** and **73 unicorns valued at $240+ billion** (Hurun Report 2025). It is now the **third-largest startup hub globally** after the US and China. Startups have not only spurred economic growth but also fostered innovation, job creation, and social inclusion.

Significance of Startups in India

- **Economic Growth & GDP Contribution:** Startups like **Zerodha ($8.2B valuation)** and **Razorpay ($7.5B)** have disrupted industries, creating new markets. SaaS exports from India are projected to reach **$50B by 2030** (NASSCOM).
- **Job Creation**: Startups generated **17.28 lakh direct jobs between 2016–2024** (DPIIT). Gig platforms like **Rapido** provide lakhs of jobs in Tier-2/3 cities.
- **Innovation & R&D**: AI unicorn **Ai.tech** became India's fastest bootstrapped unicorn ($1.5B in 3 years). Agri-tech startups like **DeHaat** provide AI-based advisory and market linkages to farmers.
- **Digital & Financial Inclusion**: Fintech (19 unicorns worth $50.1B) expanded digital banking; **UPI crossed 12 billion monthly transactions (2025)**. Startups like **PhonePe** and **Razorpay** empower small businesses.
- **Social Impact**: **Edtech (Byju's, PhysicsWallah)** expanded learning opportunities. **Healthtech (Practo, 1mg)** improved access to telemedicine and medicines during COVID-19.
- **Women & Youth Empowerment**: 18% startups have a woman co-founder (Invest India, 2024). **Falguni Nayar's Nykaa** became India's first woman-led unicorn to go public.
- **Green Growth Contribution**: Startups like **Ola Electric, Ather Energy** and **ReNew Power** lead India's EV and renewable push, aiding the **net-zero 2070 goal**.

Challenges in the Startup Ecosystem

- **Funding Volatility & Foreign Dependence**: Funding fell **33% YoY in 2023** (Tracxn). Heavy reliance on investors like SoftBank makes startups vulnerable.
- **Regulatory Uncertainty**: **Online Gaming Bill 2025** led to valuation crashes of Dream11, MPL, and WinZO. Complex compliance in GST, FDI, and labour laws.
- **Corporate Governance Issues**: **Byju's valuation crash (from $22B in 2022 to <$5B in 2025)** due to mismanagement raised investor concerns.
- **Infrastructure & Urban Pressure**: Only **0.2% of India's landmass houses top 10 cities** (SC, 2024), straining resources in hubs like Bengaluru.
- **Skill Gaps & Brain Drain**: Lack of talent in AI, deep tech, clean tech. Many skilled researchers migrate abroad.
- **Weak R&D & IP Ecosystem**: India filed **66,000 patents in 2023** vs **China's 1.6 million**. Startups focus more on business models than core technology.
- **Exit Barriers**: IPOs like **Paytm (2021)** lost ~70% of value, discouraging investor exits.

Way Forward

- **Promote Indigenous Innovation**: Raise **R&D spending beyond 0.64% of GDP**; strengthen academia–industry collaborations.
- **Strengthen Domestic Financing**: Encourage pension funds, insurance companies to invest; promote equity crowdfunding.

- **Decentralise Startup Hubs**: Expand incubators and accelerators to Tier-2/3 cities.
- **Ease Regulations**: Simplify compliance and rationalise taxation (address Angel Tax).
- **Promote Inclusive Growth**: Implement targeted schemes for women, rural, and SC/ST entrepreneurs.
- **Global Best Practices**: Adopt Japan's **Credit Risk Database** for SME financing, and Singapore's **International Enterprise model** for global expansion.

Startups in India are not just wealth creators but also **agents of social transformation**, bridging gaps in finance, education, healthcare, and sustainability. To ensure they remain sustainable and globally competitive, India must focus on strengthening domestic financing, R&D, governance, and inclusivity. A vibrant startup ecosystem is crucial for achieving **Amrit Kaal goals of Viksit Bharat by 2047**.

29. SHIP BUILDING INDUSTRY OF INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

South Korean President Lee Jae Myung made a historic visit to India—the first by a South Korean leader in eight years—meeting with PM of India. This high-level interaction has injected positive momentum into bilateral strategic ties, paving the way for extensive collaboration to transform India's domestic shipbuilding industry.

INDIA'S SHIPBUILDING INDUSTRY:

India's shipbuilding industry is a **strategic sector** at the intersection of **economic growth, national security, international trade, manufacturing, and the Blue Economy**. Although India possesses a **7,500 km coastline**, **13 major ports**, over **200 non-major ports**, and one of the world's largest maritime workforces, it currently accounts for **less than 1% of global shipbuilding**, far behind East Asian giants.

Why Shipbuilding Matters

- Shipbuilding is not merely the construction of ships. It includes an integrated ecosystem of ship design, ship construction, ship repair & maintenance (MRO), marine equipment manufacturing, ship recycling, maritime logistics, port infrastructure and skilled workforce development.
- A strong shipbuilding industry creates backward linkages with steel, heavy engineering, electronics, defence manufacturing, renewable energy, AI and automation, logistics. Thus, shipbuilding acts as a **multiplier industry**.

Current Status of India's Shipbuilding Industry

Global shipbuilding share	**<1%**
Global ranking	Around **16th**
Global market leaders	China (47%), South Korea (25%), Japan (18%)
Industry value	**\$90 million (2022) → \$1.12 billion (2024)**
Projected size	**\$8–8.12 billion by 2033**
CAGR	~60%
Annual shipbuilding output	**0.072 million Gross Tonnage (GT)**

Target by 2030	**0.33 million GT**
Target by 2047	**4.5 million GT annually**
Indian maritime GDP contribution	**~4% of GDP**
Target contribution	**12% by 2047**
Share of Indian seafarers globally	**12%**
Target	**25% by 2047**

SIGNIFICANCE OF INDIA'S SHIPBUILDING INDUSTRY:

The shipbuilding industry is a **strategic manufacturing sector** that contributes to **economic growth, maritime security, industrial development, employment generation, logistics efficiency, and the Blue Economy**. Given India's aspiration to become a **$30 trillion economy by 2047** and a **top five shipbuilding nation**, strengthening domestic shipbuilding is both an economic necessity and a strategic imperative.

- **Strengthens India's Blue Economy:** Shipbuilding forms the backbone of the Blue Economy by supporting maritime transport, fisheries, offshore energy, coastal tourism, and marine resource exploitation.
    - The **Blue Economy contributes nearly 4% of India's GDP**, with the government targeting **12% by 2047**.
    - Around **95% of India's merchandise trade by volume** and nearly **70% by value** moves through the sea. Modern vessels improve efficiency in fisheries, offshore wind energy, deep-sea mining, and cruise tourism.
    - **Sagarmala Programme** integrates ports, shipbuilding, coastal industrialization and logistics to unlock the Blue Economy potential.
- **Enhances Maritime Security and National Defence:** India sits at the centre of the Indian Ocean Region (IOR), making maritime capability a critical national security concern. A strong domestic shipbuilding industry ensures indigenous warships, aircraft carriers, submarines, Coast Guard vessels, maritime surveillance ships
    - Nearly **90% of India's external trade** and almost all crude oil imports pass through sea routes.
    - India aims to become a **net security provider in the Indian Ocean Region.**
    - **INS Vikrant:** India's first indigenously built aircraft carrier. Built by **Cochin Shipyard Limited**. Over **76% indigenous content**. Demonstrates India's capability in complex naval engineering.
- **Boosts Manufacturing and Industrial Growth:** Shipbuilding stimulates demand across numerous industries due to its high multiplier effect. Every ship built creates demand for over **300 ancillary industries**.
    - The proposed **₹10,000 crore HD Hyundai–Cochin Shipyard project at Thoothukudi** is expected to create a complete maritime manufacturing ecosystem, including steel fabrication, marine equipment, logistics, and engineering services.

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- **Employment Generation:** Shipbuilding is one of the most labour-intensive manufacturing sectors. The government expects maritime investments to generate **millions of direct and indirect jobs** by 2047.
    - South Korea's shipbuilding industry supports **over 200,000 direct jobs**, demonstrating the employment potential India seeks to emulate.
- **Reduces Logistics Costs and Improves Trade Competitiveness:** India currently depends heavily on foreign-built vessels for cargo movement. Domestic shipbuilding helps reduce freight costs, improve coastal shipping, promote inland waterways, decongest roads and railways
    - India spends billions of dollars annually on foreign shipping services. Developing Indian-built merchant fleets reduces freight outflow and improves trade competitiveness.
    - The **National Waterways programme** requires hundreds of inland cargo vessels that can be domestically manufactured.
- **Reduces Import Dependence and Promotes Atmanirbhar Bharat:** India imports nearly **60–70% of marine equipment**, including marine-grade steel, propulsion systems, navigation electronics. Developing indigenous manufacturing reduces foreign exchange outflow, supply chain vulnerabilities and strategic dependence
    - The **Shipbuilding Development Scheme (SbDS)** encourages localization of marine components and industrial clusters.
- **Increases Export Potential:** Global shipbuilding is valued at approximately **US$200 billion annually**, but India holds **less than 1% market share**. As global firms diversify supply chains away from China, India has an opportunity to emerge as an alternative manufacturing hub.
    - **South Korea–India Partnership: HD Hyundai** plans a **US$4 billion greenfield shipyard** at Thoothukudi. **Samsung Heavy Industries** has partnered with **Swan Defence & Heavy Industries**. **KOMEA** (Korea Marine Equipment Association) has established an office in Mumbai to develop marine component clusters.
- **Supports Energy Security:** India imports nearly **85% of its crude oil**, most of which is transported through sea routes. Domestic construction of oil tankers, LNG carriers, offshore support vessels enhance energy security.
    - India's offshore oil fields in the **Mumbai High** region require specialized support vessels that can increasingly be built domestically.
- **Develops Coastal States:** Shipyards become centres of regional economic growth.
    - The upcoming **Thoothukudi Green Shipyard** is expected to transform southern Tamil Nadu into a major maritime manufacturing hub.
- **Promotes Green and Sustainable Shipping:** Global shipping contributes around **3% of global greenhouse gas emissions**. Future shipbuilding focuses on Hydrogen-powered ships, Methanol-powered vessels, Ammonia fuel, Electric ferries, AI-assisted navigation.
    - **Cochin Shipyard** launched **India's first hydrogen fuel-cell ferry**, supporting India's Green Hydrogen Mission.
- **Strengthens India's Strategic Position in the Indo-Pacific:** The Indo-Pacific has become the centre of global geopolitics. A strong shipbuilding ecosystem strengthens maritime diplomacy, naval exports, disaster relief capability, strategic partnerships
    - India exports patrol vessels to Mauritius, Maldives, Sri Lanka, Vietnam. Shipbuilding thus enhances India's maritime diplomacy.

- **Improves Ship Repair and Maintenance (MRO):** India's share in the global ship repair market is **less than 1%**, despite its strategic location. Developing MRO facilities can earn foreign exchange, reduce repair costs for Indian ships, position India as a regional repair hub.
  - Ships currently travel to Singapore Dubai Colombo for repairs due to better infrastructure. Expanding Indian MRO facilities under the **Maritime India Vision 2030** can reverse this trend.
- **Attracts Foreign Direct Investment (FDI) and Technology:** India permits **100% FDI under the automatic route** in shipbuilding and shipping.
  - Collaborations with **Hyundai**, **Samsung Heavy Industries**, and other global firms are introducing advanced modular construction, digital ship design, and automated production systems.
- **Supports Circular Economy and Sustainable Resource Use:** India is one of the world's leading ship recycling destinations. The **Shipbreaking Credit Note Scheme** links ship recycling with new shipbuilding.
  - Shipowners scrapping vessels at Indian yards receive a credit note worth **40% of the scrap value**, which can be used toward purchasing a new Indian-built ship.

Global shipbuilding market	~US$200 billion
India's global market share	<1%
China's market share	47%
South Korea's market share	25%
Japan's market share	18%
Maritime contribution to India's GDP	~4%
Target by 2047	12% of GDP
Merchandise trade by sea	~95% (volume), ~70% (value)
Annual shipbuilding capacity	0.072 million GT
Target by 2047	4.5 million GT
FDI in shipbuilding	100% automatic route
Marine equipment imports	60–70%
Average age of Indian-flagged fleet	21 years
Estimated vessels required for fleet replacement	~2,500

CHALLENGES OF INDIA'S SHIP BUILDING INDUSTRY:

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- **High Cost of Capital and Limited Access to Finance:** Shipbuilding is a **highly capital-intensive industry** requiring long-term, low-cost financing. Indian shipyards face significantly higher borrowing costs than global competitors
    - **Borrowing cost in India: 9–11%**. **China & South Korea: 4–6%**. Indian-built ships are estimated to be **15–20% costlier** than those built in East Asia.
- **Negligible Global Market Share and Intense Competition:** India has a marginal presence in the global shipbuilding industry despite its maritime potential. **India: <1%** global market share.
- **Fragmented Industrial Ecosystem:** Unlike successful shipbuilding nations, India lacks integrated shipbuilding clusters where shipyards, component manufacturers, research institutions, and logistics facilities operate together. Marine equipment suppliers are dispersed across different regions. Shipyards remain far from ancillary industries, increasing logistics costs and project timelines.
- **Heavy Import Dependence for Critical Components:** India imports a large proportion of high-value marine equipment. Approximately **60–70%** of critical components are imported, including marine-grade steel, propulsion engines, navigation systems, marine electronics
- **Inadequate Shipyard Infrastructure:** Indian shipyards have limited capacity to build very large commercial vessels. Most Indian dry docks are **smaller than 310 metres**. Unable to construct **Ultra Large Crude Carriers (ULCCs)** and some next-generation mega vessels.
- **Weak Domestic Demand for New Ships:** Indian shipping companies frequently prefer purchasing second-hand foreign vessels. Average age of India's merchant fleet: **21 years**. India requires nearly **2,500 new vessels** for fleet replacement.
- **Underdeveloped Ship Repair and Maintenance (MRO) Ecosystem:** India has not capitalised on its strategic location to become a global repair hub. India's share in the global ship repair market is **less than 1%**.
- **Technological Gaps and Low R&D:** Indian shipyards lag behind global competitors in advanced shipbuilding technologies. Areas of deficiency include automation, robotics, AI-enabled ship design, digital twin technology, green propulsion systems
- **Skill Shortages:** The industry faces shortages of specialised maritime professionals. **Gaps exist in** naval architecture, marine engineering, robotics, digital ship design, green propulsion technologies
- **Policy and Regulatory Bottlenecks:** Multiple approvals and inconsistent policies delay investments. Land acquisition delays, environmental clearances multiple regulatory agencies and lack of long-term policy certainty.

WAY FORWARD:

- **Develop Integrated Maritime Clusters:** India should establish **integrated shipbuilding clusters** where shipyards, marine equipment manufacturers, steel plants, R&D institutions, logistics providers, and training centres are co-located.
    - **South Korea's Ulsan Shipbuilding Cluster** integrates shipyards, component manufacturers, universities, and logistics, making it one of the world's most efficient maritime industrial ecosystems.
    - **National Shipbuilding Mission (2025)** proposes cluster-based development.
- **Ensure Availability of Long-term, Low-cost Finance:** Indian shipbuilders require access to globally competitive financing. Operationalise the **₹25,000 crore Maritime Development Fund (MDF)**.

Expand the **Shipbuilding Financial Assistance Scheme (SBFAS)** beyond 2026. Strengthen the **Credit Risk Coverage Framework** under the Shipbuilding Development Scheme.

- **Rangarajan Committee on Shipping (2022):** Recommended according **Infrastructure Status** to shipbuilding and facilitating long-term institutional finance.

- **Promote Indigenous Manufacturing of Marine Components:** Launch a **PLI Scheme for marine equipment** such as marine-grade steel, propulsion systems, navigation electronics, marine engines.
  - **Shipbuilding Development Scheme (SbDS)** promotes domestic manufacturing through common infrastructure.
- **Strengthen Research, Innovation and Green Shipbuilding:** Establish India as a leader in green hydrogen-powered vessels, ammonia and methanol-fuelled ships. Establish the **Indian Ship Technology Centre (ISTC)** under the **Indian Maritime University (IMU)**.
- **Modernise Shipyards and Ship Repair Facilities:** Upgrade existing shipyards with mega dry docks, robotics, modular construction, smart manufacturing. Develop India into a global **Ship Repair and MRO Hub**.
  - Maritime India Vision 2030 emphasises ship repair as a sunrise sector. **Singapore** has become one of the world's largest ship repair hubs through world-class infrastructure and quick turnaround time.
- **Create Stable Domestic Demand:** Government procurement should prioritise Indian-built vessels. Expand **Right of First Refusal (RoFR)**. Strengthen **Make in India** procurement norms.
- **Develop Skilled Maritime Human Capital:** The **National Shipbuilding Mission** envisages workforce development through partnerships with academia. South Korea integrates universities with shipbuilding clusters to ensure a continuous supply of skilled engineers.
- **Strengthen International Technology Partnership:** Leverage partnerships with South Korea Japan Norway Netherlands for technology transfer, joint R&D, green shipping, advanced automation
- **Improve Ease of Doing Business:** The **National Logistics Policy (2022)** advocates reducing regulatory bottlenecks and improving multimodal logistics, which would directly support shipbuilding competitiveness.
- **Build a Circular Maritime Economy:** Scale up the **Shipbreaking Credit Note Scheme**, under which shipowners scrapping vessels at Indian yards receive credit worth **40% of the scrap value** for purchasing new Indian-built vessels. **Alang (Gujarat)**, one of the world's largest ship recycling yards, can be integrated with new shipbuilding clusters to create a circular maritime ecosystem.

PRACTICE QUESTION

Q. "India's shipbuilding industry is central to the country's Blue Economy, maritime security, and manufacturing ambitions. However, structural bottlenecks continue to constrain its global competitiveness." Examine. (15 Marks, 250 Words)

APPROACH

Q. "India's shipbuilding industry is central to the country's Blue Economy, maritime security, and manufacturing ambitions. However, structural bottlenecks continue to constrain its global competitiveness." Examine. (15 Marks, 250 Words)

- **Introduction** → Start with a data on ship building industry
- **Body** → Explain the significance; Explain the challenges
- **Conclusion** → Provide way forward and conclude

MODEL ANSWER

India's shipbuilding industry is a strategic sector underpinning **economic growth, maritime security, international trade, and the Blue Economy**. Despite a **7,500 km coastline**, **13 major ports**, and over **200 non-major ports**, India accounts for **less than 1% of the global shipbuilding market**, while the Government aims to position India among the **top five shipbuilding nations by 2047** under the **Maritime Amrit Kaal Vision 2047**.

Significance of India's Shipbuilding Industry

- **Drives the Blue Economy:** Supports maritime transport, fisheries, offshore energy, tourism and marine resource utilisation. **Blue Economy contributes nearly 4% of GDP**, targeted to rise to **12% by 2047**. **Sagarmala Programme** integrates ports, shipbuilding and coastal industrialisation.
- **Strengthens Maritime Security:** Enables indigenous production of aircraft carriers, submarines and Coast Guard vessels. **INS Vikrant**, built by **Cochin Shipyard Ltd.**, has over **76% indigenous content**.
- **Promotes Manufacturing and Employment:** Generates demand for over **300 ancillary industries**, including steel, electronics and heavy engineering. Labour-intensive sector capable of generating large-scale coastal employment.
- **Enhances Trade Competitiveness:** Around **95% of India's merchandise trade (by volume)** moves through sea routes. Indigenous shipbuilding lowers freight dependence and logistics costs.
- **Supports Atmanirbhar Bharat:** Local manufacturing of ships and marine components reduces import dependence. **Shipbuilding Development Scheme (SbDS)** promotes localisation of marine equipment.
- **Boosts Exports and FDI:** Partnerships with **HD Hyundai**, **Samsung Heavy Industries** and **KOMEA** facilitate technology transfer and global market integration.
- **Advances Green Shipping:** Encourages hydrogen, ammonia and electric vessels. **Cochin Shipyard's hydrogen fuel-cell ferry** aligns with the National Green Hydrogen Mission.

Challenges Hindering Global Competitiveness

- **High Cost of Finance:** Borrowing costs of **9–11%**, compared to **4–6%** in China and South Korea, make Indian-built ships **15–20% costlier**.
- **Fragmented Industrial Ecosystem:** Lack of integrated shipbuilding clusters increases logistics costs and construction timelines.
- **Import Dependence: 60–70% of marine components** are imported, including propulsion systems and marine-grade steel.
- **Infrastructure Deficit:** Most Indian dry docks are **under 310 metres**, restricting construction of Ultra Large Crude Carriers (ULCCs).
- **Weak Domestic Demand:** Indian shipowners often purchase second-hand foreign vessels despite an ageing fleet of **21 years** requiring replacement.
- **Underdeveloped Ship Repair (MRO):** India's share in the global ship repair market remains **less than 1%**, with vessels preferring Singapore or Dubai for repairs.
- **Technology and Skill Gaps:** Limited R&D in automation, AI, green propulsion and shortage of specialised maritime professionals.

Way Forward

- Develop **integrated maritime clusters** under the **National Shipbuilding Mission**, drawing lessons from **South Korea's Ulsan model**.
- Operationalise the **₹25,000 crore Maritime Development Fund** and extend the **Shipbuilding Financial Assistance Scheme**.
- Implement the **Rangarajan Committee** recommendation on affordable long-term finance and infrastructure support.
- Establish the **Indian Ship Technology Centre (ISTC)** to drive innovation in autonomous and green shipping.
- Promote indigenous marine equipment through **PLI schemes** and strengthen **Make in India** procurement.
- Develop India as a regional **Ship Repair and MRO hub**, following the **Singapore model**.
- Scale up the **Shipbreaking Credit Note Scheme** to promote a circular maritime economy.

With global supply chains diversifying beyond East Asia and growing emphasis on the Blue Economy, India has a historic opportunity to emerge as a leading maritime manufacturing nation. A combination of **competitive financing, integrated industrial clusters, technological innovation, and policy stability** can transform shipbuilding into a key pillar of **Atmanirbhar Bharat** and **Viksit Bharat 2047**.

30. INDIA'S TEXTILE SECTOR

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development > Indian Economy and issues > Manufacturing sector

REFERENCE NEWS:

- The Ministry of Textiles successfully concluded the two-day **Textiles Summit 2026**, held from 23rd to 24th June 2026.

MORE ON NEWS:

- The summit brought together **States/UTs, industry, academia and Export Promotion Councils** to prepare an action-oriented roadmap for the textile sector.
- It emphasised execution of **District and State textile plans**, with focus on product-market mix, value addition, niche products and sustainability standards.
- Recommendations from stakeholders will be used to prepare a **National Textile Export Roadmap**, aligned with the target of **USD 100 billion textile exports by 2030**.
- Key discussions included better use of **FTAs**, **Districts as Export Hubs**, digital product passports, recycling, MSME compliance support, **market diversification** and promotion of **Brand India**.

INDIA'S TEXTILE SECTOR:

- India is the **world's second-largest producer of textiles and garments** and the **third-largest exporter**, covering apparel, home textiles, and technical textile products.
- The country holds a **4.6% share of global trade** and features among **the top five exporters in several categories.**
- The industry contributes around **2% of India's GDP** and about **11% of manufacturing GVA (Gross Value Added) as of February 2026.** (Source: IBEF)
- By 2030, the textile industry's share in GDP is expected to more than double, **reaching close to 5%.** (Source: IBEF)
- It is also the **second largest employment generators**, after agriculture, with **over 45 million people** employed directly, including many **women and the rural population.**
- As further evidence of the **inclusive nature** of this industry, **nearly 80% of its capacity** is spread across Micro, Small and Medium Enterprises (**MSME**) **clusters** in the country. (Source: Ministry of Commerce & Industry)
- Major textile and apparel **export destinations for India are USA and EU** and with around **47% share** in total textile and apparel exports. (Source: Ministry of Commerce & Industry)
- India is one of the **largest producers of cotton and jute** in the world. India is also the **2nd largest producer of silk** in the world and **95% of the world's hand-woven fabric** comes from India.
- **Second largest manufacturer of PPE and producer of polyester, silk and fibre** in the world.
- Total textile exports are expected to reach USD65 billion by FY26 and is expected to grow at 10% CAGR from 2019-20 to **reach USD190 billion by 2025-26.**

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Textiles and apparel exports from India (US$ billion)

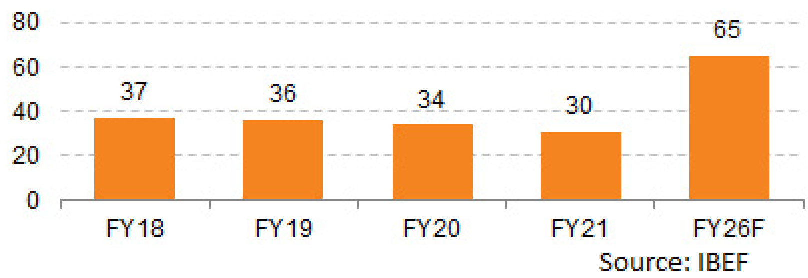
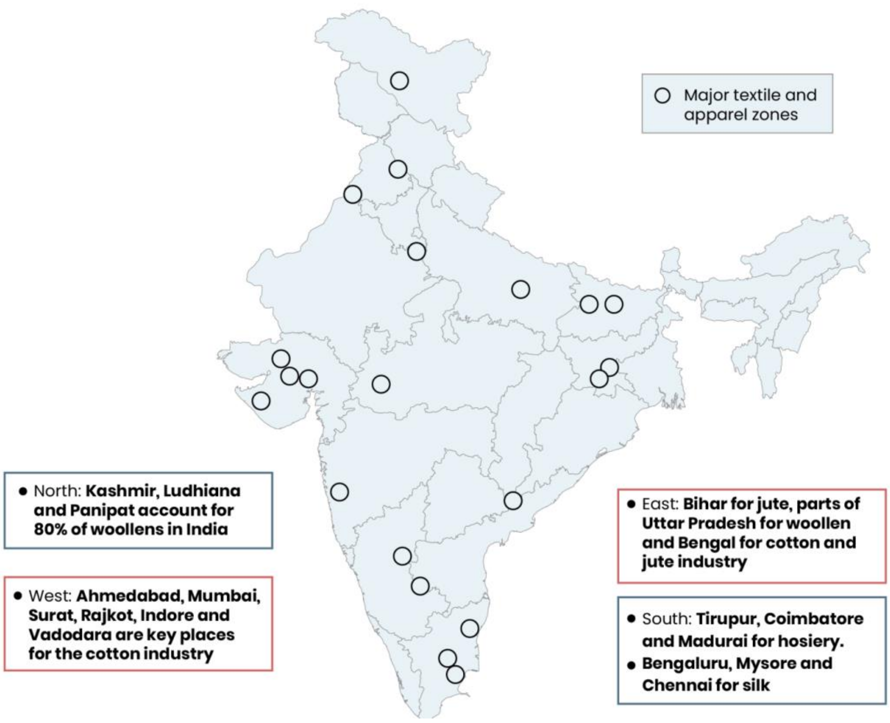


Figure 1.1. Textile and Apparel Centres of India



SIGNIFICANCE OF TEXTILE SECTOR

- **Contribution of the industry in India's GDP and exports:**
  - The textile and apparel sector contributes about **2.3% of India's GDP** and roughly **13% of industrial production**, and accounts for around **12% of exports**.
  - In FY24, textiles and apparel (including handicrafts) made up **8.21%** of India's total exports. (Source: Ministry of Commerce & Industry)
- **Employment generation:**
  - The textile industry is labour-intensive and supports large-scale employment. Approximately **45 million** people are employed directly in the sector (including in handlooms). (Source: Ministry of Commerce & Industry)
  - Considering **indirect and allied jobs (in transport, inputs, supply chain),** many estimates suggest the "textile ecosystem" supports **60–65 million** jobs or more.
  - The sector plays a vital role in **rural–urban livelihood** balance, bringing income opportunities to remote areas where weaving, knitting, and related activities are traditional occupations.
- **Position of India in global market:**

- India is the **world's second-largest producer of textiles, garments and man-made fibres** after China.
- Also, India is the **6th largest exporter of Textiles & Apparel in the world**.
- India is the **largest producer of cotton**, accounting for 25% of the global output. (Source: Ministry of Commerce & Industry)

- **Cultural significance:**
  - The textile industry is deeply intertwined with India's **cultural identity and heritage**—from handloom, khadi, regional weaving styles (e.g. Banarasi, Kanjivaram, Pochampally) to modern design applications.
  - It bridges **traditional craftsmanship and modern industrial scale**, representing India's **diverse textile traditions** alongside capital-intensive mill units.
- **Role in increasing farmer's income:**
  - Textiles rely heavily on **locally procured raw materials**, especially cotton, which **incentivizes cotton farming and supports agricultural income.**
  - For example, in the 2024–25 season, **cotton production** is estimated at ~302.25 lakh bales. (Source: India Brand Equity Foundation)
  - The government (through CCI) procured ~100 lakh bales under MSP, covering ~38% of cotton arrivals, showing active linkages between the textile and agricultural sectors.
- **Technical textiles hold immense growth opportunities in India:**
  - The scope of use of technical textiles encompasses a wide range of applications such as; **agro-textiles, medical textiles, geo-textiles, protection-textiles, industrial-textiles, sports-textiles and many other usages**.
  - Use of technical textiles have benefits of:
    - **Increased productivity in agriculture, horticulture and aquaculture fields**
    - **Better protection** of military, para-military, police and security forces
    - **Stronger and sturdier transportation infrastructure** for highways, railways, ports and airports
    - **Improving hygiene** and healthcare of general public.
- **Women empowerment:**
  - The textile sector is a **major employer of women**, especially in rural and semi-urban areas (spinning, weaving, stitching).
  - According to CMIE (Centre for Monitoring Indian Economy) the industry provides employment to **about 15 million women.**
  - By providing home-based or decentralized work, it helps **women's economic participation**, stability, and empowerment at the grassroots.
- **Foreign Exchange & Export Earnings:**
  - The textile industry is a significant earner of **foreign exchange** through exports of fabrics, garments, home textiles, handicrafts, etc.
  - In FY24, textile and apparel exports (including handicrafts) reached **US$ 34.4 billion**. (Source: Ministry of Commerce & Industry)
  - The **technical textiles** segment has seen strong export growth—India's technical textile exports have risen ~15% in recent years.

CHALLENGES IN THE TEXTILE SECTOR:

- **Structural Fragmentation:**
  - The Indian textile industry remains **highly fragmented, dominated by small and medium enterprises and unorganized clusters**.
  - This limits economies of scale, makes technology adoption uneven, and reduces global competitiveness compared to integrated producers in China and Vietnam.
- **Limited Access to Global Markets:**
  - **Competing nations like Bangladesh and Vietnam** enjoy duty-free access to Western markets through trade agreements.
  - Vietnam's FTA with the EU offers zero-duty exports, while Indian apparel faces 12–14% import duties.
  - Although **India–EU FTA talks** resumed in 2022 after an eight-year pause, **progress remains slow.**
  - **The recent U.S. tariff hike of 50%** on certain Indian textile products has further reduced export competitiveness.
- **Outdated Machinery and Low Technological Depth:**
  - Many textile units still rely **on old looms, dyeing, and finishing equipment.**
  - High energy use, poor automation, and low R&D investment limit productivity and product quality.MSMEs often lack funds to modernize despite government schemes such as ATUFS and PLI for Textiles.
- **Volatile Exports:**
  - **Global demand slowdown, tariffs, and weak logistics** have restrained growth of exports.
  - Export clusters such as Tiruppur and Surat face rising costs and tighter buyer requirements.
- **Limited Foreign Investment:**
  - Total FDI inflow since 2000 stands at around USD 4.47 billion — far below potential.
  - Factors include regulatory uncertainty, fragmented operations, infrastructure gaps, and low profit margins.
- **Environmental and Resource Constraints:**
  - The sector consumes **large volumes of water and energy.**
  - Many dyeing and processing units **fail to meet Zero Liquid Discharge (ZLD)** and effluent treatment norms.
  - **Groundwater depletion, pollution from chemical dyes, and limited renewable energy** use continue to raise environmental concerns.
- **Sustainability and Ethical Production Pressures:**
  - Global buyers **increasingly demand cleaner, traceable supply chains.**
  - Transitioning to sustainable production **requires costly upgrades** in water recycling, chemical management, and renewable energy.
  - Smaller manufacturers lack both capital and expertise to comply, and few buyers pay premium prices for eco-friendly goods.
- **Weak Waste Management and Recycling Systems:**
  - India generates over 7,500 kilotonnes of textile waste annually, **yet recycling remains minimal.**
  - Collection, sorting, and reuse infrastructure is poor, particularly for blended fabrics.

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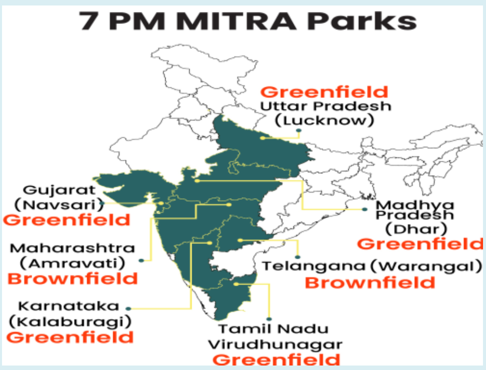
- Recycled fibres often have weak tensile strength — e.g., Tiruppur's imported hosiery waste from Bangladesh is suitable only for limited blends.

- **Market Inefficiency for Sustainable Goods:**
  - Eco-friendly products rarely receive higher prices in India's domestic market.
  - Low consumer awareness and weak labelling systems hinder demand for sustainable fabrics.Producers struggle to recover the additional costs of green manufacturing.
- **Global Standards and Compliance Complexity:**
  - Exporters must comply with **multiple sustainability and labour codes across markets (EU, US, Japan).**
  - Diverse certification systems increase costs and administrative burden.
  - There is rising fear that **sustainability-linked trade rules may become non-tariff barriers for developing countries like India.**
- **Changing Fashion Cycles and Market Dynamics:**
  - The global shift toward "slow fashion" and circularity is reducing the number of seasonal product launches.
  - Fewer fashion seasons mean lower output, idle capacity, and unstable employment in fast-turnaround apparel clusters.
  - **Brands are demanding smaller, flexible orders, challenging India's bulk-production model.**
- **Regional Imbalance and Decline of Traditional Sectors:**
  - Modern clusters (Surat, Tiruppur, Ludhiana) have advanced, **but traditional weaving and handloom sectors lag behind.**
  - Decline in marketing and institutional support has weakened artisanal livelihoods.
  - In areas like Mominpura (Nagpur), traditional saree weaving is being replaced by powerloom production.

<u>GOVERNMENT INITIATIVES:</u>

- **Production Linked Incentive (PLI)** Scheme for Textiles
- **PM MITRA Parks** (Mega Integrated Textile Region and Apparel Parks)



- **Amended Technology Upgradation Fund Scheme (ATUFS)**
- **100% FDI under Automatic Route**
- **Scheme for Integrated Textile Parks (SITP)**
- Cotton Technical Assistance Programme (Cotton TAP-I)
- Duty Exemptions for Shuttle-less Looms and Advanced Machinery
- **GST Rationalisation** (Correction of Inverted Duty Structure)
- **National Handicraft Development Programme** (NHDP – Handicrafts)
- Cluster Development Programmes (Silk, Jute, Cotton, Handloom)
- **Public Procurement Preference for Indian Textiles** (Swadeshi Campaign 2025)
- Rebate of State & Central Taxes and Levies (RoSCTL)
- **Free Trade Agreements** (UAE, Australia, EFTA; ongoing with EU, UK, Oman)
- Skill, Research & Design Promotion (NIFT, TRAs, Central Silk Board)
- Yarn Supply Scheme (YSS)
- Integrated Scheme for Development of Silk

- **National Technical Textiles Mission (NTTM)**
- **SAMARTH** (Scheme for Capacity Building in Textile Sector)
- **National Handloom Development Programme (NHDP)**
- **'Swadeshi Campaign'** aims to boost demand for Indian handloom, handicrafts and textiles by making them modern and stylish for **Gen Z, in line with Atmanirbhar Bharat.**

Industry **(Silk Samagra)**

- **JUTE – ICARE** (Improved Cultivation and Advanced Retting Exercise)
- Public Procurement by Jute Corporation of India **(MSP operations)**
- National Jute Board Schemes
- **Anti-Dumping Duty** on Jute Imports

WAY FORWARD:

- **Diversify Export Markets and Finalize Trade Agreements:** Conclude pending FTAs with the EU, UK, and Oman to secure tariff-free access and reduce dependence on a few markets like the US and EU.
- **Promote Modernization and Technology Upgradation:** Scale up ATUFS and PLI schemes to enhance automation, digital design, and sustainable production capacity, especially for MSMEs.
- **Develop Integrated Textile Hubs:** Accelerate the PM MITRA Parks for seamless infrastructure, logistics efficiency, and global competitiveness in the textile value chain.
- **Encourage Sustainable and Circular Practices:** Provide green finance, tax incentives, and R&D support for waste recycling, water reuse, and renewable energy adoption in textile clusters.
- **Boost Skill Development and Women Workforce Participation:** Expand SAMARTH training modules with a focus on digital textile design, e-commerce, and global fashion trends while strengthening women's participation.
- **Strengthen Branding and Domestic Awareness:** Promote Indian textiles through campaigns like *Swadeshi Campaign* and *Vocal for Local* to embed cultural pride and stimulate domestic consumption.
- **Enhance Ease of Doing Business and FDI Climate:** Simplify labour laws, ensure stable taxation, and provide single-window clearances to attract greater domestic and foreign investment.
- **Leverage Technical Textiles and Innovation:** Encourage use of technical textiles across infrastructure, healthcare, agriculture, and defence to tap into high-value global markets.

CONCLUSION:

- India's textile sector stands at the crossroads of tradition and transformation. With targeted reforms, green innovation, and global integration, it can evolve from a heritage industry into a modern manufacturing powerhouse contributing significantly to **Atmanirbhar Bharat** and inclusive economic growth.

PRACTICE QUESTION

Q. Discuss the significance of the textile sector in India. What are the major challenges faced by the sector in becoming globally competitive? (15 marks, 250 words)

APPROACH

Start with a 2-line intro linking textile sector with employment, exports and Textiles Summit 2026.

Q. Discuss the significance of the textile sector in India. What are the major challenges faced by the sector in becoming globally competitive? (15 marks, 250 words)

Introduction

Body
- Discuss the significance of the textile sector in India.
- Major challenges faced by the sector

Conclusion
- Provide way forward and conclude.

MODEL ANSWER

India's textile sector is one of the **oldest and most employment-intensive sectors** of the economy. In the context of **Textiles Summit 2026**, the sector has gained renewed importance due to its role in exports, sustainability, MSME development and the target of achieving **USD 100 billion textile exports by 2030**.

Significance of India's Textile Sector:

1. **Economic Contribution:** The textile and apparel sector contributes around **2.3% of India's GDP**, nearly **13% of industrial production**, and about **8.21% of India's total exports in FY24**.
2. **Employment Generation:** It is the **second-largest employment generator after agriculture**, providing direct employment to around **45 million people**. The wider textile ecosystem supports nearly **60–65 million jobs**.
3. **MSME and Inclusive Growth:** Nearly **80% of textile capacity is spread across MSME clusters**, making the sector vital for rural livelihoods, decentralised manufacturing and regional development.
4. **Global Position:** India is the **second-largest producer of textiles and garments**, the **sixth-largest exporter of textiles and apparel**, and one of the largest producers of cotton, jute and silk.
5. **Women Empowerment:** The sector employs nearly **15 million women**, especially in spinning, weaving, stitching and handloom activities, supporting women's economic participation.
6. **Cultural and Export Value:** Textiles reflect India's heritage through handloom, khadi, Banarasi, Kanjivaram and Pochampally traditions. In FY24, textile and apparel exports, including handicrafts, reached around **USD 34.4 billion**.

Major Challenges:

- **Structural Fragmentation:** The sector is dominated by small and unorganised units, limiting economies of scale and global competitiveness.

- **Limited Market Access:** Countries like Vietnam and Bangladesh enjoy better duty-free access, while Indian apparel faces higher import duties in some Western markets.
- **Outdated Technology:** Many units use old looms, inefficient dyeing systems and low automation, reducing productivity and product quality.
- **Sustainability Pressures:** Global buyers demand cleaner, traceable and ethical supply chains, but MSMEs often lack capital for green compliance.
- **Environmental Concerns:** The sector consumes large amounts of water and energy. Dyeing units also face issues related to effluent treatment and Zero Liquid Discharge norms.
- **Weak Recycling System:** India generates over **7,500 kilotonnes of textile waste annually**, but collection, sorting and recycling infrastructure remains weak.
- **Regional Imbalance:** Modern clusters like Surat, Tiruppur and Ludhiana have grown, while traditional handloom and artisanal sectors face decline.

Way Forward:

- Fast-track **PM MITRA Parks** to create integrated textile hubs with better logistics and infrastructure.
- Conclude pending **FTAs with the EU, UK and Oman** to improve tariff-free market access.
- Scale up **PLI and ATUFS** for modernisation, automation and technology upgradation.
- Promote **green finance, recycling, water reuse and renewable energy** in textile clusters.
- Strengthen **SAMARTH** with focus on women, digital design and global fashion skills.
- Promote **technical textiles** in agriculture, healthcare, defence, infrastructure and sports.
- Support MSMEs through simplified compliance, export finance and digital product passports.
- Build **Brand India** through Swadeshi Campaign, GI products, handloom promotion and sustainable fashion.

India's textile sector stands at the intersection of tradition and transformation. With modernisation, sustainability, skill development and export diversification, it can become a globally competitive manufacturing powerhouse while promoting inclusive growth, women empowerment and Atmanirbhar Bharat.

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