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Dear Aspirants,

Welcome to the **March edition of *iMPACT by CSB IAS***, as we continue to build momentum in your preparation with a sharp focus on linking current affairs to the Mains syllabus. Our effort remains to equip you with the analytical depth and clarity required for effective answer writing.

This edition covers a wide spectrum of high-value topics. Key highlights include the **Transgender Persons (Protection of Rights) Amendment Bill, 2026** and evolving questions of inclusion and rights; **India's revised GDP estimates and the new measurement framework**, reflecting changes in economic assessment; and the **Fiscal Health Index 2026**, offering insights into the quality of public finances. Social and ethical dimensions are addressed through discussions on **euthanasia in India**, including the *Harish Rana case*.

On the international front, we analyse the implications of the **Iran–Israel–US conflict** and assess **India's vulnerability to a Middle East oil crisis**. The edition also examines employment trends through the **PLFS Annual Report 2025**, providing a grounded understanding of labour market dynamics.

Together, these themes span governance, economy, social justice, and international relations—ensuring a well-rounded preparation. We hope this edition helps you refine your perspectives and strengthen your answers in the months ahead.

Wishing you focused preparation and steady progress.

Happy Learning!

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GENERAL STUDIES-I

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1. MELTING OF GLACIERS

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Geography > Geomorphology

REFERENCE NEWS:

- A new ISRO study on the **August 2025 Dharali flash flood** in Uttarakhand found that the disaster was likely **triggered by the collapse of an exposed ice** patch in the **nivation zone of the Srikanta Glacier.**
- The study strongly connects the disaster to **deglaciation**, that is, the ongoing retreat and thinning of glaciers **due to warming temperatures.**

  - **Nivation:** Nivation refers to the **erosion of ground beneath and around a snowbank**, mainly due to repeated **freezing and thawing**. Over time, this process can create a **nivation hollow**, a depression where snow tends to accumulate repeatedly.
  - **Cryosphere:** The part of the Earth system that contains all frozen water, including glaciers, ice caps, snow cover, sea ice, and permafrost.

MORE ON NEWS:

- The study explains that during the **ablation period** (when glaciers lose ice and snow) the protective cover of seasonal **snow and firn had thinned**. This left underlying glacier ice exposed on steep slopes. Once exposed, the **ice became more vulnerable** to warming, rainfall, fragmentation, and sudden collapse, which could release ice, meltwater, and debris downslope and trigger a flash flood.

Ablation period :The **ablation period/zone** is the time or area where **ice loss exceeds ice gain (accumulation)**, usually during warmer months.
Firn: Partially compacted, granular snow that survives at least one melt season and forms an intermediate stage between fresh snow and glacial ice.

- The researchers argue that this broadens the understanding of Himalayan glacier hazards. Attention should not remain limited to **glacial lake outburst floods (GLOFs)** alone; **smaller cryospheric instabilities like ice-patch collapse** can also create serious downstream disasters.
- Using satellite imagery, topographic analysis, and visual records, the study reconstructed the event and showed the value of pre-event satellite monitoring for early warning.

WHAT ARE GLACIERS?

- Glaciers are essentially **large and thick masses of ice** that are formed on land due to the **accumulation of snow** over centuries.

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- As per the **United States Geological Survey (USGS)**, glaciers typically form in regions where the mean **annual temperatures are close to the freezing point**. In these areas, significant snowfall occurs during winter, and the temperatures for the rest of the year do not completely melt the previous winter's snow accumulation.
- Due to their sheer mass and gravity**, glaciers tend to flow like very slow rivers.**
- Although there is no universal consensus on how large a mass of ice has to be to qualify as a glacier, the **USGS says a commonly accepted guideline is around 10 hectares.**
- The United Nations has dedicated **2025 as the International Year of Glaciers' Preservation**, focusing on the vital role of glaciers in global climate systems and hydrological cycles.
- Examples of glaciers include Lambert Glacier, Vatnajökull Glacier, and Hubbard Glacier globally, and Siachen Glacier, Gangotri Glacier, Zemu Glacier, and Pindari Glacier in India.

STATS:

- Presently, **10 percent of land area on Earth is covered with glacial ice**, including glaciers, ice caps, and the ice sheets of Greenland and Antarctica.
- Glacierized areas cover over **15 million square kilometers** (5.8 million square miles).
- During the maximum point of the last ice age, which ended about 12,000 years ago, **glaciers covered about 32 percent of the total land area.**
- Glaciers and ice caps store about **68.7 percent of the world's fresh water**, according to the US Geological Survey.
- Together, the Antarctic and Greenland Ice Sheets contain over 99 percent of the freshwater ice on Earth. The amount of fresh water stored in both the Antarctic and Greenland Ice Sheets totals over 68 percent of all the fresh water on Earth.
- The **UN has designated 2025 as the International Year of Glaciers' Preservation** to draw global attention to the importance of glaciers in the climate system, water cycle, and freshwater security.
- It has also proclaimed **21 March as the annual World Day for Glaciers** from 2025 onwards.**Led by UNESCO and WMO**, the initiative seeks to improve awareness, scientific observation, and international action in response to the accelerating loss of glaciers under climate change.

HUMBOLDT GLACIER

- Venezuela became the **first country in modern history to lose all its glaciers in 2024**, with the **Humboldt glacier being reclassified as an ice field**.
- The International Cryosphere Climate Initiative (ICCI) has indeed reported that the Humboldt or **La Corona Glacier** in the Andes has become **too small to be qualified as a glacier.**
- This reclassification is due to the glacier shrinking to **less than two hectares**, which falls below the commonly accepted **threshold of 10 hectares**

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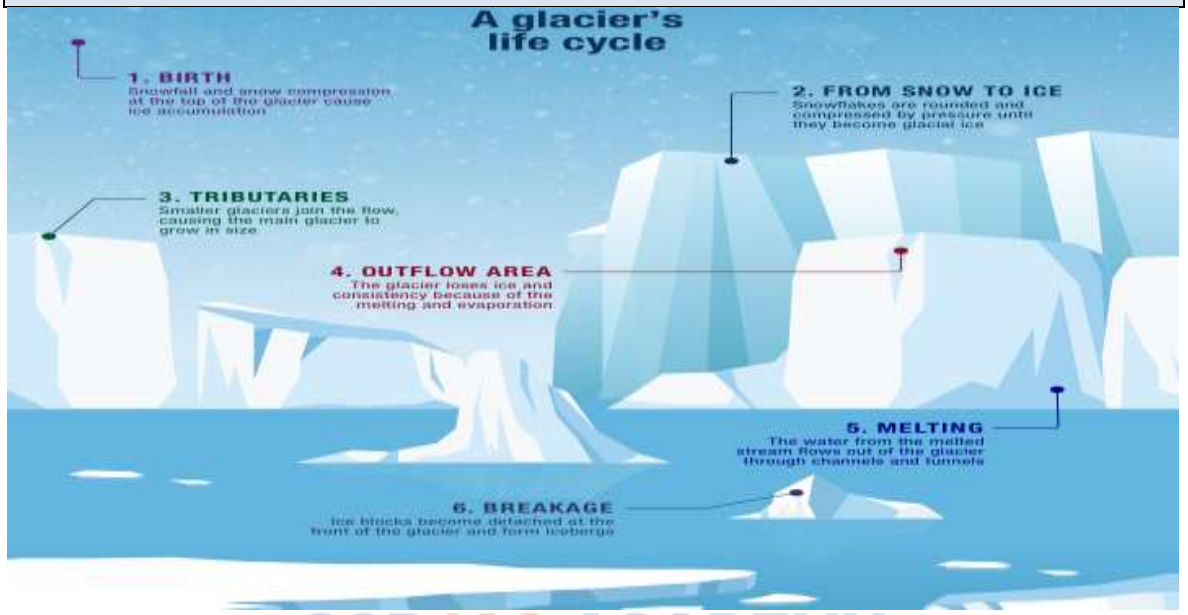
necessary for an ice mass to be considered a glacier.

- Venezuela was once home to **six glaciers**, all situated at approximately 5,000 meters above sea level in the **Andes Mountains**.
- By 2011, **five of these glaciers had disappeared**. Scientists initially predicted that the Humboldt Glacier would persist for another decade. However, it **melted more rapidly than anticipated** and has now reduced to less than 2 hectares.
- Much like the Humboldt Glacier, other **glaciers around the world are shrinking and disappearing faster than researchers anticipated.**



REASONS FOR MELTING OF GLACIERS

- **Global Warming:**
  - The primary cause of glacier melting is global warming, driven by increased greenhouse gas emissions from human activities like burning fossil fuels.
  - For instance, according to a 2023 study published in the journal Science, **two-thirds of the world's glaciers are projected to melt out of existence by 2100** if current climate change trends continue.
- **El Niño Phenomenon and Regional Temperature Increases:**
  - Specific regions, like the Andes, have experienced higher rates of temperature increase, contributing to accelerated glacier melting.
  - For instance, **El Niño**, an abnormal warming of surface waters in the equatorial Pacific Ocean, **leads to higher temperatures that accelerate glacier melting**.
  - The **2023 El Niño event caused temperature anomalies of +3°C to +4°C above the 1991-**

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2020 average in the Andean region of Venezuela, contributing to the rapid melting of the Humboldt glacier.

- **Loss of Albedo Effect:**
  - The albedo effect refers to the reflectivity of a surface. Ice and snow have high albedo, meaning they reflect most sunlight. As glaciers melt, they **expose darker surfaces that absorb more heat, further accelerating melting.**
  - **For instance,** in Greenland, the ice sheet's reflectivity has decreased due to surface melting and increased soot deposition, leading to more heat absorption.
- **Black Carbon Deposition:**
  - Black carbon, a component of soot, can settle on glaciers and ice fields, reducing their albedo and causing them to absorb more heat.
  - For instance, studies have shown that **black carbon from fossil fuel combustion and biomass burning is deposited on glaciers in the Himalayas**, contributing to their accelerated melting.
- **Atmospheric Changes:**
  - Changes in atmospheric circulation patterns can lead to increased temperatures and altered precipitation patterns, impacting glacier mass balance.
  - For instance, researchers found that **shifts in the jet stream have led to warmer temperatures in regions like the Alps**, accelerating glacier retreat.
- **Local Human Activities:**
  - Local activities such as **deforestation, mining, and construction** can contribute to regional warming and physical disruption of glaciers.
  - Deforestation in mountainous areas can reduce moisture levels and increase temperatures, leading to faster glacier melt. For instance, in the **Peruvian Andes, mining activities have been linked to localized glacier retreat** due to land disturbance and pollution.
- **Long-Term Climate Trends:**
  - Historical climate variations also play a role. Periods of natural warming and cooling have been observed over millennia, but the current rate of change is unprecedented.
  - As per a 2021 IPCC report, the **current rate of temperature increase is much higher than natural historical variations**, primarily due to human activities.

IMPACTS OF GLACIER LOSS

- **Freshwater Availability:**
  - Glaciers are vital sources of freshwater, particularly during dry periods, supporting drinking water, agriculture, and hydropower. For instance, in the **Andes**, **glacier retreat is causing water shortages and affecting hydroelectric power generation**, impacting millions in the Amazon basin (source: UNEP). Also, in India, the **Himalayan glaciers** support rivers like the **Ganges and Brahmaputra**, which are crucial for hundreds of millions of people.
- **Ecosystem Disruption:**

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- Glacial melt water helps **regulate downstream water temperatures**, which is critical for many cold-water aquatic species. The loss of glaciers disrupts these ecosystems, threatening species that rely on cold water and **affecting the entire food web**.

- **Sea Level Rise:**
  - Melting glaciers significantly contribute to global sea level rise. **Greenland** has lost over **1,000 gigatonnes of ice** since 1985, significantly contributing to rising sea levels and posing risks to coastal communities global.
  - In India, rising sea levels threaten densely populated coastal regions, including cities like Mumbai and Kolkata, increasing the risk of flooding and displacement.
  - **According to WWF**, the **Greenland ice sheet** is currently **disappearing four times faster than in 2003 and contributes 20% of current sea level rise**. If all the ice on Greenland melted, it would raise global sea levels by 20 feet (WWF).
- **Climate Feedback Loops:**
  - The reduction in glacier cover **decreases the Earth's albedo effect**, which reflects solar energy back into space. Less ice leads to **more heat absorption, further accelerating global warming and ice melt** in a feedback loop that exacerbates climate change.
- **Cultural and Economic Impacts:**
  - In regions like Venezuela, glaciers are **integral to local culture and tourism.** Their loss disrupts traditional practices and economic activities. Similarly, in India, the **Himalayas hold cultural and spiritual significance** for local communities and pilgrims. The retreat of glaciers affects tourism, agriculture, and traditional ways of life.
- **Hydrological Changes:**
  - The retreat of glaciers significantly affects the timing and quantity of water flow in rivers. In the Indian Himalayas, for instance, glacier melt is a critical factor for river basins that are fed by the monsoon. During the non-monsoon season, the **melt water from glaciers helps maintain river flow, making these rivers perennial.**
- **Global Climate Indicators:**
  - The state of the world's glaciers is a critical indicator of climate change. Record losses in regions like the European Alps highlight the accelerating impacts of global warming.
- **Changes in Weather Patterns:**
  - According to the WWF, the **Arctic is warming twice as fast as the rest of the Earth**, with sea ice declining by over 10% every decade. Melting ice reveals darker ocean patches, **reducing the cooling effect and increasing air temperatures**. This disrupts ocean circulation and has been linked to the polar vortex appearing more frequently outside the Arctic, impacting Gulf of Maine fisheries and causing more **destructive global storms and hurricanes.**

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WAY FORWARD:

- **Curbing Climate Change:** The most critical step in addressing glacier melt is to tackle the root cause: climate change. This requires **reducing global CO2 emissions**. **Key actions include** transitioning to renewable energy (wind, solar, hydroelectric), implementing energy-efficient technologies in industries, promoting sustainable agriculture and forestry, and enhancing public transportation and electric vehicle use. **International cooperation** and full implementation of agreements like **the Paris Agreement are essential.**
- **Engineering Solutions:** Innovative engineering solutions can help slow down glacier erosion and potentially restore some ice:
  - **Building Dams**: Propose constructing dams like the **100-meter-long one in front of Greenland's Jakobshavn glacier** to stabilize it.
  - **Artificial Icebergs**: Create hexagonal ice blocks from desalinated water to form large ice masses, as suggested by the "**Refreeze the Arctic" project.**
  - **Manufacturing More Ice**: Use **wind power to pump and spread ice from below glaciers to increase thickness**, a method proposed by the University of Arizona.
- **Enhancing Albedo Effect**
  - **Reducing Black Carbon Deposition**: Implement stricter regulations on fossil fuel combustion and promote cleaner technologies to decrease soot on glaciers.
  - **Protecting Snow Cover**: Preserve snow cover through conservation efforts and controlled land use practices to maintain high albedo levels.
- **Local and Regional Measures**
  - **Forestation and Reforestation**: Plant trees in mountainous regions to regulate local temperatures and moisture, slowing glacier retreat.

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- **Sustainable Development Practices**: Limit mining, construction, and deforestation in glacier-fed regions to minimize disruption and pollution.
- **Community Engagement**: Educate and involve local communities in conservation efforts to enhance regional measures' effectiveness.

- **Monitoring and Research**
  - **Satellite Monitoring**: Use satellite technology to monitor glacier changes in real-time for timely interventions.
  - **Climate Modeling**: Advance climate models to predict future scenarios and develop proactive measures.
  - **Interdisciplinary Research**: Encourage research involving glaciologists, climatologists, engineers, and social scientists for holistic and innovative solutions.

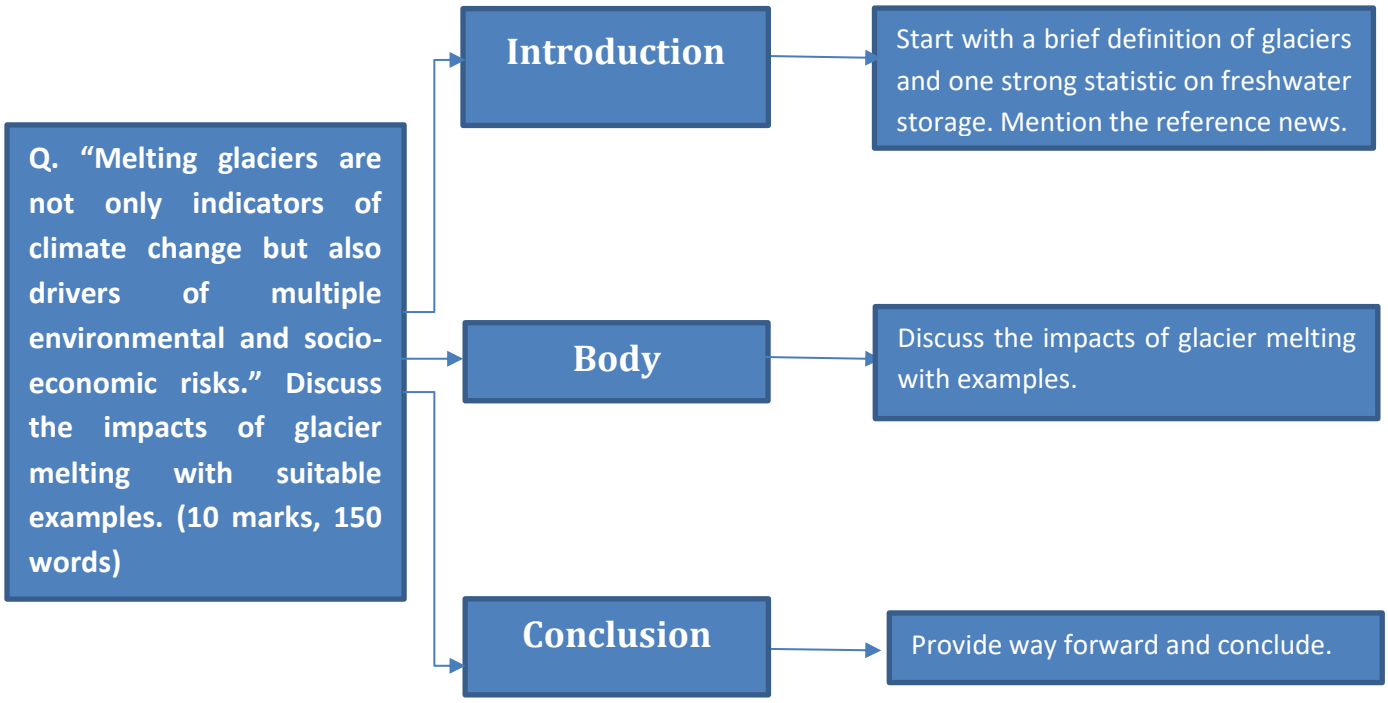
CONCLUSION:

- Glacier melting is not merely a geomorphological process but a warning signal of deepening climate instability, water insecurity, and rising disaster risk. The Dharali event shows that shrinking glaciers can create new and overlooked hazards; therefore, protecting glaciers through climate action, scientific monitoring, and local adaptation is essential for both ecological balance and human survival.

PRACTICE QUESTION

Q. "Melting glaciers are not only indicators of climate change but also drivers of multiple environmental and socio-economic risks." Discuss the impacts of glacier melting with suitable examples. (10 marks, 150 words)

APPROACH



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MODEL ANSWER

Glaciers are large moving masses of ice formed from long-term snow accumulation and they store nearly **68.7% of the world's freshwater**. The **ISRO study on the August 2025 Dharali flash flood** shows that glacier melting is not just a sign of climate change, but also a source of serious environmental and socio-economic risks.

Impacts of Glacier Melting:

1. Freshwater Insecurity:

- Glaciers act as **natural water reservoirs**, especially during dry seasons.
- Their retreat threatens rivers like **Ganga and Brahmaputra**, affecting millions dependent on agriculture and drinking water.

2. Increased Disaster Risk:

- Melting creates unstable conditions → **GLOFs, ice-patch collapse, flash floods**.
- Dharali event shows **new hazards beyond GLOFs**, linked to cryospheric instability.

3. Sea Level Rise:

- Glacier melt contributes significantly to global sea level rise.
- Greenland alone has lost **1000+ gigatonnes of ice since 1985**, threatening coastal cities like Mumbai and Kolkata.

4. Ecosystem Disruption:

- Cold-water ecosystems depend on glacier-fed rivers.
- Melting alters **temperature and flow**, threatening biodiversity.

5. Climate Feedback Loops:

- Loss of ice reduces **albedo**, increasing heat absorption.
- This accelerates warming → **self-reinforcing cycle of melting**.

6. Hydrological and Seasonal Changes:

- Alters river flow patterns—more floods in short term, **water scarcity in long term**.
- Weakens perennial nature of Himalayan rivers.

7. Socio-cultural and Economic Impacts:

- Affects tourism, livelihoods, and cultural landscapes (e.g., Andes, Himalayas).
- Example: **Humboldt Glacier (Venezuela)** disappearing reflects irreversible loss.

Way Forward:

- **Climate Action:** Reduce emissions via renewables and Paris Agreement commitments.
- **Monitoring:** Use satellite-based early warning systems (as shown by ISRO study).
- **Albedo Protection:** Reduce black carbon and preserve snow cover.
- **Sustainable Development:** Regulate mining, deforestation in mountain regions.
- **Local Adaptation:** Community awareness and water management strategies.

Glacier melting is a critical indicator of climate change with cascading environmental and socio-economic impacts. The **Dharali event** underscores emerging risks from deglaciation. Recognizing this, the UN has declared **2025 as the International Year of Glaciers' Preservation** and **21 March as World Day for Glaciers**, emphasizing the urgent need for coordinated global action.

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2. FERTILITY RATE IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Society > Population and Associated Issues

REFERENCE NEWS:

- Fertility decline has emerged as a major demographic concern in India. **Andhra Pradesh Chief Minister** N. Chandrababu Naidu recently introduced a **Draft Population Management Policy aimed at raising the State's Total Fertility Rate (TFR) from 1.5 to the replacement level of 2.1**, with incentives for families having a third child. He warned that continued decline in fertility could lead to **rapid ageing**, a shrinking workforce and economic stress, **citing examples such as Japan, Italy and South Korea.**

MORE ON NEWS:

- The issue has wider national relevance**. A Lancet study** projects that **India's fertility rate may fall to 1.29 by 2050**, well below the replacement level.
- **Southern States such as Kerala and Tamil Nadu already have very low TFRs**, raising concerns over ageing, labour shortages and even reduced demographic representation.
- At the same time, while **low fertility has some developmental advantages**, any attempt to raise fertility in **economically weaker States like Bihar and Uttar Pradesh** could worsen existing socioeconomic pressures.

TOTAL FERTILITY RATE (TFR):

- The **Total Fertility Rate (TFR)** is the **average number of children a woman would have during her lifetime** if she were to pass through her **childbearing years (15–49)** experiencing the present-day age-specific fertility rates
- **Replacement level fertility:**
  - Replacement level is the level of fertility at which a population **exactly replaces itself from one generation to the next**, without growing or shrinking in the long run, assuming no migration. It is usually taken as **about 2.1 children per woman**.

Why 2.1 and not exactly 2?

Because, in real populations, some children may not survive to adulthood and some adults may not have children. So the replacement level is kept **slightly above 2**.

What if TFR falls below replacement level?

If fertility stays **below replacement level for a long time**, the country or State can gradually face:

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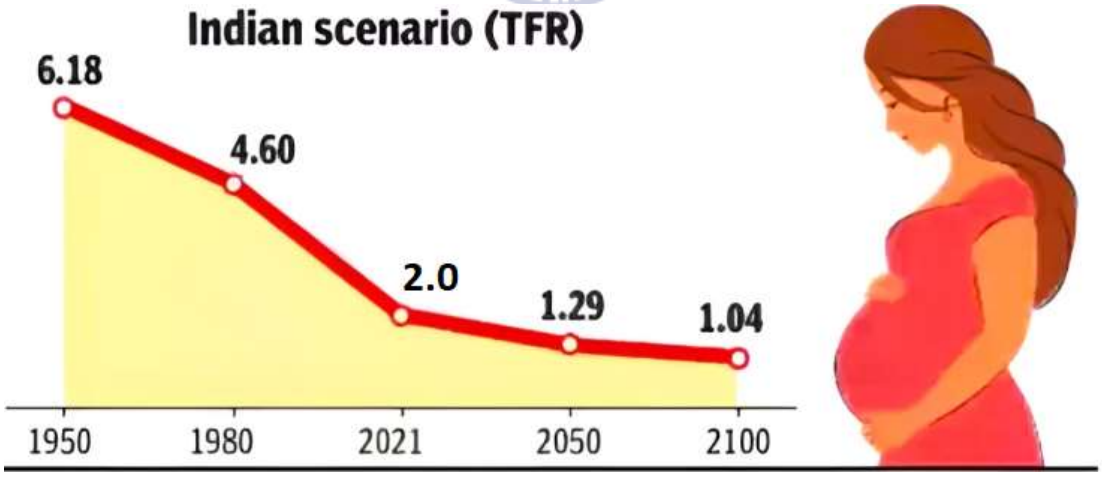
- **ageing population**
- **smaller future workforce**
- **higher dependency burden on working-age people**
- possible **population decline** in the long run, unless migration offsets it

This is a demographic consequence inferred from what replacement-level fertility means and from the UN's discussion of below-replacement fertility and late-stage demographic transition.

TFR IN INDIA:

- The **latest official annual estimate** available is from the **Sample Registration System (SRS) Report 2021**, released by the Registrar General of India in **May 2025**. It states that **India's Total Fertility Rate was 2.0 in 2021**.
- **Also,** the latest official large-scale household survey, **NFHS-5 (2019–21)**, also reported India's **TFR at 2.0**.
- A **2024 Lancet study** projected that India's Total Fertility Rate (TFR) could **fall to 1.29 by 2050**, well below the replacement level of around 2.1 children per woman.
- The total fertility rate in India **stood at 6.18 in 1950**, dropped to 4.60 in 1980, and subsequently decreased to **2.0 by 2021.**



- The **fertility rate in southern states has significantly declined**, with Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and Telangana all recording rates **well below the national average of 2.1 children per woman.** These rates are among the lowest in the country, similar to those in **developed nations.**

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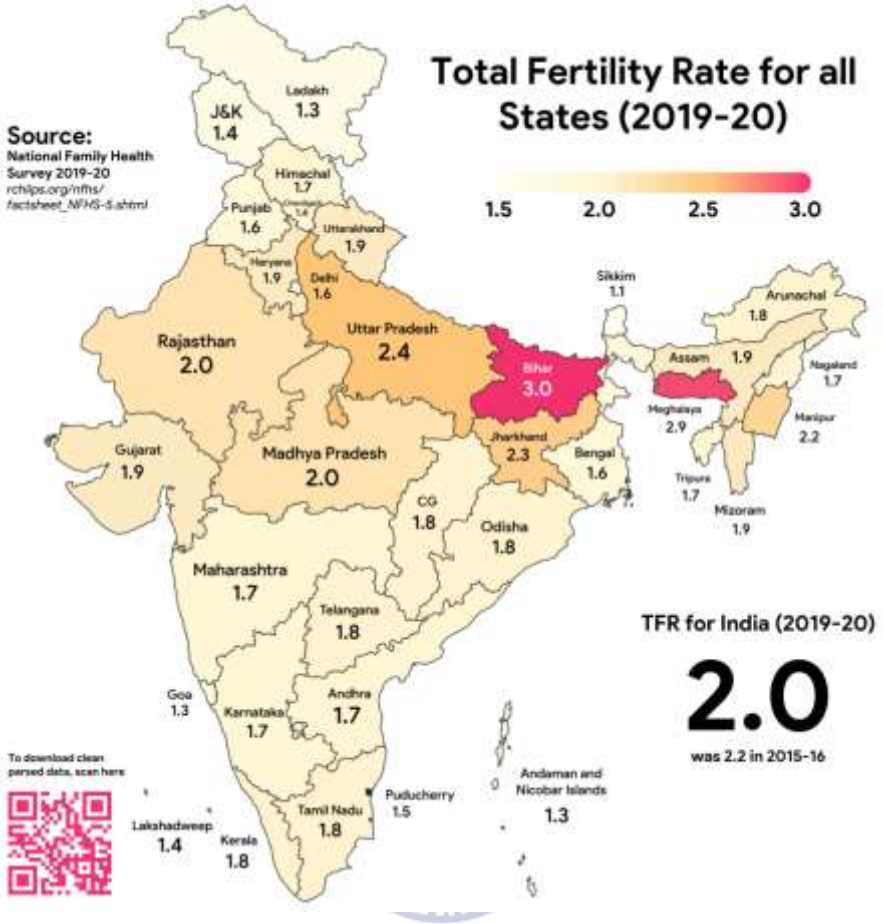

REASONS FOR THE FALLING FERTILITY RATE IN INDIA:

- **Wider use of contraception and family planning services**:
  - One major reason for fertility decline is the wider availability and acceptance of contraceptives and family planning services. Over time, this has enabled couples to **consciously plan births, delay pregnancies and limit family size.**
  - For instance, according to **NFHS-5 (2019–21), 66.7% of currently married women use some form of contraception**, up from **53.5% in NFHS-4 (2015–16)**. This reflects the growing social acceptance of **planned parenthood**.

- **Female education and literacy**:
  - Higher female literacy has had a strong fertility-reducing effect because educated women tend to marry later, **seek employment, exercise greater reproductive choice and prefer fewer children.**
  - For instance, **female literacy rose from 53.7% in 2001 to 68.4% in 2011 Census**, and states such as **Kerala and Tamil Nadu**, where female literacy is above 90%, record low TFRs of around **1.7 and 1.8** respectively.
- **Decline in infant and child mortality and reduced need for "insurance births"**:

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- Improved healthcare has reduced the need for "insurance births," where families earlier had more children because of uncertainty over child survival. **As infant and child survival improved**, parents became more confident with smaller families.
- For instance, **India's Infant Mortality Rate declined from 66 per 1,000 live births in 2001 to 28 in 2020 (SRS)**. Kerala, with a very low **IMR of 6**, also has a low fertility rate of around **1.7**.

- **Reinforcement through public policy and targeted schemes**:
  - Government schemes have reinforced this transition by improving maternal health, creating awareness and targeting high-fertility regions.
  - For instance, schemes such as **Janani Suraksha Yojana** and **Pradhan Mantri Matru Vandana Yojana** encouraged safer motherhood and institutional care, while **Mission Parivar Vikas** focused on high-fertility districts in states like Uttar Pradesh and Bihar, contributing to gradual fertility decline there as well.
- **Postponement of marriage and childbirth**:
  - As education and employment opportunities expanded, women have increasingly postponed marriage and childbirth. This **shortens the reproductive span** and lowers the number of children born over a lifetime.
  - For instance, **NFHS-5 shows that the median age at first marriage has risen to 19.9 years nationally**, while urban areas report even later marriages and lower fertility, with **urban TFR around 1.6**.
- **Strengthening of maternal and reproductive healthcare:**
  - Expansion of maternal health services, **immunisation, antenatal care and institutional deliveries** has improved confidence in reproductive outcomes and reduced the pressure for repeated pregnancies.
  - For instance, **institutional deliveries increased from 78.9% in NFHS-4 to 88.6% in NFHS-5**, showing the strengthening of health systems that indirectly support fertility decline by improving maternal and child survival.
- **Urban living and changing economic choices**:
  - Urbanisation has encouraged smaller families because of **high living costs, limited housing space, greater educational expenses and changing lifestyle preferences.** In cities, children are seen less as economic contributors and more as long-term investments requiring significant spending.
  - For instance, India's **urban population increased from 27.8% in 2001 to 34.9% in 2020**, and more urbanised states such as **Maharashtra (TFR 1.7)** show much lower fertility than states such as **Bihar (TFR 3.0)**.
- **Women's empowerment and workforce participation**:
  - Fertility has also declined because women now increasingly pursue education, employment and financial independence. Greater agency in household decisions has enabled women to choose smaller families and postpone second or third births.
  - For instance, **states with relatively better female work participation** and social development, such as **Karnataka**, show a lower TFR of around **1.7**.
- **Economic aspirations and quality-oriented parenting**:

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- Families today increasingly prefer investing more in fewer children rather than having many children with limited support. Rising aspirations regarding education, healthcare, lifestyle and social mobility have increased the perceived cost of child-rearing.
- For instance, **urban middle-class families often choose one or two children so they can provide better schooling, healthcare and living standards.**

- **Weakening son preference**:
  - Traditional son preference had earlier encouraged repeated childbirth until a male child was born. As awareness, female education and gender equality improve, this pressure is gradually reducing. For instance, **NFHS-5 shows an improvement in the sex ratio at birth to 929 girls per 1,000 boys**, suggesting some weakening of old gender-biased reproductive behaviour.

SIGNIFICANCE OF FALLING FERTILITY RATE IN INDIA:

- **Population stabilisation and reduced pressure on resources**:
  - A falling fertility rate helps stabilise population growth and reduces pressure on land, food, water, housing and public infrastructure. This can improve the **State's capacity to deliver services more effectively**.
  - For instance, **India's TFR has declined to 2.0 as per NFHS-5 (2019–21)**, which means the country is moving towards population stabilisation rather than rapid population expansion.
- **Opportunity to harness the demographic dividend**:
  - A decline in fertility initially produces a more favourable age structure, with a larger share of the population in the **working-age group relative to dependents.** This creates a window for higher savings, investment and economic growth if employment and skilling are ensured.
  - For instance, India is expected to remain in its **demographic dividend phase till around 2055**, with nearly **68% of its population in the working-age group**. States such as **Tamil Nadu and Kerala**, despite lower fertility, have benefited from better social indicators and economic dynamism.
- **Better per capita availability of capital and social infrastructure**:
  - Slower population growth means that existing capital resources and public infrastructure are shared among fewer people, improving per capita access. This can **strengthen human capital formation**.
  - For instance, a lower fertility rate improves the scope for better access to **schools, hospitals, colleges and skill institutions**, thereby improving the quality of service delivery.
- **Improved labour productivity and long-term economic gains**:
  - A smaller but healthier, educated and skilled population can be more productive than a rapidly growing but under-skilled population. Falling fertility therefore creates the possibility of **quality-driven growth rather than quantity-driven population expansion.**
  - For instance, countries such as **China effectively used a favourable demographic transition in the 1980s and 1990**s to accelerate economic growth, and some Indian states with lower fertility have similarly attracted investment through stronger human development outcomes.

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- **Better employment conditions and reduced labour market pressure**:
  - Moderation in population growth can ease pressure on labour markets by reducing excessive competition for low-quality jobs. Over time, this may improve wages, working conditions and bargaining power of workers.
  - For instance, industrially developed low-fertility regions such as the **southern states, Maharashtra and Gujarat** increasingly depend on migrant workers, indicating that labour scarcity can strengthen worker bargaining power and reduce exploitative conditions.
- **Greater participation of women in the workforce**:
  - Lower fertility **reduces the time burden associated with repeated pregnancies and prolonged childcare**, enabling women to participate more in education, work and public life. This has both economic and social significance. For instance, with smaller family sizes, women are better able to enter the labour market, and improvements in female work participation in several southern states show this broader trend.
- **Improvement in family-level quality of life**:
  - Smaller families allow **greater investment per child** in health, education, nutrition and skill development. This strengthens human development and social mobility.
  - For instance, **Kerala**, with a TFR of around **1.7**, also records very strong human development outcomes such as **literacy of 96.2%** and **life expectancy of 75.2 years**, reflecting how smaller family size can support better quality of life.
- **Reduction in maternal and child health risks**:
  - Fewer pregnancies reduce health risks for women and improve maternal recovery, while also enabling better childcare. This makes fertility decline an important public health gain. For instance, **India's Maternal Mortality Ratio declined from 130 per 100,000 live births in 2014–16 to 97 in 2018–20**, alongside fertility decline and improved maternal healthcare access.
- **Environmental and agricultural relief:**
  - A stabilised population can reduce pressure on agricultural land, forests, groundwater and urban ecosystems. It can also ease the ecological burden associated with unsustainable consumption and waste generation. For instance, slower population growth can help reduce pressures related to **loss of farmland, desertification, pollution and overuse of non-renewable resources**.

CONCERNS WHEN FERTILITY FALLS BELOW REPLACEMENT LEVEL

- **Ageing population and demographic disadvantage**:
  - When fertility remains below replacement level for a long period, the share of elderly people rises while the share of young people declines. This changes the population structure in ways that can burden the economy and welfare systems.
  - For instance, in **Kerala**, where TFR is around **1.7**, nearly **16.5% of the population is aged 60+**, compared to the national average of around **10.1%**. Similarly, **Japan**, with a TFR of about **1.4**, has more than **28% of its population aged 65+**.
- **Shrinking workforce and labour shortages**:

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- Over time, fewer births mean fewer entrants into the labour force, which can lead to workforce contraction, shortages in labour-intensive sectors and weaker economic momentum.
- For instance, **South Korea**, with a TFR of around **0.8**, faces declining productivity and increasing dependence on automation. In India too, low-fertility states such as **Tamil Nadu** are beginning to experience pressures in labour-intensive sectors.

- **Increase in non-developmental expenditure**:
  - An ageing population requires higher government spending on pensions, old-age care, social security and healthcare. This can divert resources away from developmental sectors such as infrastructure, education and capital formation. For instance, in countries such as **Germany and Italy**, where fertility has remained below **1.5**, pensions and elderly care account for a substantial share of public expenditure.
- **Risk to long-term economic growth and stability**:
  - A falling working-age population can reduce aggregate demand, weaken productivity growth and slow economic expansion. If not balanced by productivity gains, it may affect the economy's long-run competitiveness. For instance, **Japan's prolonged low fertility and shrinking labour force** have often been linked to slower economic growth and prolonged stagnation.
- **Smaller youth cohort and reduced innovation potential**:
  - Young people are often the most dynamic segment in terms of entrepreneurship, mobility, risk-taking and innovation. A shrinking youth population can narrow the "brain pool" available for new technologies and enterprise. For instance, a population pyramid with fewer young entrants may reduce the base for future innovation, start-ups and research dynamism.
- **Risk of low-fertility trap**:
  - Once fertility falls too low, it can become difficult to reverse because social norms, delayed marriage, high child-rearing costs and changing lifestyles reinforce each other. For instance, countries such as **Japan and Italy** have offered childbirth incentives, parental leave and financial support, yet fertility rates have remained stubbornly low.
- **Regional imbalances within India**:
  - Fertility decline is uneven across India. Some states are already facing ageing, while others continue to face high fertility, poverty and pressure on public services. This creates asymmetry in developmental priorities. For instance, **Kerala** faces ageing-related challenges, whereas **Bihar**, with a TFR of around **3.0**, still struggles with high population growth and poverty.
- **Concerns over political representation after delimitation**:
  - One major concern in India is that states which successfully reduced fertility earlier, especially in the South, may lose relative parliamentary representation if delimitation is based mainly on population. For instance, **southern states such as Tamil Nadu and Kerala** fear that their early demographic transition may translate into fewer seats, while northern states with larger populations could gain more representation.

- **Weakening of consumer demand in youth-oriented sectors**:
  - A lower fertility rate can gradually reduce the size of the young consumer base, affecting demand in sectors such as schooling, toys, housing, clothing and youth services. For instance, in **Japan**, declining youth population has contributed to **school closures** and contraction in youth-centric consumer markets.
- **Social isolation and strain on traditional family support systems**:
  - Smaller family sizes may weaken traditional intergenerational support structures, especially for the elderly. With fewer children, caregiving responsibilities intensify and elderly isolation may rise. For instance, **South Korea** has witnessed growing loneliness and mental health concerns among the elderly as family sizes shrink and traditional family structures weaken.
- **Long-term possibility of population decline**:
  - If fertility stays below replacement level for long enough, it can eventually lead to absolute population decline. This may affect economic size, market scale and even geopolitical influence. For instance, countries such as **Russia**, with low fertility, have adopted pro-natalist incentives partly out of concern that long-term population decline could weaken national strength.

WAY FORWARD:

- **Shift from population control to population balance**: India must move beyond a one-size-fits-all approach and adopt a balanced demographic strategy. Low-fertility states need support for ageing and workforce sustainability, while higher-fertility states still require investments in education, health and women's empowerment.
- **Follow a differentiated state-wise policy**: Regional disparities must guide policy design. For instance, states such as **Kerala and Tamil Nadu** need elderly care systems and labour-force planning, whereas **Bihar and Uttar Pradesh** need faster fertility transition through better female literacy, reproductive healthcare and social development.
- **Adopt family-friendly rather than coercive pro-natalist measures**: Where fertility is already very low, India can consider non-coercive support measures such as **tax relief, subsidised childcare, maternity and paternity benefits, housing support and education incentives**. For instance, **France** uses child benefits, tax exemptions and public daycare, while **Sweden** supports families through long paid parental leave.
- **Reduce the economic burden of child-rearing**: Any attempt to stabilise fertility must make parenting more affordable. Policies should focus on childcare infrastructure, affordable schooling, maternal support and work-life balance rather than mere cash incentives. For instance, **Singapore** combines housing and education subsidies to support families with children.
- **Convert demographic dividend into productivity dividend**: A lower fertility rate becomes an asset only when backed by jobs, skilling and higher labour productivity. India must therefore invest in skill development, vocational training and technological education so that a smaller future workforce remains more productive.
- **Raise female labour force participation**: Women's empowerment should remain central. Safe workplaces, equal wages, crèches, flexible work arrangements and parental support systems can

help women combine work and family life, reducing the trade-off between fertility and employment.

- **Prepare early for an ageing population**: India must build an elder-care architecture before ageing intensifies. This includes pensions, geriatric healthcare, social security, assisted living and elder-friendly urban infrastructure. Low-fertility states, in particular, need to prepare now for higher old-age dependency.
- **Use technology to offset future labour shortages**: As seen in countries facing population decline, technology can reduce dependence on sheer labour numbers. India should invest in **automation, AI, smart manufacturing and efficient urban infrastructure**. For instance, **Japan** has used robotics in healthcare and manufacturing to cope with workforce decline.
- **Promote balanced urbanisation and regional development**: India should strengthen second-tier cities and towns so that employment, education and healthcare opportunities are more evenly spread. This will reduce excessive pressure on megacities and support more balanced family and labour patterns across regions.
- **Consider calibrated migration and labour mobility solutions**: Where specific labour shortages emerge, India can address them through internal labour mobility and, where necessary, selective skilled migration. For instance, countries like **Canada and Germany** have used immigration to sustain workforce needs, though India would need a carefully calibrated model suited to its own context.
- **Ensure federal fairness in delimitation and representation**: Future delimitation should not penalise states that achieved fertility decline early. Population stabilisation should not translate into political disadvantage for southern states; federal equity must be preserved in representation and fiscal design.
- **Align demographic policy with sustainable development**: Population strategy must be integrated with resource conservation, employment creation, human development and environmental sustainability so that demographic balance does not come at the cost of ecological stress or social inequality.

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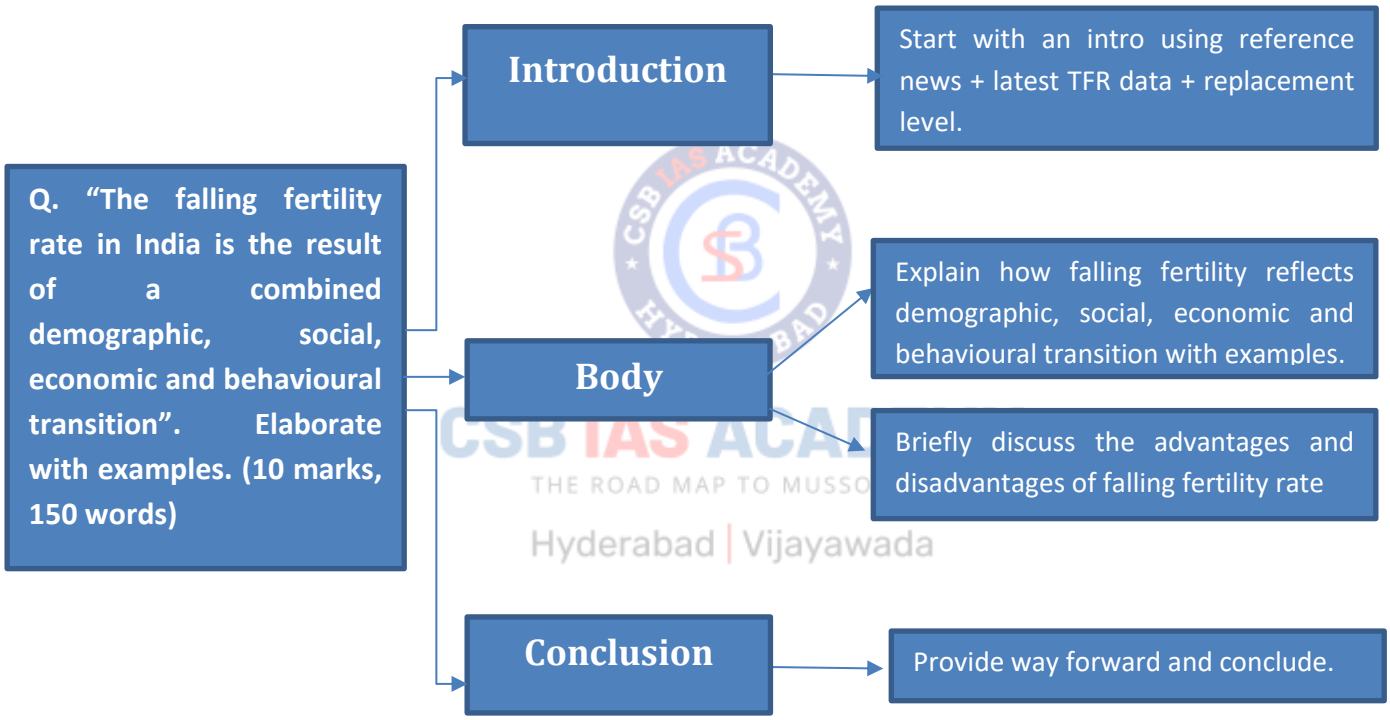
CONCLUSION:

- Falling fertility in India is both a development gain and a long-term policy challenge. The way forward lies in a balanced, state-specific approach that combines family support, women's empowerment, productivity growth, ageing preparedness and federal fairness, so that demographic transition strengthens rather than weakens India's future.

PRACTICE QUESTION

Q. "The falling fertility rate in India is the result of a combined demographic, social, economic and behavioural transition". Elaborate with examples. (10 marks, 150 words)

APPROACH



MODEL ANSWER

India's **Total Fertility Rate (TFR)** has declined sharply from **6.18 in 1950 to 2.0 in 2021** (SRS; NFHS-5), below the replacement level of **2.1**. A **2024 Lancet study** projects that it may fall further to **1.29 by 2050**. The issue recently gained policy attention when **Andhra Pradesh proposed incentives to raise fertility**, citing concerns of ageing and workforce decline. Thus, falling fertility in India reflects a broader **demographic, social, economic and behavioural transition**.

FACTORS BEHIND THE DECLINE IN FERTILITY RATE IN INDIA:

- **Demographic Transition:**
  - India is passing through an advanced stage of demographic transition marked by lower birth rates and lower death rates. Improved healthcare has reduced infant and child mortality, thereby lowering the need for "insurance births."

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- For example, **IMR declined from 66 per 1,000 live births in 2001 to 28 in 2020**. Better maternal and child survival has made smaller families more viable.

- **Social Transition**
  - Social change has significantly altered reproductive preferences. Rising **female literacy, gender awareness and changing family norms** have shifted India from large-family preferences to small-family norms.
  - For example, **female literacy rose from 53.7% in 2001 to 68.4% in 2011**, and states such as **Kerala and Tamil Nadu**, with very high female literacy, report TFRs of around **1.7–1.8**. Declining son preference has also reduced repeated childbirth.
- **Economic Transition**
  - Economic development has increased the cost of raising children and changed family aspirations. Urbanisation, expensive education, housing pressures and lifestyle changes have encouraged couples to have fewer children.
  - For example, India's **urban population rose from 27.8% in 2001 to 34.9% in 2020**, and urbanised states such as **Maharashtra (TFR 1.7)** show much lower fertility than states such as **Bihar (around 3.0)**. Families increasingly prefer investing more in fewer children.
- **Behavioural Transition**
  - Fertility decline is also driven by changing behaviour and reproductive choices. Greater acceptance of contraception, delayed marriage and rising women's workforce participation have encouraged planned parenthood.
  - For example, **66.7% of currently married women use some form of contraception (NFHS-5)**, up from **53.5% in NFHS-4**. Further, the **median age at first marriage has risen to 19.9 years**, reducing the reproductive span.

Low Fertility: Advantages and Disadvantages:

Advantages	Disadvantages
Population stabilisation	Ageing population
Better per capita resources	Shrinking workforce
Demographic dividend	Higher welfare burden
Better child welfare	Slower economic growth
Higher female work participation	Regional imbalances
Lower environmental pressure	Risk of population decline

Way Forward:

- India should adopt a **balanced, state-specific demographic strategy**. Low-fertility states need policies for **ageing, elder care and labour-force sustainability**, while higher-fertility states need

continued investment in **female education, healthcare and social development**. At the same time, India must strengthen **childcare support, women's employment, skilling and productivity** so that fertility decline becomes a developmental gain rather than a demographic burden.

Thus, falling fertility in India is not the result of a single factor, but of interlinked **demographic, social, economic and behavioural transitions**. The challenge is not merely lower fertility, but managing it in a way that sustains growth, equity and demographic balance.

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3. PARENTAL LEAVE IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Women

REFERENCE NEWS:

The Supreme Court **struck down Section 60(4) of the Social Security Code, 2020** (earlier Section 5(4) of the Maternity Benefit Act, 1961) holding the restriction **unconstitutional and arbitrary**. The provision limited **12 weeks of paid maternity leave only to adoptive mothers of children below 3 months**.

All adoptive mothers are now entitled to 12 weeks of paid maternity leave, regardless of the child's age. The Court recognised that adoptive mothers have **equal rights and responsibilities** as biological mothers.

MATERNITY LEAVE IN INDIA:

- **Pre-Independence Phase:** Maternity protection in India began with **provincial legislations** like the **Bombay Maternity Benefit Act, 1929**. These laws were limited in scope, covering mainly **women factory workers**. Objective was to protect **health of mother and child** and ensure minimal economic security during childbirth.
- **Post-Independence Framework: Maternity Benefit Act, 1961, a uniform national law** was enacted in 1961. Key provisions:
  - **12 weeks paid maternity leave**
  - Applicable to establishments with **10 or more employees**
  - Focus on **biological motherhood**
  - Constitutional backing: **Article 42,** provision for **just and humane conditions of work and maternity relief.**
  - Established maternity relief as a **welfare measure and labour right**, not charity.
- **Rights-Based Expansion:** Shift from welfare to **fundamental rights perspective**
  - In **Suchita Srivastava v. Chandigarh Administration (2009):** SC held that **reproductive choices are part of Article 21 (Right to Life)**
  - In **K. Umadevi v. Government of Tamil Nadu (2022):** Maternity benefits linked to **dignity, privacy, and health rights**
- **Transformative Reform through 2017 Amendment:** The **Maternity Benefit (Amendment) Act, 2017** brought major changes:
  - **26 weeks leave** for first two children
  - **12 weeks** for subsequent children
  - Introduced benefits of 12 weeks for: **Adoptive mothers (of child below 3 months), Commissioning (surrogacy) mothers**
  - Mandatory **crèche facilities** (≥50 employees), with maximum 4 visits a day

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- Provision for **work-from-home**
- Among the **highest maternity leave durations globally.** Recognised **changing family structures (adoption, surrogacy)**

- **Code on Social Security, 2020:** Consolidated labour laws including maternity provisions. Retained 26-week leave for biological mothers and **12 weeks for adoptive mothers (with restriction: child < 3 months).** This created **unequal treatment** between biological and adoptive mothers.
- In **Hamsaanandini Nanduri v. Union of India (2026):** SC struck down **Section 60(4)** (3-month age cap). Held it **violates Article 14 & 21.**
    - **All adoptive mothers regardless of the child's age** are entitled to maternity benefits. Corrected **"illusory benefit"** (since <5% adoptions were under 3 months). Strengthened **child welfare + equality jurisprudence.**
    - The Court emphasised maternity leave is essential for **bonding, emotional development, and child integration**. Older adopted children may need **greater emotional support**, especially those from institutional care.
- **Paternity leave:** Only **15 days for government employees.** No universal legal framework yet.
    - **On Paternity Leave,** the Court urged the Union Government to **enact a comprehensive law on paternity leave**.
    - Highlighted the need for **shared parenting**. Current framework is inadequate (only **15 days leave for government employees**).
- There has been an increasing recognition of **gender equality, child-centric policy and shared parenting**

SIGNIFICANCE OF PARENTAL LEAVE IN INDIA:

Maternity leave and the broader idea of **parental leave** is not merely a welfare measure. It is a **multidimensional policy tool** impacting health, gender justice, labour markets, and child development.

- **Health & Nutrition Outcomes (Mother and Child):** Ensures **postnatal recovery** and reduces maternal mortality risks. Enables **exclusive breastfeeding (first 6 months)**, critical for immunity and nutrition.
    - WHO recommends **6 months exclusive breastfeeding**, aligning with India's **26-week leave**. International Labour Organization links paid maternity leave with **better maternal and infant health outcomes**.
- **Child Development & Emotional Security:** Early months are crucial for **cognitive development, emotional bonding and stress regulation,** particularly important for **adopted children** transitioning from institutional care.
    - In Hamsaanandini Nanduri v. Union of India (2026) SC emphasised **bonding time and integration into family** and recognised higher stress levels in institutionalised children.
- **Gender Equality & Workplace Justice:** Reduces the **"motherhood penalty"** in employment. Supports women's **continuity in workforce**. Recognises **care work as economic contribution**.
    - Female Labour Force Participation Rate (FLFPR) in India ~ **37% (PLFS 2023-24)**—still low. Lack of maternity support is a **major reason for dropouts**.

- K. Umadevi v. Government of Tamil Nadu (2022): SC held maternity benefits are part of **dignity, health, and non-discrimination under Article 21**

- **Constitutional & Human Rights Dimension:** Rooted in **Article 42**, **Article 14** , **Article 21**.
  - Suchita Srivastava v. Chandigarh Administration (2009): Recognised **reproductive choice as a fundamental right**
  - 2026 SC ruling: Extended this to **adoption as reproductive autonomy**
- **Economic Productivity & Demographic Dividend:** Retaining women employees reduces **hiring and training costs and skill loss** and enhances **human capital utilisation**
  - World Bank: Increasing women's workforce participation can significantly boost GDP
  - Countries with strong parental leave (e.g., Nordic nations) show: Higher **female employment rates** and better **productivity outcomes**
- **Social Justice & Inclusivity:** Recognises **adoptive mothers, single parents and surrogacy arrangements.**
  - Hamsaanandini Nanduri v. Union of India (2026): Removed discrimination based on **child's age in adoption.** Court termed earlier provision as **"illusory"**
- **Towards Shared Parenting: Need for Paternity Leave:** Reduces **gendered burden of care work.** Promotes **father-child bonding.** Improves **women's return-to-work rates**
  - SC (2026) urged recognition of **paternity leave as social security right**
- **Addressing Structural Gender Inequality (Wollstonecraft Dilemma):** Women face dual burden **paid work + unpaid care work.** Maternity/parental leave acts as **corrective justice** and recognises **care economy.** Maternity benefits are **not charity**, but **equity-based entitlement.**
- **International Commitments & Standards:** International Labour Organization Convention No. 183 minimum **14 weeks maternity leave.** India exceeds this with **26 weeks**, showing **progressive alignment.**

CHALLENGES:

- **Exclusion of Informal Sector:** The **Maternity Benefit Act, 1961** applies mainly to establishments with **≥10 employees**. Nearly **90% of India's workforce is informal**, letting most women excluded.
  - PLFS data: Majority of female workers are in **informal/unorganised sector**.
  - No paid leave and thus women often **return to work early or drop out entirely**.
- **Employer Burden causes hiring discrimination:** Cost of maternity leave is **fully borne by employers** (unlike social insurance models). Leads to preference for **male employees** and avoidance of hiring women of **childbearing age.**
  - International Labour Organization notes employer-liability models increase **gender discrimination in hiring**. Surveys indicate women face questions on **marriage/child plans during recruitment**.
- **Low Female Labour Force Participation:** India's FLFPR remains around **30–37% (PLFS)**. Maternity-related career breaks contribute to **dropout after childbirth** and difficulty in re-entry into workforce.
  - World Bank: India has one of the **lowest FLFPR among major economies**. "Motherhood penalty" is a major structural factor.

- **Unequal Burden of Care (Lack of Paternity Leave):** Parental responsibilities remain **mother-centric**. Paternity leave only **15 days for government employees** reinforces **gender stereotypes**.
- **Inadequate Implementation of Crèche Facilities:** Law mandates crèches for establishments with **≥50 employees**. Many MSMEs fall below threshold are facing a massive **exclusion.** Even where available, facilities often **non-functional or symbolic**
- **Exclusion of Gig, Platform & Self-Employed Workers:** Rapid growth of gig economy (delivery, ride-hailing, freelancing) where there is no clear maternity/parental benefits under current framework.
    - Code on Social Security, 2020 recognises gig workers but **implementation remains weak**.
- **Unequal Treatment Across Sectors:** Public vs private sector disparity. Many private firms offer minimum compliance or less (especially startups/SMEs). No **uniform national parental leave framework**
- **Fiscal Concerns & MSME Constraints:** Small businesses struggle with paying **26 weeks salary without output.** Leads to informal hiring and contractualisation of women workers
- **Urban-Rural and Class Inequality:** NSSO/PLFS trends show rural women concentrated in **agriculture & informal work** leads to **inequitable access to maternity protection.**
- **Lack of Awareness & Enforcement Deficit:** Many women are unaware of entitlements and face denial or forced resignation
- **Reinforcing Gender Roles (Unintended Effect):** Long maternity leave without parallel paternity leave reinforces idea that **childcare = woman's responsibility**
    - SC (2026) referred to **"Wollstonecraft dilemma"**: Conflict between **workplace equality and caregiving expectations**

WAY FORWARD:

- **Shift to Social Insurance Model:** Move from **employer-paid leave to shared financing (State + employer + insurance)**. Create a **maternity/parental benefit fund** under social security.
    - Germany: parental benefits funded through **social insurance**.
    - Sweden: state-funded parental leave reduces hiring bias.
- **Universal Coverage Including Informal & Gig Workers:** Extend benefits via **Direct Benefit Transfer (DBT)** and integration with **ESI / Social Security Code schemes**
    - Brazil: cash maternity benefits even for informal workers
    - International Labour Organization recommends **universal maternity protection floors**
    - Link with PMMVY (Pradhan Mantri Matru Vandana Yojana), Gig worker provisions under Social Security Code
- **Introduce Comprehensive Paternity & Parental Leave Law:** Enact **gender-neutral parental leave framework.** Provide mandatory **paternity leave (at least 2–4 weeks initially) and shared parental leave pool.**
    - Norway: "use-it-or-lose-it" father quota
    - Iceland: equal parental leave for both parents
- **Strengthen Crèche Ecosystem & Childcare Infrastructure:** Expand beyond ≥50 employee rule, encourage **cluster-based/community crèches,** public-private partnerships for **workplace childcare.**
    - France: strong **public childcare system**

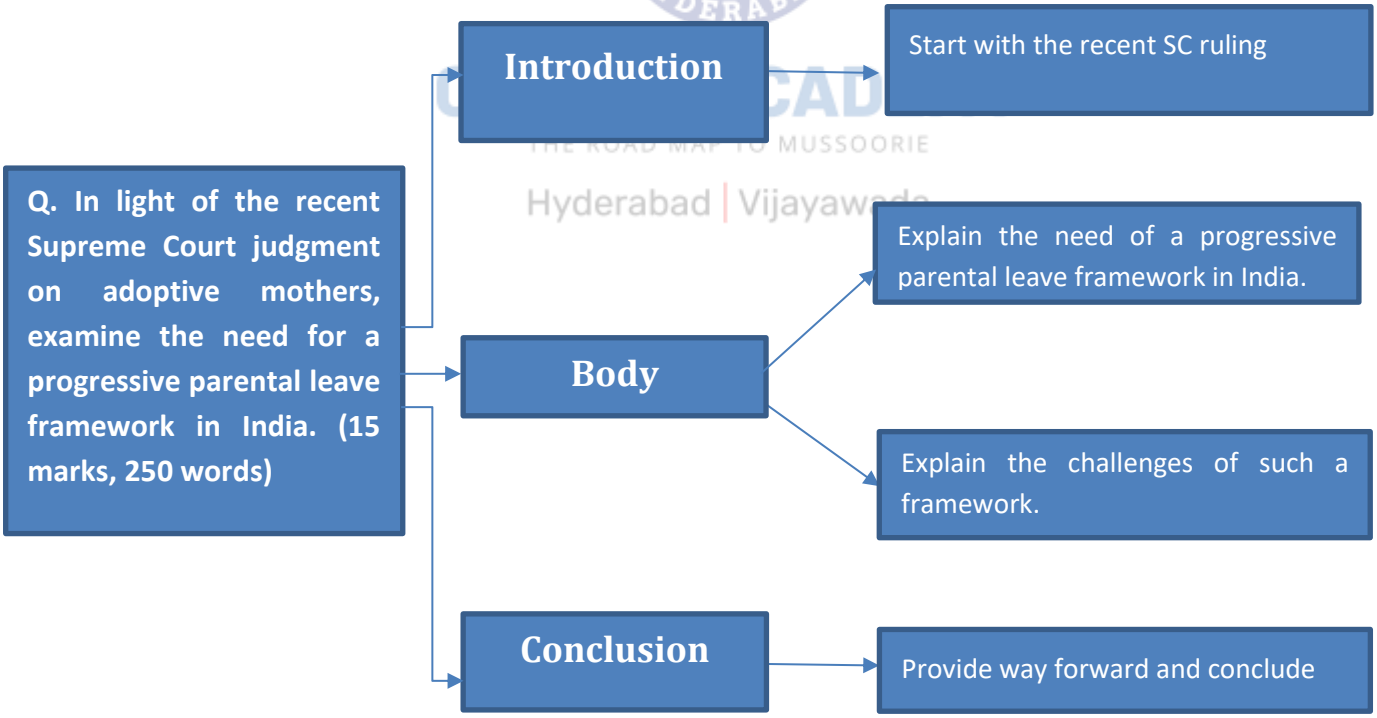
- Denmark: universal early childcare support

- **Incentivise Women's Employment:** Provide **tax incentives** to companies hiring/retaining women, subsidies for maternity benefits.
  - Japan: financial incentives to firms promoting work-life balance
- **Flexible Work & Return-to-Work Policies:** Mandate work-from-home options, part-time re-entry and phased return after maternity leave.
  - Netherlands: strong part-time work culture. Corporate best practices (e.g., extended paid leave + flexible hours)
- **Awareness, Enforcement & Labour Inspection Reform:** Strengthen labour compliance mechanisms and digital grievance redress systems. Mandatory disclosure of maternity policies, penalties for denial of benefits.
- **Cultural & Behavioural Change (Beyond Law):** Promote shared parenting norms and workplace sensitivity training. Address **"Wollstonecraft dilemma"** (work vs caregiving conflict)

PRACTICE QUESTION

Q. In light of the recent Supreme Court judgment on adoptive mothers, examine the need for a progressive parental leave framework in India. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The Supreme Court in Hamsaanandini Nanduri v. Union of India (2026) struck down Section 60(4) of the Social Security Code, 2020, holding the 3-month age cap for adoptive mothers as unconstitutional. It recognised **adoption as part of reproductive autonomy (Article 21)** and affirmed that adoptive mothers

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are entitled to **12 weeks of paid maternity leave irrespective of the child's age**, emphasising equality and child welfare.

Need for a Progressive Parental Leave Framework

1. Ensuring Child Welfare & Development

- Early caregiving is critical for **emotional bonding, cognitive growth, and stress regulation**.
- Particularly important for **adopted children** transitioning from institutional care.

2. Promoting Gender Equality

- Reduces the **motherhood penalty** and workplace discrimination.
- Encourages **shared caregiving roles**.

3. Improving Female Labour Force Participation

- India's FLFPR (~30–37%) remains low; supportive policies can **retain women in workforce**.

4. Recognising Diverse Family Structures

- Includes **adoptive parents, single parents, and surrogacy arrangements**.
- Aligns law with **social realities**.

5. Advancing Constitutional Values

- Upholds **Articles 14, 21, and 42** (equality, dignity, and maternity relief).
- Expands **reproductive autonomy beyond biological motherhood**.

6. Enhancing Economic Productivity

- Reduces attrition and skill loss → improves **human capital utilisation**.

7. Addressing Care Economy & Social Justice

- Recognises unpaid care work as **economic contribution**.
- Acts as **corrective justice** for structural gender inequality.

Challenges in Implementing a Progressive Framework

- **Informal Sector Exclusion**: ~90% workforce informal, majority women lack coverage.
- **Employer Liability Burden**: High cost of paid leave leads to **hiring bias against women**.
- **Lack of Paternity Leave Framework**: Only 15 days for government employees, reinforces **gendered caregiving roles**.
- **Low Awareness & Weak Enforcement**: Many women are unaware of rights or face **denial of benefits**.
- **MSME Constraints**: Small firms struggle with cost of **26-week paid leave**, leading to informalisation.
- **Inadequate Childcare Infrastructure**: Crèche mandate limited to ≥50 employees; poor implementation.
- **Exclusion of Gig & Platform Workers**: Social security provisions remain weak for **new-age employment forms**.

Way Forward

- **Shift to Social Insurance Model**: Shared funding (State + employer) to reduce hiring bias.
- **Universalise Coverage**: Extend benefits to **informal and gig workers** via DBT and social security schemes.
- **Introduce Comprehensive Parental Leave Law**: Mandate **paternity leave and shared parental leave**.
- **Strengthen Childcare Systems**: Expand **crèches and public childcare infrastructure**.
- **Incentivise Employers**: Tax benefits and subsidies for **women-friendly workplaces**.

- **Promote Flexible Work Policies**: Work-from-home and phased return to reduce career breaks.
- **Improve Awareness & Enforcement**: Strengthen labour inspection and grievance redress mechanisms.

The Supreme Court's judgment marks a shift from a **biological to a rights-based understanding of parenthood**. However, achieving substantive equality requires moving towards a **universal, inclusive, and gender-neutral parental leave framework**, ensuring that caregiving becomes a **shared societal responsibility** aligned with constitutional values and developmental goals.

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4. JAL JEEVAN MISSION

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Geography > Resource geography

REFERENCE NEWS:

- Recently, the Union Cabinet approved the **extension of the Jal Jeevan Mission (JJM) period up to December 2028** with enhanced outlay and restructured implementation focusing on structural reforms in the rural drinking water supply sector under **JJM 2.0.**
- The Jal Jeevan Mission, launched in 2019, originally aimed to provide **potable tap water to all rural households by 2024.**
- From the baseline of **3.23 crore (17%) rural households with tap water connections in 2019**, so far, more than **12.56 crore additional rural households** have been provided with tap water connections under JJM.
- At present, out of 19.36 crore rural households identified by the States/UTs in the country, **around 15.80 crore (81.61%)** households are reported to have tap water connections as on date.

MORE ON NEWS:

- To strengthen JJM through structural reforms, the Cabinet has raised the total outlay to Rs. 8.69 lakh crore, with central assistance increased to Rs. 3.59 lakh crore from Rs. 2.08 lakh crore in 2019–20.
- A **uniform digital platform, "Sujalam Bharat",** will assign each village a unique Service Area ID and digitally map the entire drinking water system from source to tap. Transparency is to be improved through GP (Gram Panchayat) and VWSC (Village Water and Sanitation Committee) participation in scheme handover under **"Jal Arpan".**
- A Gram Panchayat can declare **"Har Ghar Jal"** only after certifying completion of works and ensuring proper in-village operation and maintenance systems are in place. To **promote community ownership**, **"Jal Utsav"** will serve as an annual local review and maintenance event.

WHAT IS THE JAL JEEVAN MISSION?

- The **Jal Jeevan Mission (JJM)** is a **centrally sponsored program** of the Union Government, initially launched in 2019 with the motto **"Har Ghar Nal Se Jal" (HGNSJ)**, aiming to provide **functional household tap connections (FHTC) to every rural household by 2024**.
- The project is the restructured and upgraded version of the **National Rural Drinking Water Programme (NRDWP)** for the successful implementation of the **UN SDG goal 6,** that is to ensure access to water and sanitation for all.
- The project is for ensuring water for all ie., **'No one is left behind.'**

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- Aims to create a Jan aandolan of water as it is a **community based program** making it everyone's priority through **development of Village Action Plan** by imbibing education, information and communication in the grass root levels **by involving gram sabhas** for improving the quality of life of each individual.

- Jal Jeevan Mission (JJM) based on the regional coverage can be classified into two:-
  - **Jal Jeevan Mission Rural.**
  - **Jal Jeevan Mission Urban**

Jal Jeevan Mission (Rural)		**Jal Jeevan Mission (Urban)**
○ Jal Sakthi Ministry	**Nodal Ministry**	○ Ministry of Housing and Urban Development.
○ 15 August 2019	**Date of Announcement**	○ Union Budget 2021-22

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○ **55 litres of water per person per day** to every **rural household** through Functional Household Tap Connections (FHTC) **by 2024.**	**Mission**	○ To provide **universal coverage of water supply** to all households through functional taps in all **4,378 statutory towns** in accordance with SDG Goal- 6.

- The government has already invested **₹3.6 lakh crore in the mission since its inception.**
- Budget allocations for **2025-26 are set at ₹67,000 crore**, slightly down from ₹69,992 crore in 2023-24.
- An **"enhanced outlay" for the mission** was declared, though specific financial details were not disclosed.
- Implementation challenges include **extending infrastructure to remote areas** and managing **cost increases due to external factors like COVID-19 and geopolitical tensions.**
- The mission requires an additional **nearly ₹4 lakh crore to achieve full coverage,** doubling the expenditure of the previous phase.

SIGNFICANCE:

- **Health and wellbeing:**
  - JJM provides safe and adequate water to each household, which **ensures hygiene and better health, thus improving quality of life.**
  - For instance, a 2023 World Health Organization modelling study has predicted that India can **potentially prevent nearly 400,000 deaths from diarrhoea** and **save about 14 million DALYs** (disability-adjusted life years) from water-related ailments if it manages to achieve **universal rural coverage under the Jal Jeevan Mission.**
- **Empowers women:**
  - Jal Jeevan Mission (JJM) helps rural residents, especially in the desert and drought-prone areas, access water and a**voids the burden of walking miles to** get it.
  - Thus, JJM empowers women by red**ucing the burden on women in collecting water**, and they could **utilise the new found time for productive works** as it saves labour and time spent collecting water.
  - For instance, there is enough data to demonstrate that **school attendance among girls** was much **lower during the summer** when repeated travel was required due to increasing water demand.
- **Environmental sustainability and climate resilience:**
  - JJM will implement various sustainability measures as mandatory elements, such as **recharge and reuse through grey water management**, water conservation, and **rainwater harvesting** etc.

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- Also, JJM (urban) focuses on the **rejuvenation of water bodies** to augment sustainable fresh water supply and **creating green spaces** and **sponge cities** to reduce floods and enhance amenity value through an Urban Aquifer Management plan for **sustainable and climate-resilient urban areas**.

- **Economic benefits:**
  - JJM has the potential to **create job opportunities**, especially in rural areas, in water supply infrastructure development, operation and maintenance, and water conservation.
  - Also, the **availability of water** would help in the d**evelopment of various sectors, including tourism, MSMEs,** etc., and could lead to regional development.
  - For instance, with universal coverage of safely managed drinking water in India, almost 14 million DALYs are estimated to be averted, resulting in estimated **cost savings of up to $101 billion.**
- **Emphasis on delivering water services:**
  - In contrast to prior water supply initiatives, the Jal Jeevan Mission (JJM) places more emphasis on **delivering water services than just constructing water supply infrastructure.**
  - The Jal Jeevan Mission's motto, **"No one is left out,"** ensures that every household, **regardless of socioeconomic position, has access to running water.**
- **Sustainable development goal:**
  - **The vision of JJM** to provide universal coverage of water supply to all households through functional taps is **aligned with SDG Goal 6.**

CHALLENGES:

- **Ground water contaminants:**
  - The presence of groundwater contaminants such as **fluoride, arsenic, and other heavy metals in various regions** of the country will be a major challenge for the Jal Jeevan Mission (JJM) to provide **adequate water quality**.
- **Geographical diversities:**

- The geographical diversity of the country, ranging from high mountains to low-lying plains, coastal regions, forested regions, and desert regions, possessing **different agricultural practices** and traditions and an **uneven natural distribution of rain** with **seasonal variation in water demand**, poses a challenge to the effective implementation of the JJM**.**

- **Huge capital investment:**
  - While there are **several methods** mentioned in the implementation guidelines of JJM for **sustainable water conservation**, huge capital investments are required for their implementation.
- **Water supply and distribution challenges:**
  - JJM has to overcome the existing challenges in water supply and distribution, such as **high leakages and losses**, **high non-revenue water (NRW),** inequity in distribution, and **poor operation and maintenance** of water supply infrastructure.
    - The difference between the amount of water put into the distribution system and the amount of water billed to consumers is called **"Non-revenue Water" (NRW).**
- **State subject:**
  - **Water being a state subject**, there needs to be **better coordination with national and state-level institutions** for effective implementation of the mission.
- **Climate Change Impacts:**
  - The effects of climate change, including **unpredictable rainfall patterns and increased frequency of droughts and floods**, could exacerbate water scarcity and affect the sustainability of water sources. This adds another layer of complexity to managing water resources effectively under the JJM.

WAY FORWARD:

- **Technological Advancements**:
  - Integrate cutting-edge technologies like AI and machine learning for predictive maintenance of water infrastructure and real-time water quality monitoring.
  - Employ drone technology for the surveillance and management of water bodies in remote and inaccessible areas.

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- **Strengthening Policy Frameworks**:
  - Develop and enforce stringent national guidelines for water quality and distribution to ensure uniformity across states.
  - Establish a centralized framework for water data management to facilitate better decision-making based on accurate and timely data.
- **Enhanced Community Engagement**:
  - Implement community-led total water management programs to empower local bodies in managing their water resources effectively.
  - Expand educational programs focusing on sustainable water use and conservation practices at the community level.
- **Scaling Public-Private Partnerships (PPP)**:
  - Increase the scope of PPP models to include not only infrastructure development but also technological integration and capacity building.
  - Create incentives for private sector investment in sustainable water technologies and services.
- **Regulatory and Institutional Strengthening**:
  - Set up dedicated regulatory bodies at state and central levels to oversee and coordinate the implementation of water policies and projects.
  - Enhance the capabilities of existing institutions to manage the increasing complexities of water governance under the JJM.
- **Focus on Sustainable Practices**:
  - Mandate the integration of sustainable and climate-resilient practices in all new water projects under the JJM, such as rainwater harvesting and greywater recycling.
  - Promote the restoration of traditional water bodies and systems in collaboration with local communities and experts.

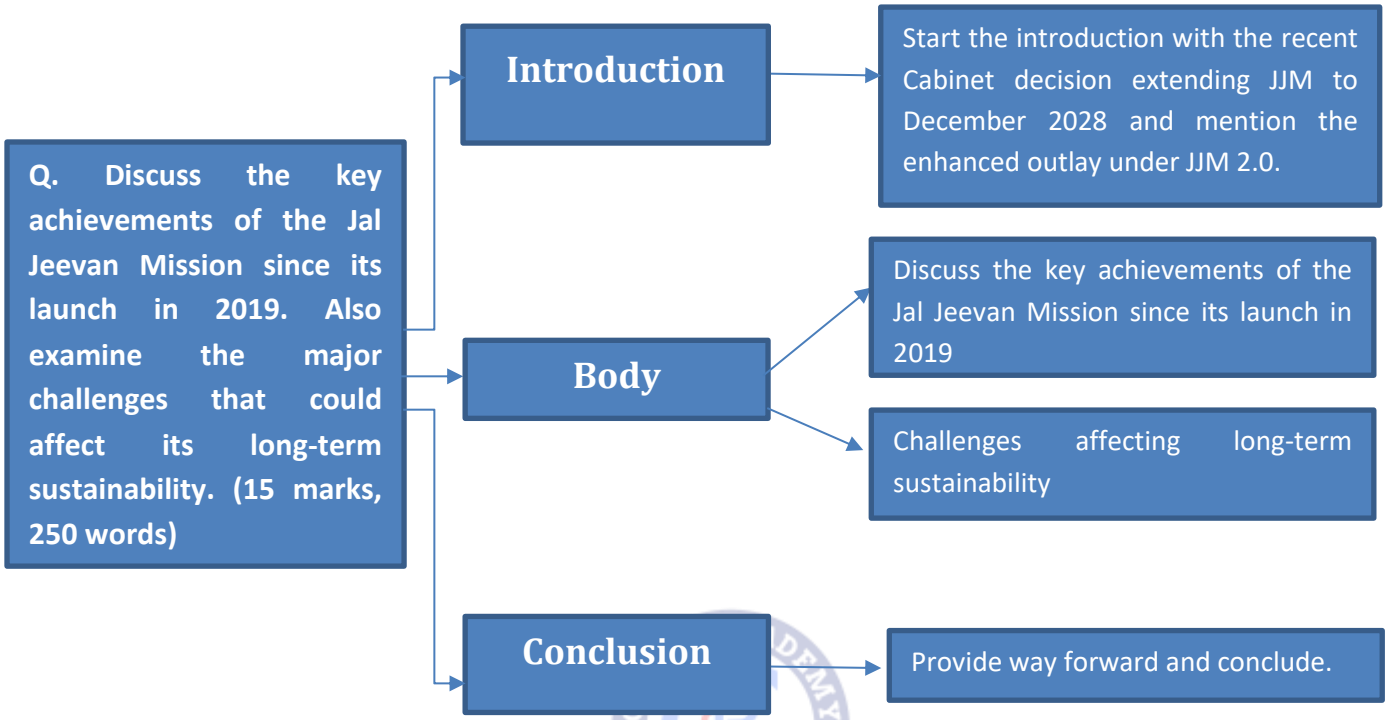
CONCLUSION:

- Jal Jeevan Mission marks a shift from infrastructure creation to assured rural water service delivery. Its long-term success will depend on sustaining water sources, ensuring quality, strengthening local institutions, and building climate-resilient, community-owned water systems.

PRACTICE QUESTION

Q. Discuss the key achievements of the Jal Jeevan Mission since its launch in 2019. Also examine the major challenges that could affect its long-term sustainability. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, the Union Cabinet approved the extension of the **Jal Jeevan Mission (JJM) till December 2028** with an enhanced outlay of **₹8.69 lakh crore**, reflecting the government's commitment to strengthen rural drinking water systems through structural reforms under **JJM 2.0**. Launched in **2019 with the motto "Har Ghar Nal Se Jal"**, the mission aims to provide **Functional Household Tap Connections (FHTC)** to every rural household.

Achievements of the Jal Jeevan Mission:

1. **Rapid expansion of rural tap water coverage**: Since 2019, rural households with tap water connections increased from **3.23 crore (17%) to around 15.80 crore (81.6%)**, marking one of the fastest expansions of drinking water infrastructure in India.
2. **Improved public health outcomes**: Access to safe drinking water reduces water-borne diseases. A **WHO modelling study (2023)** suggests that universal rural water coverage could prevent **nearly 4 lakh diarrhoeal deaths** and save **14 million DALYs**.
3. **Women empowerment and social benefits**: JJM reduces the burden on women who traditionally travel long distances for water, enabling greater participation in education, livelihoods, and community activities.
4. **Community participation in water governance**: The mission promotes **Village Water and Sanitation Committees (VWSCs)** and **Gram Panchayat-led Village Action Plans**, turning water management into a **Jan Andolan**.

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5. **Shift from infrastructure creation to service delivery**: Unlike earlier schemes, JJM focuses on **reliable water services**, operation and maintenance, and sustainability rather than only building infrastructure.
6. **Integration with Sustainable Development Goals**: JJM directly contributes to **SDG-6 (Clean Water and Sanitation)** by ensuring universal and equitable access to safe drinking water.
7. **Environmental sustainability initiatives**: Measures such as **greywater management, rainwater harvesting, and water conservation** are integrated to ensure sustainable water sources.

Challenges Affecting Long-Term Sustainability:

1. **Groundwater contamination**: Regions affected by **fluoride, arsenic, and heavy metals** face major challenges in ensuring safe drinking water quality.
2. **Geographical and climatic diversity**: India's diverse terrain—from **Himalayan regions to deserts and coastal zones**—makes infrastructure expansion and water source management complex.
3. **High financial requirements**: Achieving universal coverage requires **huge capital investment**, with estimates suggesting an additional **₹4 lakh crore** may be needed.
4. **Distribution inefficiencies**: Issues such as **leakages, high non-revenue water (NRW), and poor maintenance** reduce efficiency in water supply systems.
5. **Institutional coordination challenges**: Since **water is a State subject**, coordination between **Union, State, and local governments** remains critical.
6. **Climate change impacts**: Erratic rainfall, droughts, and floods threaten water availability and the sustainability of drinking water sources.

Way Forward:

- **Use technology for water governance**: Digital platforms like **"Sujalam Bharat"**, AI-based monitoring, and real-time water quality tracking can improve efficiency.
- **Strengthen community ownership**: Programs like **"Jal Arpan" and "Jal Utsav"** should deepen Gram Panchayat and VWSC participation in maintenance and monitoring.
- **Promote sustainable water management**: Scaling **rainwater harvesting, aquifer recharge, and greywater recycling** can ensure long-term water security.
- **Encourage public-private partnerships**: PPP models can support infrastructure development, technological innovation, and capacity building.
- **Strengthen regulatory and institutional frameworks**: Improved coordination mechanisms and stronger water governance institutions are essential for sustained service delivery.

The **Jal Jeevan Mission represents a paradigm shift from infrastructure expansion to assured rural water service delivery**. Its long-term success will depend on **sustainable water source management, strong local institutions, technological integration, and climate-resilient water systems**, ensuring safe drinking water for all rural households.

5. PRESERVATION OF INTANGIBLE CULTURAL HERITAGE IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Indian Culture >> Salient aspects of Art Forms

REFERENCE NEWS:

India is actively working to preserve its **Intangible Cultural Heritage (ICH)** through institutional mechanisms, financial support, and international recognition.

- **UNESCO Recognition:** India currently has **16 elements inscribed on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity**. These include traditions, performing arts, rituals, crafts, and cultural practices preserved by communities.
- **Institutional Mechanism:**
  - **Sangeet Natak Akademi** acts as the **nodal agency for Intangible Cultural Heritage** under the Ministry of Culture.
  - An **expert committee of practitioners, academicians, and cultural specialists** has been constituted to document and preserve these traditions.
  - The committee conducts **fieldwork, outreach, and consultations with communities** associated with various art forms and traditions.
- **Government Schemes for Preservation:** The Ministry of Culture implements several schemes to protect and promote ICH:
  - **Scheme for Safeguarding the Intangible Heritage and Diverse Cultural Traditions of India,** supports **institutions, NGOs, researchers, and cultural groups**. Focuses on **documentation, preservation, dissemination, and wider recognition** of cultural traditions.
  - **Kala Sanskriti Vikas Yojana (KSVY):** An umbrella scheme for promoting art and culture with multiple sub-schemes:
    - **Financial Assistance for Promotion of Guru–Shishya Parampara (Repertory Grant):** Supports traditional knowledge transmission through master–disciple traditions.
    - **Financial Assistance to Cultural Organisations with National Presence**
    - **Cultural Function and Production Grant (CFPG):** Provides funding for cultural performances and events.
    - **Financial Assistance for Preservation and Development of Cultural Heritage of the Himalayas**
    - **Financial Assistance for Preservation and Development of Buddhist/Tibetan Organisations**
- **Financial Support (Recent Years):** Key highlights of financial assistance:
  - **Guru–Shishya Parampara Scheme:** 2022–23: ₹7824.7 lakh to 1214 organisations. 2023–24: ₹10147.6 lakh to 1882 organisations. 2024–25:

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₹7704.7 lakh to 1041 organisations • **Cultural Function & Production Grant:** Supports over **1700–2200 cultural organisations annually**. • **Support for Himalayan cultural heritage and Buddhist/Tibetan organisations** also continues through targeted financial assistance.

INTANGIBLE CULTURAL HERITAGE OF INDIA:

Intangible Cultural Heritage (ICH) refers to the **living traditions, practices, expressions, knowledge, and skills** that communities recognise as part of their cultural identity and transmit across generations.

- According to the **2003 UNESCO Convention for the Safeguarding of Intangible Cultural Heritage**, it also includes **instruments, artefacts, objects, and cultural spaces associated with these traditions**.
- **Domains of Intangible Cultural Heritage:** UNESCO classifies ICH into **five major domains**:
  - **Oral traditions and expressions**: including language and storytelling traditions.
  - **Performing arts**: such as music, dance, theatre, and ritual performances.
  - **Social practices, rituals, and festive events**: festivals and community traditions.
  - **Knowledge and practices concerning nature and the universe**: traditional ecological knowledge, medicine, and cosmology.
  - **Traditional craftsmanship**: skills related to crafts and artisanal traditions.
- **India's Intangible Cultural Heritage at UNESCO:** India is one of the culturally richest countries and currently has **16 elements inscribed on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity.**

Kutiyattam (Kerala)	One of the oldest surviving Sanskrit theatre traditions; performed in temple theatres (*Kuttampalams*); emphasises facial expressions and hand gestures.
Tradition of Vedic Chanting	Oral transmission of sacred Vedic hymns for over **3500 years**; preserved through complex recitation techniques by Brahmin priests.
Ramlila – Traditional Performance of Ramayana	Dramatic enactment of the Ramayana performed during **Dussehra** across North India; based on Tulsidas' *Ramcharitmanas*.
Ramman Festival (Uttarakhand)	Religious ritual theatre dedicated to **Bhumiyal Devta** in Saloor-Dungra villages; includes masked dances and epic recitations.
Chhau Dance (Eastern India)	Martial dance form depicting episodes from epics and folklore; styles found in **Odisha, Jharkhand, and West Bengal**.
Kalbelia Folk Songs and Dances (Rajasthan)	Performed by the Kalbelia snake-charmer community; dancers imitate serpent movements accompanied by folk instruments.
Mudiyettu (Kerala)	Ritual dance drama depicting the mythological battle between **Goddess**

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	Kali and demon Darika; performed in Bhagavati temples.
Buddhist Chanting of Ladakh	Monks chant sacred Buddhist texts in monasteries; accompanied by ritual music and symbolic hand gestures.
Sankirtana (Manipur)	Ritual singing, drumming, and dancing narrating the life of **Lord Krishna**; central to Manipuri Vaishnav culture.
Traditional Brass and Copper Craft of Thatheras (Punjab)	Traditional utensil-making technique using brass and copper; involves hammering and shaping metal plates manually.
Nowruz (Navroz)	Persian New Year celebrated by Parsis and others; marked by communal feasts and symbolic rituals on **21 March**.
Yoga	Ancient Indian discipline integrating **physical postures, breathing techniques, and meditation** for holistic well-being.
Kumbh Mela	Largest peaceful religious gathering; pilgrims bathe in sacred rivers at **Prayagraj, Haridwar, Ujjain, and Nashik**.
Durga Puja in Kolkata	Ten-day festival celebrating Goddess Durga; famous for artistic pandals, rituals, and community participation.
Garba of Gujarat	Devotional circular dance performed during **Navratri** around a lamp symbolizing divine feminine energy (*Shakti*).
Deepavali (Diwali)	Festival symbolising **victory of light over darkness and good over evil**; celebrated with lamps, rituals, and community gatherings.

SIGNIFICANCE OF PRESERVATION OF INTANGIBLE CULTURAL HERITAGE IN INDIA:

- **Preserves Civilisational Continuity and Cultural Identity:** Intangible heritage transmits **values, beliefs, and traditions across generations**, strengthening India's civilisational continuity.
  - **Tradition of Vedic Chanting (UNESCO, 2008)** preserves sacred Sanskrit texts that have been orally transmitted for **over 3500 years**.
  - **Ramlila performances** during Dussehra sustain the narrative traditions of the *Ramayana* in North India.
- **Strengthens Social Cohesion and Community Participation:** Many traditions foster **community bonding and collective identity** through rituals and festivals.
  - **Kumbh Mela (UNESCO, 2017)** attracts **millions of pilgrims**, making it the world's largest peaceful gathering.
  - **Durga Puja in Kolkata (UNESCO, 2021)** promotes community participation, including artisans, women, and marginalized groups.

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- **Supports Livelihoods and Traditional Skills:** Preservation of ICH sustains **artisans, performers, and craft communities** who depend on traditional knowledge systems.
    - **Thatheras of Jandiala Guru (Punjab)** continue traditional brass and copper utensil-making techniques.
    - **Kalbelia dance tradition** provides cultural livelihood to Rajasthan's Kalbelia community.
- **Promotes Cultural Diversity and Pluralism:** India's intangible heritage reflects the **diversity of linguistic, regional, and religious traditions**.
    - **Sankirtana of Manipur** represents Vaishnav devotional traditions in Northeast India.
- **Strengthens Cultural Diplomacy and Global Recognition:** UNESCO recognition enhances **India's cultural soft power and global cultural diplomacy**.
    - **Yoga (UNESCO, 2016)** has gained worldwide acceptance as a holistic wellness practice.
    - **Garba (UNESCO, 2023)** has brought global attention to Gujarat's devotional dance tradition.
- **Preserves Indigenous Knowledge and Sustainable Practices:** Many traditions embody **traditional ecological knowledge and sustainable lifestyles**.
    - Traditional practices linked to **agriculture, festivals, and nature worship** maintain ecological balance. **Mudiyettu ritual theatre** reflects community beliefs and ecological harmony in Kerala temple culture.
- **Promotes Tourism and Local Economic Development:** Cultural festivals and performances attract **domestic and international tourism**, boosting local economies.
    - **Kumbh Mela** generates large-scale tourism revenue and global attention.
    - **Durga Puja pandals in Kolkata** attract millions of visitors every year.
- **Encourages Intergenerational Knowledge Transfer:** Preservation ensures **traditional skills and cultural knowledge are transmitted to younger generations**.
    - The **Guru–Shishya Parampara scheme** supports traditional transmission of performing arts such as music, dance, and theatre.

CHALLENGES FACED:

- **Rapid Urbanisation and Modernisation:** Urban lifestyles and changing cultural preferences are weakening traditional practices. Younger generations often migrate to cities and lose connection with traditional art forms.
    - Traditional theatre forms such as **Kutiyattam in Kerala** struggle to attract younger practitioners due to limited livelihood opportunities.
- **Decline of Traditional Knowledge Transmission:** Many traditions depend on the **Guru–Shishya (master–disciple) system**, which is weakening. Without proper transmission mechanisms, knowledge risks disappearing.
    - Of the **over 1000 branches of Vedic recitation**, only **about 13 survive today**, indicating the decline of the oral tradition.
- **Economic Insecurity of Practitioners:** Artisans and performers often receive **irregular income and limited institutional support**. Traditional occupations are increasingly replaced by modern employment.

    - The **Thatheras of Jandiala Guru (Punjab)** face declining demand for handcrafted brass utensils due to cheaper industrial alternatives.
- **Commercialisation and Cultural Dilution:** Cultural traditions are sometimes commercialised for tourism and entertainment, leading to loss of authenticity. Ritual and spiritual significance may be replaced by staged performances.
    - **Folk dances like Garba or Kalbelia** are sometimes adapted for commercial events, diluting their traditional context.
- **Lack of Documentation and Data:** Many cultural traditions, especially **tribal and local practices**, remain undocumented. Absence of systematic documentation makes it difficult to preserve them.
    - While flagship traditions such as **Yoga and Kumbh Mela** are well documented, several indigenous rituals and oral traditions remain unrecorded.
- **Globalisation and Cultural Homogenisation:** Global media and popular culture influence local communities, reducing interest in traditional practices. Western cultural forms often replace indigenous cultural expressions.
- **Declining Community Participation:** Intangible heritage survives only through **active community involvement**. Changing social structures and migration reduce participation in traditional festivals and rituals.
    - Local ritual festivals such as **Ramman in Uttarakhand** are confined to specific villages and face participation challenges.
- **Environmental and Climate Challenges:** Some traditions are linked to specific natural landscapes and ecological conditions. Environmental degradation and climate change threaten these cultural practices.
    - Himalayan cultural traditions and festivals linked to local ecosystems are affected by environmental changes.
- **Institutional and Financial Constraints:** Preservation programmes require sustained funding and coordination among multiple institutions.

WAY FORWARD:

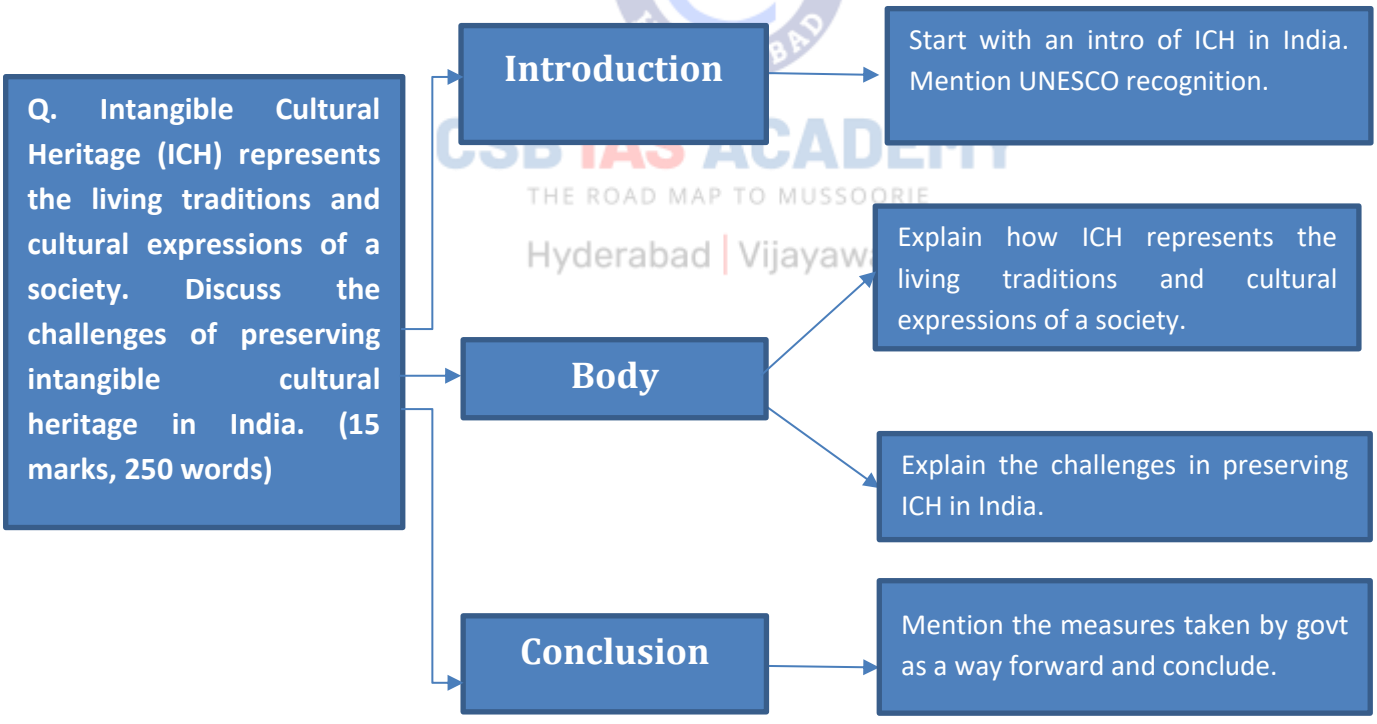
- **Strengthen Documentation and Digital Archiving:** Create comprehensive **national digital inventories** of cultural practices, rituals, and crafts. Use **AI, GIS mapping, and digital archives** to record oral traditions and performances.
- **Revitalise the Guru–Shishya Parampara:** Provide scholarships, fellowships, and stipends to encourage young learners to pursue traditional arts. Expand schemes like **Financial Assistance for Promotion of Guru–Shishya Parampara** under the **Kala Sanskriti Vikas Yojana**.
- **Provide Economic Support to Practitioners:** Improve livelihood opportunities through **artisan clusters, cultural tourism, and market linkages**. Promote traditional crafts through initiatives such as **GI tagging, ODOP (One District One Product), and e-commerce platforms**.
- **Integrate ICH with Education and Awareness:** Include **traditional arts, festivals, and knowledge systems in school and university curricula**. Promote cultural literacy through workshops, exhibitions, and cultural exchange programmes.

- **Promote Community-led Conservation:** Empower **local communities, cultural practitioners, and tribal groups** to manage and safeguard traditions. Strengthen **Biodiversity Management Committees and local cultural bodies** to document local traditions.
- **Strengthen Institutional Coordination:** Improve coordination among institutions such as the **Ministry of Culture, UNESCO, Sangeet Natak Akademi, and Zonal Cultural Centres**. Increase financial allocations and monitoring for cultural preservation schemes.
- **Leverage Cultural Tourism:** Promote festivals and traditional performances as **sustainable tourism attractions**. Festivals like **Kumbh Mela, Durga Puja, and Garba** can be leveraged to promote heritage tourism and local economies.
- **International Collaboration and Cultural Diplomacy:** Increase participation in UNESCO programmes and cultural exchanges. Use **India's soft power traditions such as Yoga and classical arts** to promote global recognition.

PRACTICE QUESTION

Q. Intangible Cultural Heritage (ICH) represents the living traditions and cultural expressions of a society. Discuss the challenges of preserving intangible cultural heritage in India. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Intangible Cultural Heritage (ICH) refers to **living traditions, practices, knowledge, skills, and cultural expressions transmitted across generations**, including rituals, performing arts, oral traditions, and traditional craftsmanship. India currently has **16 elements inscribed on UNESCO's Representative List of**

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the Intangible Cultural Heritage of Humanity, including **Yoga, Kumbh Mela, Durga Puja, Garba, and Vedic chanting**, reflecting the country's rich cultural diversity.

ICH as Living Traditions and Cultural Expressions

- **Transmission of Ancient Knowledge Systems:** Traditions like **Vedic chanting** preserve sacred texts through oral transmission for over **3500 years**.
- **Community-based Cultural Practices:** Festivals such as **Kumbh Mela** represent collective religious and cultural practices involving millions of participants.
- **Performing Arts and Ritual Traditions: Chhau dance of eastern India** and **Kutiyattam theatre of Kerala** reflect artistic and ritualistic cultural expressions.
- **Traditional Craftsmanship and Skills: Brass and copper utensil making by Thatheras of Punjab** preserves indigenous craftsmanship techniques.
- **Cultural Identity and Social Cohesion:** Festivals like **Durga Puja in Kolkata** strengthen community participation and shared cultural identity.

Challenges in Preserving ICH in India

- **Urbanisation and Modernisation:** Changing lifestyles reduce participation in traditional practices.
- **Decline of Traditional Transmission Systems:** Weakening of the **Guru–Shishya tradition** threatens the continuity of knowledge.
- **Economic Insecurity of Practitioners:** Artisans and performers often lack stable income, leading to declining interest among younger generations.
- **Commercialisation and Cultural Dilution:** Traditional practices are sometimes modified for tourism or commercial events, affecting authenticity.
- **Lack of Documentation and Research:** Many tribal and regional traditions remain poorly documented.
- **Globalisation and Cultural Homogenisation:** Western cultural influences overshadow indigenous traditions.
- **Environmental and Ecological Changes:** Traditions linked to specific landscapes or ecosystems face threats from environmental degradation.

Way Forward: Government Measures

- **Scheme for Safeguarding the Intangible Heritage and Diverse Cultural Traditions of India** to document and promote cultural practices.
- **Kala Sanskriti Vikas Yojana (KSVY)** providing financial support to cultural organisations and practitioners.
- **Guru–Shishya Parampara scheme** promoting transmission of traditional performing arts.
- **Zonal Cultural Centres and Sangeet Natak Akademi initiatives** for preservation, documentation, and promotion of cultural traditions.

Preserving intangible cultural heritage is crucial for **safeguarding India's cultural identity, sustaining traditional livelihoods, and promoting cultural diversity**. Strengthening institutional support, community participation, and documentation mechanisms will ensure the survival of India's living cultural traditions in the face of modern challenges.

GENERAL STUDIES-II

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6. EUTHANASIA IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity

REFERENCE NEWS:

- Recently, in a historic and unprecedented decision, the Supreme Court permitted the withdrawal of artificial life support to **Harish Rana, a 32-year-old** who has been in a vegetative state for almost 13 years now. The court also urged the Centre to bring a **comprehensive law to address passive euthanasia.**

MORE ON NEWS:

- Rana, a resident of Ghaziabad in Uttar Pradesh, suffered head injuries after falling from a fourth floor flat in Chandigarh in August 2013, where he was a student at the time. He has been in a **permanent vegetative state (PVS)** since then.

> **Permanent Vegetative State (PVS):** A condition in which a patient permanently loses consciousness and awareness due to **severe brain damage**, while basic bodily functions like **breathing and sleep–wake cycles continue, and recovery is considered medically impossible.**

- The judgment was delivered by a Bench of **Justices J.B. Pardiwala and K.V. Viswanathan**, marking the **first explicit judicial approval for withdrawal of life support under the passive euthanasia framework** developed in earlier Supreme Court rulings.
- The Court held that **Clinically Assisted Nutrition and Hydration (CANH)**, provided through a PEG (Percutaneous Endoscopic Gastrostomy) feeding tube, constitutes **medical treatment rather than basic care**, and therefore can legally be withdrawn when it **no longer serves the therapeutic interests of the patient**.
- After reviewing medical reports and interacting with the patient's family, the Court concluded that **continued treatment offered no reasonable possibility of recovery and merely prolonged biological existence**.
- The Court emphasized that the **"best interests of the patient"** must guide end-of-life decisions and that withdrawal of treatment should **not amount to abandonment of the patient.**
- The Supreme Court directed that the patient be **shifted to AIIMS, New Delhi**, where doctors would implement the withdrawal of life-sustaining treatment under a **carefully designed palliative and end-of-life care plan**.
- The judgment stressed that the process must be **humane and compassionate**, ensuring proper **pain management and dignity for the patient** during the end-of-life stage.

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WHAT IS EUTHANASIA?

- **Euthanasia** is the intentional ending of a person's life, or the intentional bringing about of death by withholding or withdrawing treatment, in order to relieve unbearable suffering, usually in cases of terminal illness or irreversible medical condition.
- The term is derived from the Greek words: **eu** = good and **thanatos** = death. Thus, euthanasia literally means **"good death."**
- Based on the method used, euthanasia is commonly discussed **under two heads**:

Active Euthanasia	Passive Euthanasia
This involves a **direct act** to cause the patient's death, such as **administering a lethal injection or lethal drug dose**.	This involves **withholding or withdrawing life-sustaining treatment**, allowing the patient to die naturally from the underlying illness.
Illegal in India. There is no legal recognition for a doctor or any person to **directly cause death.** Taking any direct action to intentionally cause a person's death **remains a criminal offence under the Bharatiya Nyaya Sanhita (BNS), 2023**, and may be punishable as **culpable homicide or murder.**	**Permitted in India under strict safeguards.** The Supreme Court has recognized the right to die with dignity under **Article 21** and allowed withdrawal/withholding of life-sustaining treatment in specified circumstances. India permits **withdrawal or withholding of life-sustaining treatment** for terminally ill patients or patients in irreversible conditions like PVS, **subject to medical and procedural safeguards.**

PROCEDURAL FRAMEWORK FOR PASSIVE EUTHANASIA IN INDIA:

- **Medical Assessment:** The treating doctor evaluates whether the patient is terminally ill or in an irreversible condition (such as Persistent Vegetative State).
- **Primary Medical Board:** A hospital board of doctors reviews the patient's condition and recommends whether life-sustaining treatment should be withdrawn or withheld.
- **Secondary Medical Board:** An independent board of doctors confirms the decision of the primary board.
- **Consent:** Approval is obtained from the patient (if capable), or from family/surrogate decision-makers, or through a **Living Will/Advance Medical Directive**.

  If there is a valid **Living Will**, it must be respected. If there is no living will, the decision may proceed through surrogate/family consent, subject to the prescribed medical review process.
- **Judicial Intimation:** The hospital records the decision and informs the jurisdictional Judicial Magistrate.
- **Implementation with Palliative Care:** Withdrawal of treatment is carried out under medical supervision with proper **palliative care** to ensure dignity and minimal suffering.

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JUDICIAL VIEW REGARDING EUTHANASIA:

Case	Judicial Position
P. Rathinam v. Union of India (1994)	The Supreme Court held Section 309 IPC (attempt to suicide) unconstitutional. However, this view did not remain the final position, as it was later overruled in **Gian Kaur**.
Gian Kaur v. State of Punjab (1996)	The Supreme Court held that Article 21 does **not include a general right to die**, and upheld the validity of penal provisions relating to suicide/abetment. At the same time, it observed that the **right to die with dignity** in the context of terminal illness is conceptually different from a general right to die.
Aruna Ramachandra Shanbaug v. Union of India (2011)	This was the first major case in which the Supreme Court **recognized passive euthanasia in principle** and laid down safeguards. Importantly, the Court **did not allow withdrawal of support in Aruna's own case**, but created the legal pathway for such cases.
Common Cause v. Union of India (2018)	A Constitution Bench held that the **right to die with dignity is part of Article 21**, recognized **Advance Medical Directives/Living Wills**, and permitted passive euthanasia under a detailed safeguard-based framework.
Common Cause clarification/modification (2023)	The Supreme Court simplified the 2018 procedure because it was too cumbersome in practice, making execution and implementation of living wills and end-of-life decisions more workable.
Chandrakant Narayanrao Tandale v. State of Maharashtra (2020)	The Court did not allow active euthanasia, reaffirming that direct intentional causing of death remains illegal in India.
Harish Rana v. Union of India (2026)	**In a landmark first**, the Supreme Court specifically **allowed withdrawal of life support** for a man who had been in PVS for around 13 years. It held that **CANH is medical treatment**, not basic care; ordered AIIMS to implement a humane palliative end-of-life plan; and urged the Centre to enact comprehensive legislation on end-of-life care.

ARGUMENTS IN FAVOUR OF EUTHANASIA:

- **Right to self-determination and autonomy:**
  - A central argument in favour is that every individual should have control over their own body and medical choices. If a competent person can refuse surgery, ventilation, or other

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treatment, the law should also respect a reasoned decision not to continue futile life-sustaining intervention.
    - For instance, in **Common Cause (2018)**, the Supreme Court recognized that a person of sound mind may refuse treatment and may also execute an **Advance Medical Directive (living will)** for a future stage when decision-making capacity is lost.
- **Right to die with dignity under Article 21:**
    - Supporters argue that **Article 21** protects not mere biological survival, but dignity, choice, privacy, and freedom from degrading treatment. Where treatment only prolongs irreversible suffering or vegetative existence, allowing its withdrawal may better reflect constitutional values than compulsory continuation.
    - For instance, the Supreme Court in **Common Cause** held that the right to live with dignity includes the **right to die with dignity** in terminal or irreversible conditions.
- **Relief from unbearable and futile suffering:**
    - Another strong argument is that medicine should not prolong agony when there is no realistic hope of recovery. In some cases, continued intervention becomes an extension of suffering rather than meaningful care.
    - For instance, in **Harish Rana (2026)**, the Supreme Court held that **Clinically Assisted Nutrition and Hydration (CANH)** is medical treatment and may be withdrawn where it **no longer serves the patient's best interests and merely prolongs biological existence.**
- **Compassion and mercy:**
    - The moral case for euthanasia, especially passive euthanasia, rests heavily on compassion. Where a patient is beyond recovery and enduring prolonged suffering, many argue that mercy lies not in indefinite intervention but in permitting a **peaceful and medically supervised end-of-life process.**
    - For instance, in **Harish Rana**, the Court stressed that withdrawal of treatment **must be humane**, **must not amount to abandonment**, and must be accompanied by proper palliative care.
- **Preservation of human dignity in the final stage of life:**
    - Supporters stress that no person should be forced to remain **in a condition of total dependence**, irreversible loss of consciousness, or extreme suffering when medicine offers no cure. **A dignified death** is seen as the final **expression of a dignified life.**
    - For instance, the Supreme Court's end-of-life jurisprudence repeatedly links dignity with the patient's right not to be subjected to meaningless prolongation of treatment in hopeless cases.
- **Reduction of emotional, physical, and financial burden on families:**
    - Long-term end-of-life care can place enormous emotional, physical, and financial strain on families, especially where treatment continues for years **without any prospect of recovery**.
    - For instance, in **Harish Rana**, the Court acknowledged the family's extraordinary devotion **over more than a decade** and recognized that allowing dignity at the end of life may itself be an act of love, not abandonment. Justice Pardiwala also warned that in the absence of a proper law, **end-of-life decisions may be distorted by financial distress and socioeconomic vulnerability.**

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- **Legal and ethical clarity for doctors:**
  - Without a clear framework, doctors may continue futile treatment only out of fear of criminal liability, litigation, or accusation. A regulated system protects both patients and medical professionals by replacing informal bedside choices with legal safeguards.
  - For instance, **the Supreme Court framework and the Health Ministry's withdrawal-of-life-support guidelines** rely on layered review through medical boards, consent, documentation, and judicial intimation.
- **Respect for prior wishes through living wills:**
  - A further argument in favour is that the law should honour a person's prior, clearly expressed wishes even after they lose capacity. A living will protects autonomy prospectively and reduces conflict among relatives and doctors.
  - For instance, **Common Cause (2018)** recognized **Advance Medical Directives**, and the Supreme Court later simplified the procedure to make them more workable in practice.
- **Avoidance of wasteful prolongation of non-beneficial treatment:**
  - Some argue that in **resource-constrained systems, keeping irreversibly ill patients on expensive life support** indefinitely may **consume scarce resources** that could benefit **others who have a realistic chance of recovery**. This is not the main constitutional basis, but it is often raised in policy discussions. For instance, the Court itself has cautioned that financial hardship should never drive such decisions, which is precisely why strict safeguards are needed.
- **Comparative experience suggests regulation is possible:**
  - Supporters often point to countries where euthanasia or assisted dying has been brought under structured legal control, arguing that abuse can be reduced through careful institutional design.
  - For instance, **Canada** has a statutory framework for Medical Assistance in Dying, and jurisdictions such as the **Netherlands** regulate euthanasia through due-care criteria. Proponents use such examples to argue that end-of-life choices can be **governed transparently rather than left to secrecy or arbitrariness.**

ARGUMENTS AGAINST EUTHANASIA:

- **Sanctity of life:**
  - The most basic objection is that **human life has intrinsic and inviolable worth**. On this view, the law should never approve the intentional ending of life, even where suffering is severe. This concern is especially strong against **active euthanasia**, since it involves a direct act to cause death.
  - For instance, in **Gian Kaur case**, the Supreme Court rejected a general right to die under Article 21, even though later cases recognized a narrower right to die with dignity in end-of-life situations.
- **Slippery slope danger:**

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- Opponents fear that once euthanasia is allowed for narrowly defined extreme cases, the categories may gradually expand to chronic illness, psychiatric suffering, minors, or socially vulnerable persons.
- For instance, critics often point to debates in countries such as **Belgium** and the **Netherlands**, where the legal scope has extended beyond the original terminal-illness model. This is used as a warning against normalizing intentional life-ending practices.

- **Risk of abuse, coercion, and subtle pressure:**
  - Another major objection is that vulnerable persons may feel pushed toward euthanasia by family fatigue, inheritance concerns, social neglect, or the feeling that they are a burden. In unequal societies, "choice" **may be shaped by desperation rather than genuine autonomy.**
  - For instance, Justice Pardiwala in **Harish Rana** expressly warned that end-of-life decisions may be influenced by financial distress, lack of insurance, and socioeconomic vulnerability.
- **True consent is difficult to verify:**
  - Critics argue that it is often difficult to determine **whether a person's request is fully informed, stable, voluntary, and free from depression, fear, or outside pressure.** This becomes even harder where the patient lacks capacity and relatives or surrogates speak on the patient's behalf. For instance, the Indian framework requires multiple layers of medical review because consent alone is not seen as an adequate safeguard.
- **Medical ethics and the Hippocratic tradition:**
  - A long-standing objection is that **doctors are healers, not agents of death.** This concern is tied to the **Hippocratic tradition**, which has historically rejected the giving of deadly medicine.
  - Critics argue that if physicians are empowered to end life, public trust in medicine may weaken. For instance, the **World Medical Association** remains **firmly opposed to euthanasia and physician-assisted suicide**, describing them as inconsistent with medical ethics and respect for human life.
- **Palliative care is a better alternative:**
  - Many opponents argue that the answer to suffering is not euthanasia but better **palliative and hospice care**. Good pain management, emotional support, and family counselling can significantly reduce end-of-life distress.
- **Legal safeguards may fail in practice:**
  - Even where the law is carefully framed, implementation can be inconsistent. Doctors may differ on prognosis, oversight bodies may be weak, and documentation may not capture coercion or hesitation. **Because euthanasia is irreversible, even a small failure can have grave consequences**. For this reason, Indian law has moved cautiously and still refuses active euthanasia while allowing only tightly regulated withdrawal of treatment.
- **India's palliative care system remains inadequate:**
  - This objection is especially strong in India, where access to palliative care remains uneven. Critics argue that **euthanasia may become a substitute for care** rather than a genuine autonomous choice made after all alternatives have been exhausted.
  - For instance, official policy material **recognizes palliative care as an important part of end-of-life care**, yet access and implementation remain limited and uneven across the country.

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- **Possible devaluation of the lives of the disabled, elderly, and chronically ill:**
  - Disability-rights and elder-rights critiques warn that euthanasia may send a **harmful message that some lives are less worth living**. The danger is that society may respond to suffering by eliminating the sufferer instead of improving support, inclusion, and care. This concern is especially relevant **where disability, dependence, and old age are already stigmatized**. Comparative debates in Europe and North America have made this argument more prominent.
- **It may alter social attitudes toward suffering and care:**
  - A broader objection is that normalizing euthanasia may gradually make society less patient, less caring, and less willing to invest in long-term support for the weak and dependent. Opponents argue that a humane society should respond to suffering by expanding care, not by facilitating death. This is why many critics accept palliative care and refusal of futile treatment, but oppose any move toward active euthanasia or physician-assisted suicide.

WAY FORWARD:

- **Enact a comprehensive law on end-of-life care:** India should move from a judge-made framework to a clear statutory regime covering passive euthanasia, living wills, medical-board procedures, palliative care obligations, consent standards, and safeguards against misuse. For instance, in **Harish Rana (2026)**, the Supreme Court itself urged the Centre to enact a comprehensive law on end-of-life care.
- **Strengthen palliative and hospice care:**The right to die with dignity must not become a substitute for the right to receive proper pain relief, counselling, and end-of-life support. India needs wider access to palliative care in district hospitals, medical colleges, and community health systems. The Health Ministry's guidance also stresses that withdrawal of life support must be accompanied by humane palliative care.
- **Simplify and popularise living wills:** Advance Medical Directives should be made easier to draft, register, and retrieve through secure digital systems, while preserving safeguards. Public awareness is still low, even though the Supreme Court has already recognized living wills and later simplified the process.
- **Build robust medical-board capacity:** States should ensure ready panels of trained specialists so that decisions are timely, medically sound, and not delayed by lack of experts. Standard operating procedures should be uniform across hospitals to avoid arbitrary application. The Court in **Harish Rana** also directed maintenance of updated district-level medical panels.
- **Create strong oversight and grievance mechanisms:** A credible framework needs documentation, audit trails, reporting standards, and review mechanisms to prevent coercion, family pressure, or misuse. This is especially important in a society marked by financial vulnerability and unequal access to care.
- **Train doctors, judges, and families in end-of-life ethics:** Medical professionals need training in prognosis, consent, communication, and palliative care. Families also need counselling support so that decisions are informed, humane, and less traumatic. This would help convert the constitutional principle of dignity into real practice.

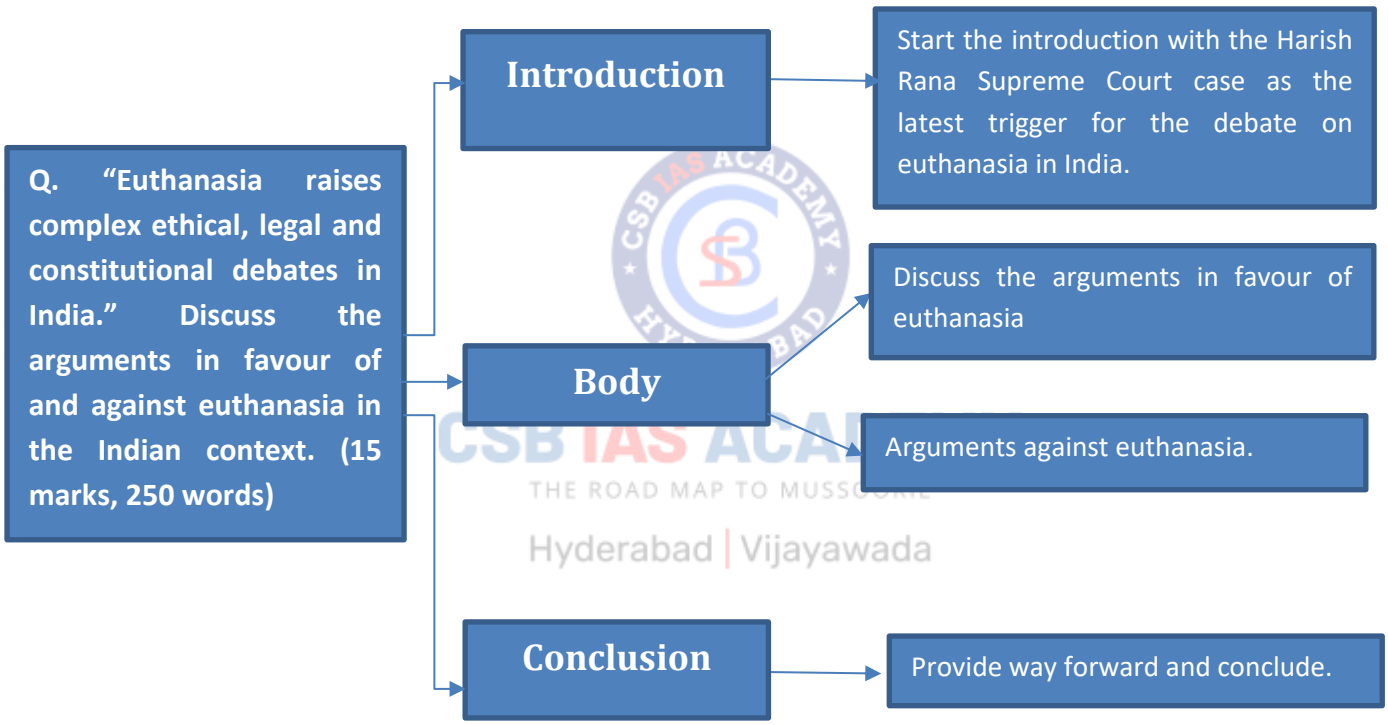
CONCLUSION:

- India should continue its cautious approach: **retain the ban on active euthanasia, but strengthen the legal, medical, and ethical framework for passive euthanasia as part of the right to die with dignity under Article 21**. The real goal is not death, but a humane end-of-life system based on dignity, autonomy, palliative care, and strong safeguards.

PRACTICE QUESTION

Q. "Euthanasia raises complex ethical, legal and constitutional debates in India." Discuss the arguments in favour of and against euthanasia in the Indian context. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, the Harish Rana v. Union of India marked a significant development in India's end-of-life jurisprudence, where the Supreme Court permitted withdrawal of artificial life support for a man in a Permanent Vegetative State for over 13 years. The Court reiterated that the **right to die with dignity is part of Article 21**, reigniting debates on the ethical, legal, and constitutional dimensions of euthanasia in India.

Arguments in Favour of Euthanasia:

1. **Right to Autonomy and Self-Determination:** Supporters argue that individuals should have control over decisions concerning their bodies and medical treatment. If a competent patient can refuse treatment, the law should also respect a decision to discontinue futile life-sustaining care. For

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instance, in Common Cause v. Union of India, the Court recognized the validity of **Advance Medical Directives (living wills)**.

2. **Right to Die with Dignity under Article 21:** Proponents contend that Article 21 protects dignity and freedom from degrading suffering, not mere biological survival. Allowing withdrawal of futile treatment respects human dignity. For instance, the Supreme Court in *Common Cause (2018)* held that the **right to live with dignity includes the right to die with dignity** in terminal or irreversible conditions.
3. **Relief from Unbearable Suffering:** In cases where recovery is medically impossible, continued intervention may merely prolong agony rather than life. For instance, in *Harish Rana (2026)*, the Court held that **Clinically Assisted Nutrition and Hydration (CANH)** is medical treatment and may be withdrawn if it only prolongs biological existence without therapeutic benefit.
4. **Compassion and Humane Care:** Supporters argue that allowing a peaceful end to prolonged suffering reflects compassion and ethical care. For instance, the Court emphasized that withdrawal of treatment must be accompanied by **palliative care and pain management**.
5. **Reduction of Burden on Families:** Long-term treatment for irreversible conditions can impose severe emotional, physical, and financial strain on families. For instance, in *Harish Rana*, the Court acknowledged the family's prolonged caregiving burden while emphasizing dignity at the end of life.

Arguments Against Euthanasia:

1. **Sanctity of Life:** Critics argue that human life has inherent value and should not be deliberately ended. For instance, in Gian Kaur v. State of Punjab, the Supreme Court held that **Article 21 does not include a general right to die**.
2. **Slippery Slope Concerns:** Opponents fear that permitting euthanasia in extreme cases could gradually expand its scope to non-terminal conditions or vulnerable groups.
3. **Risk of Abuse and Coercion:** Elderly, disabled, or financially dependent patients may face subtle pressure to choose death due to family or economic factors.
4. **Medical Ethics and Hippocratic Tradition:** Doctors are expected to preserve life under the **Hippocratic principle of "do no harm."** Allowing physicians to end life could weaken trust in the doctor–patient relationship.
5. **Weak Safeguards and Consent Issues:** Determining whether consent is truly voluntary is difficult, especially where the patient lacks decision-making capacity.
6. **Inadequate Palliative Care in India:** Many critics argue that euthanasia may become a substitute for proper end-of-life care in a country where palliative care access remains uneven.

Way Forward:

- **Enact a comprehensive end-of-life care law** to replace the current judge-made framework governing passive euthanasia.
- **Expand palliative care infrastructure** across district hospitals and community health centres.
- **Simplify and promote living wills** through digital registration and public awareness campaigns.

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- **Strengthen institutional safeguards**, including medical boards, documentation standards, and oversight mechanisms.
- **Provide training for doctors and families** on ethical end-of-life decision-making.

India's approach to euthanasia reflects a careful balance between **respect for autonomy and the protection of life**. While **active euthanasia remains illegal**, the recognition of passive euthanasia under Article 21 highlights the growing emphasis on **dignity, compassion, and patient autonomy**. The challenge ahead lies in building a robust legal and healthcare framework that ensures humane end-of-life care while preventing misuse.

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7. THE TRANSGENDER PERSONS (PROTECTION OF RIGHTS) AMENDMENT BILL, 2026

iMPACT ANALYSIS

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REFERENCE NEWS:

- Recently, the Transgender Persons (Protection of Rights) Amendment Bill, 2026 has been passed by both Houses of Parliament to amend the **Transgender Persons (Protection of Rights) Act, 2019**, which provides for the rights and welfare of transgender persons, and is currently awaiting Presidential assent to become law.

WHO ARE TRANSGENDERS?

- According to the World Health Organization, transgender is an umbrella term for people whose **gender identity and expression does not conform** to the norms and expectations traditionally associated with **the sex assigned to them at birth.**

HISTORY OF TRANSGENDERS IN INDIA:

- Transgender and gender-nonconforming persons have been part of Indian society since ancient times. They are often referenced in cultural and mythological traditions, including **Ardhanarishvara and Shikhandi.**
- During the British period, **"eunuchs"** were brought under surveillance and registration under the **Criminal Tribes Act, 1871**. The Act was later repealed, and denotification followed in the early post-Independence period.
- **According to Census 2011**, the transgender population in India was **4,87,803**. Uttar Pradesh had the highest reported population, followed by Andhra Pradesh, Maharashtra and Bihar.

> **"Eunuchs"** were a colonial administrative term used to describe castrated males and, more broadly, gender-nonconforming persons (especially hijra communities), though the term was imprecise and is now considered outdated.

KEY PROVISIONS OF TRANSGENDER PERSONS (PROTECTION OF RIGHTS) AMENDMENT BILL, 2026:

- **New definition of "transgender person":**
  - The most important change made by the Bill is the **substitution of Section 2(k)** of the 2019 Act. Earlier, the law used a broad definition based on mismatch between gender assigned at birth and lived gender identity. The 2026 Bill replaces that with a **narrower, category-based definition**.
  - It **retains socio-cultural identities such as hijra, kinner, aravani and jogta,** and continues to cover **persons with intersex variations**. It also adds **eunuchs** and **persons who are forced** to

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assume or outwardly present a transgender identity through mutilation, emasculation, castration, or surgical, chemical or hormonal procedures.

- At the same time, it **removes the earlier express inclusion of trans-men, trans-women and genderqueer person**s, and states that the term does not include persons with different sexual orientations or self-perceived sexual identities. This marks a shift from an **inclusive identity-based approach to a narrower statutory formulation.**

- **Omission of self-perceived gender identity:**
  - The Bill also **omits Section 4(2)** of the 2019 Act. That provision had recognised the right of a transgender person **to self-perceived gender identity.**
  - By removing this sub-section, the Bill departs from the earlier statutory basis of self-identification and **replaces it with a more regulated model of recognition.**
- **Recognition of transgender identity:**
  - The Bill substantially changes the recognition process under **Section 6**. The **District Magistrate is no longer to issue a certificate** merely on the basis of the existing framework; the certificate must now be issued only after examining the recommendation of a **designated medical authority** or board headed by a Chief Medical Officer or Deputy Chief Medical Officer.
  - In effect, legal recognition **moves away from a simpler administrative process and becomes dependent on medical scrutiny.** The Bill also adds that, once such a certificate is issued, the person **may change the first name** in the birth certificate and other official documents.
- **Change in gender after surgery:**
  - The Bill amends **Section 7** relating to change in gender after surgery. Under the 2019 Act, a person who underwent gender-affirming surgery **could apply for a revised certificate**; the **new Bill makes this compulsory rather than optional.**
  - It further requires the concerned medical institution to furnish information regarding such surgery to the District Magistrate and the prescribed authority. This increases the level of **state oversight in matters of gender recognition.**

- **Offences and penalties:**
  - A major change is made to **Section 18**, which is substituted by the Bill. The **earlier law punished general offences** such as denial of access to public places, forced labour, expulsion from residence, and abuse against transgender persons.
  - The **new Bill retains this basic framework but also adds harsher offences linked to coercion.** It provides severe punishment where a person is kidnapped or subjected to grievous hurt in order to force a transgender identity, and where a person is compelled to outwardly present as transgender for begging, servitude or bonded labour. Thus, while the Bill narrows recognition, it simultaneously strengthens coercion-related penal provisions.
- **Composition of the National Council for Transgender Persons:**

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- The Bill also amends **Section 16** relating to the composition of the National Council for Transgender Persons by restructuring representation of States and Union Territories. Representatives from States and Union Territories on the National Council for Transgender Persons are now required **to be officers of at least Director rank** in the concerned Ministry or Department, thereby introducing greater senior-level bureaucratic oversight.

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

- **Definition of Transgender Person under the 2019 Act:** Section 2(k) defines a transgender person as one whose gender does not match the gender assigned at birth. It includes **trans-man, trans-woman, persons with intersex variations**, genderqueer persons, and socio-cultural identities such as kinner, hijra, aravani and jogta. The definition is **broad and inclusive.**
- **Recognition of Identity:** The Act provides for a certificate of identity to be issued by the District Magistrate. This certificate is the legal basis for recognition as a transgender person.
- **Rights and Non-Discrimination:** The Act prohibits discrimination in education, employment, healthcare, housing, and access to public services. Its aim is to secure equal treatment and social inclusion.
- **Welfare Measures:** The government is required to provide healthcare facilities, frame welfare schemes, and promote rehabilitation and social inclusion for transgender persons.
- **Institutional Mechanism:** The Act establishes the National Council for Transgender Persons to advise the government, monitor policies, and support coordination on transgender rights and welfare.
- **Offences and Penalties:** The Act penalises forced labour, denial of access to public places, eviction from residence, and abuse or injury against transgender persons. These offences are punishable with imprisonment from six months to two years and fine.
- **Revised Certificate after Surgery:** Where a transgender person undergoes gender-affirming surgery, the Act allows such person to apply for a revised certificate reflecting the changed gender.

NALSA V. UNION OF INDIA (2014) – KEY PRINCIPLES:

- **Recognition of Third Gender:** The Supreme Court recognised transgender persons as a "third gender," moving Indian law beyond the male-female binary.
- **Right to Self-Identification:** The Court held that gender identity is a matter of self-identification and cannot be made dependent on surgery or medical procedures.
- **Constitutional Foundation:** The judgment linked transgender rights to Articles 14, 15, 16, 19(1)(a), and 21, thereby grounding them in equality, non-discrimination, expression, dignity, and personal liberty.
- **Affirmative Action and Social Justice:** The Court directed the state to treat transgender persons as socially and educationally backward classes for the purpose of reservations and other affirmative measures.
- **Welfare and Sensitisation:** The judgment also called for healthcare access, public facilities, and awareness measures to improve the social condition of transgender persons.

SIGNIFICANCE OF THE TRANSGENDER PERSONS (PROTECTION OF RIGHTS) AMENDMENT BILL, 2026:

- **Recasts the core framework of the 2019 Act:**
  - The Bill is significant because it goes beyond minor amendment and **reworks the basic architecture** of the 2019 law. It changes the definition of transgender person, removes the statutory right to self-perceived gender identity, alters the certification process, and revises the offence framework. In effect, it marks a shift from a **broader identity-based model to a narrower and more regulated one.**
- **Seeks to reduce ambiguity in identification:**
  - A key stated objective of the Bill is to address the perceived **vagueness of the 2019 definition and make identification more precise**. By moving to a narrower, category-based definition and linking certification to a medical board, it aims to reduce ambiguity in determining who qualifies under the Act.
- **Enables more targeted delivery of benefits:**
  - The Bill is also significant because it is designed to ensure that legal protections and welfare measures reach those whom the State considers to be **the intended beneficiaries**. The Statement of Objects and Reasons, as noted by PRS, indicates that the amendment seeks a more **precise identification of transgender persons for the purpose of availing benefits under the Act.**
- **Strengthens protection against coercion and exploitation:**
  - Another important significance lies in the **substitution of Section 18**. The Bill introduces **graded and much harsher punishments** for kidnapping, grievous hurt, forced assumption of transgender identity, and compelling a person to present as transgender for begging, servitude or bonded labour.
  - This gives the law **a stronger anti-coercion and anti-exploitation dimension than the 2019 framework.**
- **Reinforces bodily integrity and dignity in one respect:**
  - By specifically penalising mutilation, castration, severe injury and other coercive acts used to force identity or outward presentation, the Bill can be seen as reinforcing bodily integrity and human dignity in the context of violent abuse. In that sense, even critics of the Bill often acknowledge that its anti-coercion provisions address serious harms that warrant punishment.
- **Addresses some implementation gaps in the 2019 law:**
  - The amendment is presented as a response to difficulties faced during the implementation of the 2019 Act, especially in relation to broad definitions and the limited offence structure. It therefore has significance as an attempt, at least from the government's perspective, **to plug operational gaps and create a more structured enforcement framework.**
- **Has wider constitutional and policy significance:**
  - The Bill is significant not only administratively but also constitutionally, because it reopens the basic question of whether gender recognition should rest on self-identification or external validation.

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- For that reason, it has become a **major turning point in India's transgender rights framework** and in the larger debate between autonomy-based recognition and state-regulated recognition.

CHALLENGES AND CONCERNS ASSOCIATED WITH THE BILL:

- **Conflict with *NALSA* and constitutional rights:**
  - The strongest concern is that the Bill cuts against the constitutional logic of *NALSA*, which treated **self-identification as part of dignity, autonomy and personal liberty.** By removing self-perceived gender identity and introducing medical scrutiny, the Bill may face challenge under **Articles 14, 19 and 21.**
- **Exclusion of previously recognised identities:**
  - A major concern is that the Bill narrows the protected class by dropping the earlier express inclusion of **trans-men, trans-women and genderqueer** persons. Critics argue that this may leave many lived **gender identities outside the statutory umbrella.**
- **Biological reductionism and conceptual confusion:**
  - The Bill is criticised for shifting the focus from lived gender identity to congenital biological traits and coercively imposed identity. This risks conflating transgender identity, intersex conditions and criminal victimhood, thereby weakening conceptual clarity in a rights-based law.
- **Medical gatekeeping, privacy and bureaucratic burden:**
  - By tying recognition to medical-board recommendation, the Bill may create delays, intrusive scrutiny, uneven standards and dependence on local administrative capacity. It also **raises dignity and privacy concerns** because highly personal information becomes **subject to official verification and reporting.**
- **Fear and mental health distress:**
  - A major concern is that the Bill may further discourage recognition in a community where certification is already very low—PRS notes about **32,427 certificates** and **32,498 identity cards** issued so far, while the 2011 Census counted **4,87,803** persons in the "other" category. Critics argue that a more restrictive and medicalised framework could worsen exclusion, fear and mental-health distress.
- **Chilling effect on self-expression and community support:**
  - Critics raise an important concern that the new offence structure, especially around inducement or compelling outward presentation, may be framed too broadly. Critics fear this could chill counselling, peer support, mentoring or affirmation by friends and community networks, especially for young persons.
- **Child-rights concerns:**
  - A related concern is that the amended offence provisions may leave little room for **affirming a child's gender expression** even where support is compassionate rather than coercive. This raises issues of best interests, evolving capacity and the risk of criminalising supportive conduct.
- **No appeal mechanism and implementation uncertainty:**

- The Act **did not provide a redressal mechanism** for persons denied a certificate, and the Bill does not solve this gap. That means greater medicalisation may be accompanied by weak procedural safeguards and more litigation.

- **Uneven logic of protection:**
  - The Bill may create a paradox: it **strengthens criminal protection** in some situations while simultaneously **narrowing who can be legally recognised as transgender.** In effect, it may **widen punishment while shrinking personhood**.
- **Lack of consultation:**
  - Another criticism is that such a foundational change appears to have come without adequate consultation with affected communities and stakeholders. That weakens the democratic legitimacy of the measure and adds to resistance against it.

GOVERNMENT INITIATIVES FOR TRANSGENDER PERSONS:

- **SMILE Scheme:** The government launched the **SMILE (Support for Marginalised Individuals for Livelihood and Enterprise) Scheme** to support the rehabilitation, livelihood generation and social reintegration of transgender persons and other vulnerable groups. It aims to provide a more structured welfare framework beyond mere legal recognition.
- **Garima Greh:** Under the **Garima Greh** initiative, shelter homes have been set up to provide transgender persons with safe accommodation, food, medical care, counselling, recreation and skill development support. These homes are meant to address the problem of social exclusion and insecure living conditions.
- **Transgender Portal and Identity Card:** The government has created a dedicated **National Portal for Transgender Persons** to enable online application for certificate of identity and identity card. This digital system is intended to simplify recognition and improve access to welfare schemes and official services.
- **Health and Insurance Support:** Health-related initiatives include efforts to extend coverage under public welfare schemes such as **Ayushman Bharat**, along with targeted healthcare support for transgender persons. These measures are intended to improve access to treatment, medical assistance and institutional healthcare.
- **National Council for Transgender Persons:** The **National Council for Transgender Persons** has been established as an institutional mechanism to advise the government, monitor policy implementation, and coordinate measures for the protection of rights and welfare of transgender persons.

WAY FORWARD:

- **Align with NALSA principles:** The law should restore or accommodate **self-identification** while balancing administrative needs, so that constitutional guarantees of dignity and autonomy are not diluted.
- **Broaden and clarify definition:** The definition must remain inclusive of diverse identities such as trans-men, trans-women and genderqueer persons, while avoiding over-reliance on biological criteria.
- **Simplify certification process:** Reduce medical gatekeeping and ensure a **transparent, time-bound and appeal-based mechanism** for certification to avoid exclusion.

- **Safeguard privacy and dignity:** Clear guidelines should limit intrusive medical scrutiny and ensure confidentiality of personal data and identity-related information.
- **Strengthen welfare and outreach:** Focus should shift toward **education, employment, healthcare access and social sensitisation**, ensuring that benefits actually reach the community.
- **Clarify offence provisions:** Terms such as inducement or allurement should be narrowly defined to prevent misuse and avoid criminalising support systems or community networks.
- **Ensure participatory policymaking:** Future amendments must involve **meaningful consultation with transgender communities**, experts and civil society to improve legitimacy and effectiveness.

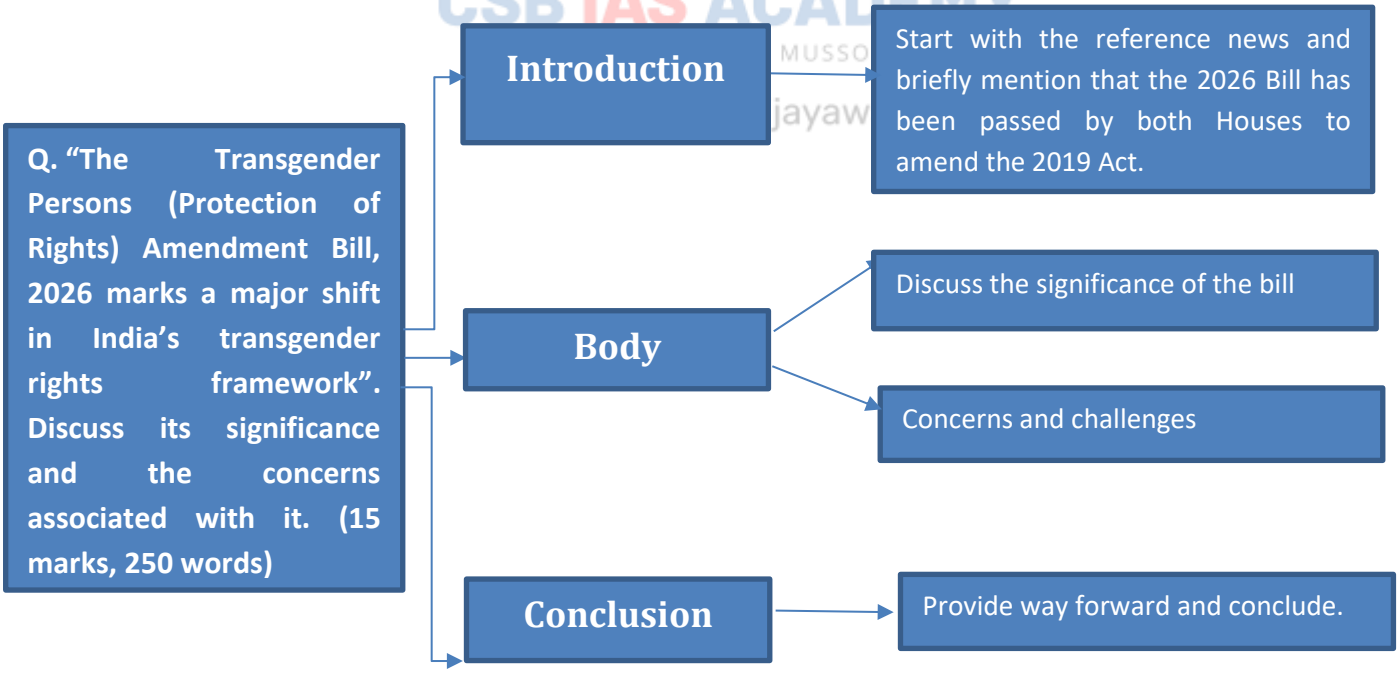
CONCLUSION:

- The 2026 Bill represents a major shift in India's transgender rights framework, moving from an autonomy-based approach toward a more regulated model. While it strengthens protection against coercion, its long-term success will depend on how well it balances **administrative clarity with constitutional values of dignity, inclusion and self-determination**.

PRACTICE QUESTION

Q. "The Transgender Persons (Protection of Rights) Amendment Bill, 2026 marks a major shift in India's transgender rights framework". Discuss its significance and the concerns associated with it. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, the **Transgender Persons (Protection of Rights) Amendment Bill, 2026** has been passed by both Houses of Parliament to amend the **Transgender Persons (Protection of Rights) Act, 2019**, and is currently

awaiting Presidential assent. The Bill is important because it marks a major shift in India's transgender rights framework, from a **broader identity-based approach toward a narrower, more regulated and medically supervised model of recognition.**

Significance of the Bill:

1. Structural shift in legal framework: The Bill significantly alters the 2019 Act by changing the definition, removing self-identification, and revising certification and offence provisions, marking a shift toward a more regulated model.

2. Reduced ambiguity in identification: By replacing a broad identity-based definition with a narrower category-based one and linking recognition to medical verification, it aims to reduce ambiguity in identifying beneficiaries.

3. Targeted delivery of benefits: A more precise definition is intended to ensure that welfare measures and legal protections reach those facing severe discrimination.

4. Stronger safeguards against coercion: The Bill strengthens penal provisions by introducing harsher punishments for forced identity change, exploitation and violence, thereby improving legal protection.

5. Protection of bodily integrity: By criminalising mutilation, castration and coercive identity imposition, the Bill reinforces dignity and bodily autonomy in cases of abuse.

Concerns and Challenges:

1. Conflict with NALSA principles: The removal of self-perceived gender identity departs from the *NALSA* judgment, which recognised self-identification as part of dignity and autonomy under Articles 14, 19 and 21.

2. Exclusion of identities: Dropping explicit inclusion of trans-men, trans-women and genderqueer persons may exclude many lived identities from legal protection.

3. Biological reductionism: The shift toward biological criteria risks conflating transgender identity with intersex conditions and coercion-based categories, weakening conceptual clarity.

4. Medical gatekeeping and privacy concerns: Mandatory medical certification may create bureaucratic hurdles, delays and intrusive scrutiny, affecting dignity and access.

5. Fear and mental health concerns: Only about **32,000 persons** have obtained certificates out of an estimated **4.8 lakh population**, indicating existing barriers. A more restrictive framework may further discourage recognition and worsen psychological distress.

6. Chilling effect on support systems: Broadly worded offence provisions may unintentionally criminalise counselling, peer support and community affirmation, especially for youth.

Way Forward:

- Restore space for self-identification in line with *NALSA* and constitutional guarantees of dignity and autonomy.
- Adopt an inclusive definition that does not exclude trans-men, trans-women and genderqueer persons.
- Ensure a simple, time-bound and appeal-based certification process to reduce medical gatekeeping.
- Put in place strong privacy safeguards to prevent intrusive scrutiny and protect personal data.
- Clarify offence provisions so that they punish coercion without criminalising community support or counselling.
- Strengthen implementation of welfare measures in education, healthcare, housing, skilling and employment.
- Institutionalise regular consultation with transgender communities in policymaking and rule-making.

The 2026 Bill marks a turning point in India's transgender rights regime by prioritising regulation and enforcement. Its success will depend on whether it can reconcile **precision with inclusion**, and **state control with individual dignity and autonomy**.

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8. POLITICAL REPRESENTATION OF WOMEN IN INDIA

iMPACT ANALYSIS

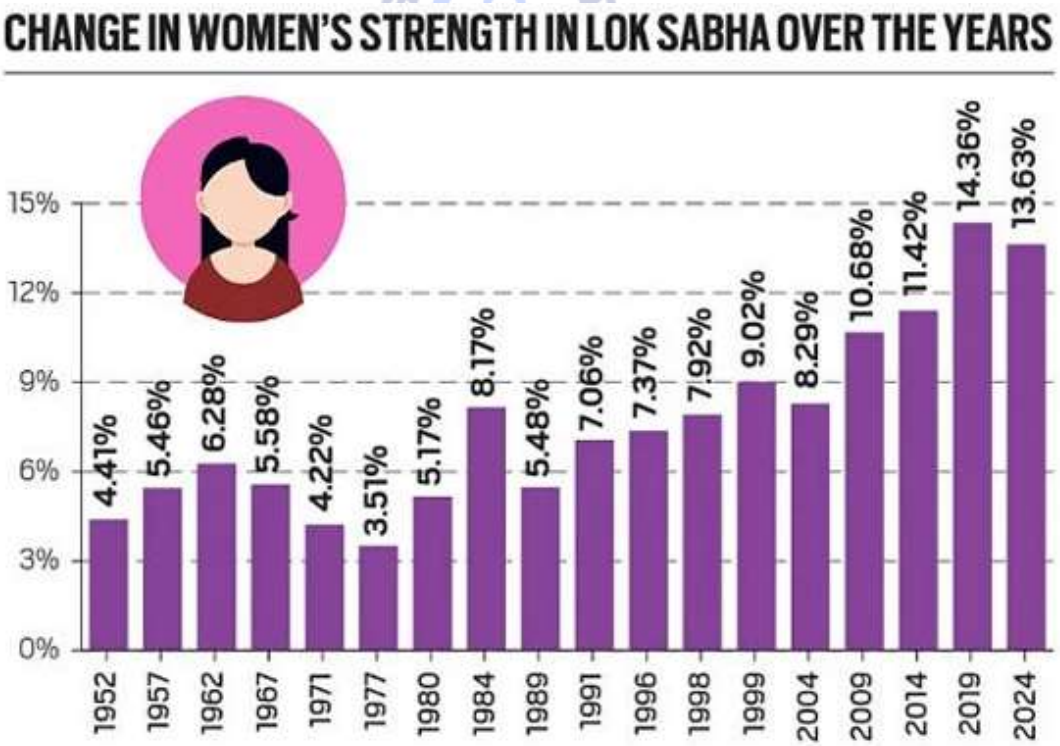
SYLLABUS:

GS 2 > Indian Polity > Political representation of Women

REFERENCE NEWS:

- India's electoral landscape shows a clear **gender paradox**: **women now participate in voting almost on par with**, and in several State elections **even more than, men**, but this has **not translated into comparable legislative power**.
- For instance, women constituted **48.62% of the electorate in the 2024 Lok Sabha electio**n and their **turnout (65.78%)** was slightly higher than men's (65.55%), yet only **74 women** were elected to the **18th Lok Sabha, just 13.6%** of the House. (Source: PRS Legislative Research)

MORE ON NEWS:



Women in Lok Sabha 2024. (Data via PRS Legislative Research)

- In the 2024 Lok Sabha election, only **800 of 8,360 candidates** were women, or **9.6%**. Also, **152 of 543 constituencies** had **zero women candidates**. (Source: Association for Democratic Reforms (ADR))
- **State Assemblies also show low representation.** PRS notes that women's average representation in **State Legislative Assemblies is about 9%**.

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- **Overall representation among MPs and MLAs is only about one-tenth. ADR** found that among **4,666 MPs and MLAs** across India, only **464 are women**, or **10%**.
- **Local bodies show much stronger representation due to reservation.** India has about **14.5 lakh elected women representatives in Panchayati Raj Institutions**, around **46% of the total**. Also, **21 States and 2 UTs** with PRIs provide **50% reservation** for women. (Source: PIB)
- **India is still below the global parliamentary average.** Women held only **13.6%** of seats in the 18th Lok Sabha, while the global average for women in national parliaments is much higher. India still lags behind several countries — **46% of MPs in South Africa, 35% in the UK, and 29% in the US, are women.**
- **India ranks lower than 140 other nations** in terms of the number of women serving in their national legislatures.

REASONS FOR LOW POLITICAL REPRESENTATION OF WOMEN IN INDIA:

- **Party nomination remains the biggest bottleneck:**
  - Women continue to be underrepresented mainly because **parties field too few of them.**
  - For instance, in the 2024 Lok Sabha election, **only 800 of 8,360 candidates** were women, **just 9.6%**, and **152 of 543 constituencies had no woman candidate at all.** (source: ADR)
- **Patriarchal social structure still shapes political entry:**
  - Politics continues to be seen as a male space, and this affects who gets encouraged, trained, and accepted as a leader.
  - For instance, women identified **patriarchal structures as the biggest obstacle at 22%,** followed by household responsibilities at 13% and lack of confidence, awareness, or experience at 12%. (source: Lokniti-CSDS Survey)

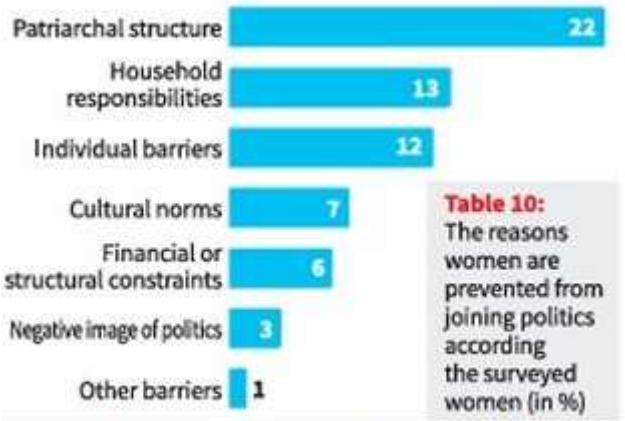

Table 10: The reasons women are prevented from joining politics according the surveyed women (in %)

Source:Lokniti –CSDS Survey on Women and Politics

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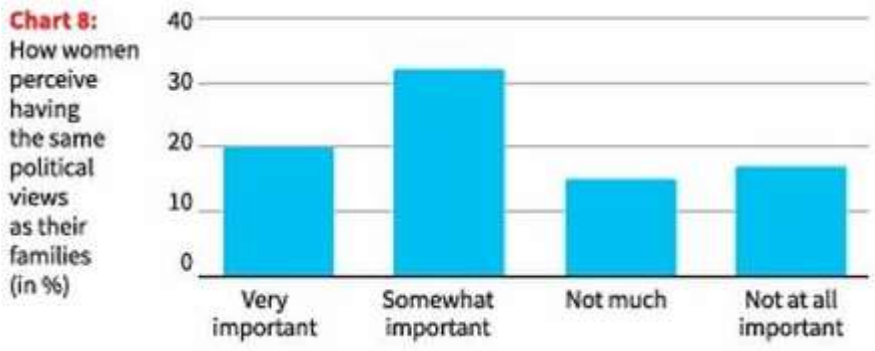
- **Campaign politics remains male-dominated:**
  - Women now vote nearly at par with men, but **public political activity still shows a gender gap.**
  - For instance, attendance at **election meetings and rallies rose from 9% in 2009 to around 16% in recent elections**, while participation in processions and door-to-door canvassing rose from about 5–6% to 11%; **men remained much more active.** (source: Lokniti-CSDS)
- **Domestic burden and mobility constraints reduce leadership-building:**
  - Even where voting gaps have narrowed, the older structural barriers have not fully disappeared from political life.
  - For instance, the long gender gap in turnout in earlier decades was linked to **lower female literacy, restricted mobility, domestic responsibilities, and weak political outreach to women.** In 1967, male turnout was 66.7% and female turnout 55.5%, a gap of 11.2 points; in 1971, the gap widened to 11.8 points. (source: Lokniti-CSDS)
- **Party structures remain male-led:**
  - Exclusion happens not only at election time **but inside parties, where leadership, strategy, and ticket distribution are largely controlled by men.**
  - For instance, ADR found that among 4,666 MPs and MLAs across India, **only 464, or 10%, are women.** PRS also notes that the 18th Lok Sabha has only 74 women MPs out of 543 seats.
- **Family mediation weakens women's political autonomy:**
  - Many women still **enter politics through family approval structures rather than as fully autonomous political actors.**
  - For instance, many women report needing permission to attend rallies, meet candidates, or campaign; only **51% reported voting without advice in 2014**, falling slightly to 50% in 2024, while **52% said sharing the same political views as the family is important**. (source: Lokniti-CSDS)



- **The "low winnability" argument is weak:**
  - **Parties often claim women are less electable**, but the data does not support that.
  - For instance, women's success rate was higher than men's in both 2019 and 2024**: 11% versus 6% in 2019, and 9% versus 6% in 2024**.
  - This suggests the bigger problem is **denial of tickets, not voter rejection**. (source: Lokniti-CSDS/The Hindu-based data synthesis)

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- **Access to money, networks, and dynastic capital is unequal:**
  - Indian electoral politics rewards finance, local patronage, and political lineage, and women often have less access to all three.
  - For instance, **58% of women felt it is easier for a woman from a political family to enter politics**, and 57% believed women from higher economic backgrounds have an advantage. (source: Lokniti-CSDS)

Table 9: The share of women who agree with the following statements about structural barriers (in %)

Statement	Agree (%)
Easier for woman with a political background to enter politics	58
Easier for woman from upper economic status to join politics compared to a woman from lower economic status	57
Parties routinely favour men over women, regardless of candidate merit	44
Voters are more likely to vote for men than women	44

- **Institutional support for higher legislatures came very late:**:
  - **Reservation helped build a women's leadership base in local bodies**, but similar support for Parliament and State Assemblies arrived only recently.
  - For instance, PRS notes that the **2023 constitutional amendment** provides **one-third reservation** in the Lok Sabha and State Assemblies, but implementation **is tied to a future census and delimitation exercise**.
  - In contrast, local bodies already have around 14.5 lakh elected women representatives, **about 46% of the total**, and **21 States and 2 UTs with PRIs provide 50% reservation.** (source: PRS; source: PIB)

SIGNIFICANCE OF GREATER POLITICAL EMPOWERMENT OF WOMEN:

- **Makes democracy more representative:**
  - Women are nearly half the electorate, so their **low legislative presence creates a democratic imbalance.**
  - For instance, women formed 47.63 crore of India's 97.97 crore electors in the 2024 Lok Sabha election, or 48.62% of the electorate; female turnout was 65.78%, slightly above male turnout at 65.55%, yet only 74 women entered the Lok Sabha.
- **Ensures better accountability and gender-sensitive governance:**
  - Greater political empowerment allows women to **participate directly in public decision-making**, which improves responsiveness to **women's lived concerns and strengthens implementation of gender-sensitive policy**.
  - For instance, the **Ministry of Panchayati Raj has highlighted** that **women-led local governance** is **helping push priorities such as health, education, skill development, economic opportunities, and social inclusion** into Gram Panchayat Development Plans.
- **Brings stronger attention to gender issues:**
  - Higher representation usually means greater policy focus on issues affecting **women's equality, safety, welfare, and participation.**

- For instance, **UN Women** identifies women's full and equal political participation as essential **to gender equality and inclusive governance**, and notes that higher numbers of women in decision-making bodies improve attention to women's concerns.

- **Improve economic performance and infrastructure outcomes:**
  - Women's representation is not only symbolically important; it can also **improve governance performance on the ground.**
  - For instance, evidence cited from UNU-WIDER (United Nations University – World Institute for Development Economics Research) shows that **constituencies represented by women legislators recorded about 1.8 percentage points higher annual economic growth**, and female-led constituencies had a **22 percentage point lower share of incomplete road projects.**
- **Breaks the patriarchal mould of Indian politics:**
  - Indian politics has long been dominated by **male leadership, party control, and legislative visibility.** Greater political empowerment helps dismantle this structure by normalising women as power-holders rather than exceptions.
  - For instance, women's turnout in State Assembly elections moved from being 4–5 percentage points lower than men in the early 1990s to a **positive gap** of 1.13 points in 2011–13, 2.82 points in 2015–16, and 1.6 points in 2020–25, showing that women's political participation from below has already **transformed electoral behaviour even if representation still lags**.
- **Advances substantive equality, not just formal equality:**
  - Voting rights alone do not guarantee equal influence; women also **need voice in candidature, lawmaking, budgeting, and oversight.**
- **Helps change stereotypes and social perceptions:**
  - Greater representation challenges the old image of **women as only homemakers** and reinforces their **legitimacy as lawmakers, administrators, and negotiators.** For instance, nearly 14.5 lakh women serve as elected representatives in Panchayati Raj Institutions, **around 46% of the total, giving women visible political leadership at a massive scale.**
- **Creates a pipeline for higher leadership:**
  - Greater political participation at the grassroots level helps produce future MLAs, MPs, ministers, and party leaders by giving **women experience in governance, negotiation, and public administration.**
  - For instance, the scale of **women's presence in local government**, about 14.5 lakh elected representatives, has **created one of the world's largest pools of women with direct political experience.**

MEASURES UNDERTAKEN FOR POLITICAL EMPOWERMENT OF WOMEN AND INCREASING THEIR PARTICIPATION:

Legislative measures

- **Nari Shakti Vandan Adhiniyam, 2023**: Provides **one-third reservation** for women in the Lok Sabha and State Legislative Assemblies, including SC/ST reserved seats. (source: PRS)
- **73rd and 74th Constitutional Amendments**: Mandated **not less than one-third**

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reservation for women in Panchayats and Municipalities, including chairperson posts. (source: Constitution of India; PRS)

- **Committee on the Empowerment of Women**: Set up in **1997 (11th Lok Sabha)** to examine measures for improving women's position and participation. (source: PIB)
- **Gender-neutral Lok Sabha rules**: Parliamentary terminology was made more gender-neutral, using terms such as **Chairperson**. (source: PIB)

Constitutional measures

- **Article 14 and Article 15**: Guarantee equality before law, prohibit discrimination on grounds including sex, and permit special provisions for women. (source: Constitution of India)
- **Article 46**: Directs the State to protect weaker sections from social injustice and exploitation. (source: Constitution of India)
- **Article 243D and Article 243T**: Provide reservation for women in Panchayats and Municipalities, including chairperson positions. (source: Constitution of India)
- **Article 325 and Article 326**: Ensure no exclusion from electoral rolls on grounds such as sex and provide adult suffrage for elections. (source: Constitution of India)

Policy and governance initiatives

- **Large-scale grassroots representation**: India has about **14.5 lakh elected women representatives** in Panchayati Raj Institutions, around **46%** of the total. (source: PIB)
- **Higher reservation by States**: **21 States and 2 UTs** with PRIs provide **50% reservation** for women, above the constitutional minimum. (source: PIB)
- **Model Women-Friendly Gram Panchayats**: Initiative launched to create at least one women- and girl-friendly Gram Panchayat in each district. (source: PIB)
- **Sashakt Panchayat-Netri Abhiyan**: Focuses on leadership and governance capacity-building of elected women representatives. (source: PIB)

International commitments

- **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), 1979**: Upholds women's equal right to participate in public and political life. (source: OHCHR/UN system)
- **Beijing Platform for Action, 1995**: Called for removing barriers to women in power and decision-making. (source: UN Women)
- **Millennium Development Goals (2000)**: Treated women's representation as a marker of gender progress. (source: UN system, general framework)
- **Sustainable Development Goals, especially SDG 5.5**: Calls for women's full and effective participation and equal leadership opportunities at all levels of decision-making. (source: UN Women/SDGs)

WAY FORWARD:

- **Mandate a minimum share of tickets for women within political parties.** The biggest bottleneck is nomination, not voter acceptance. For instance, only 800 of 8,360 candidates in the 2024 Lok Sabha election were women, and 152 constituencies had no woman candidate at all.
- **Operationalise the women's reservation law without delay.** The 2023 constitutional amendment provides one-third reservation in the Lok Sabha and State Assemblies; timely implementation is essential to convert voter strength into legislative power.
- **Build a pipeline from Panchayats to Parliament.** Local bodies already have a strong women's base because of reservation. For instance, about 14.5 lakh women, around 46% of elected PRI

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representatives, are already in grassroots institutions; parties should systematically promote them to Assembly and parliamentary politics.

- **Strengthen campaign finance, training, and leadership support for women.** Capacity-building initiatives such as the Sashakt Panchayat-Netri Abhiyan should be expanded to include campaign management, media handling, fundraising, and legislative skills.
- **Reduce social barriers that limit political autonomy.** Measures such as safer public spaces, childcare support, mobility assistance, and community-level political training can help women participate beyond voting and enter campaign politics more confidently. This is critical because women's public political participation still lags behind men despite near-parity in turnout.
- **Democratise party structures internally.** More women must be included in party leadership, candidate selection committees, and organisational hierarchies so that representation is not confined to symbolic or dynastic entry points. The current gap remains sharp: the 18th Lok Sabha has only 74 women out of 543 members.
- **Use global commitments as a reform benchmark.** SDG 5.5 calls for women's full and effective participation and equal opportunities for leadership at all levels of decision-making; India can align its political reforms more closely with this target.

CONCLUSION:

- Women in India have moved close to parity as voters, but not as lawmakers. The real task now is to convert electoral participation into equal representation, authority, and leadership. A truly inclusive democracy will be achieved only when women's numerical presence in elections is matched by their substantive presence in institutions of power.

PRACTICE QUESTION

Q. "Women in India have achieved near parity in voter turnout, yet their representation in legislatures remains disproportionately low." Discuss the reasons for the low political representation of women in India. (10 marks, 150 words)

APPROACH

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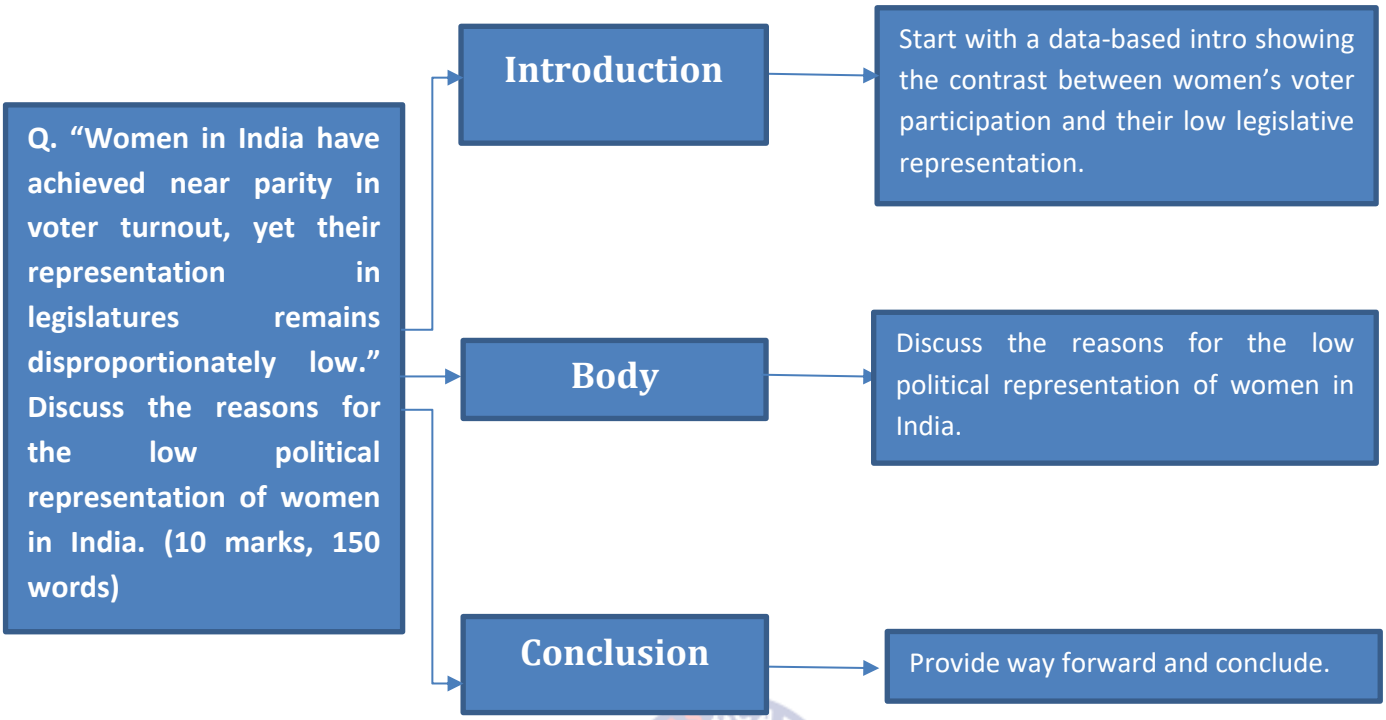

MODEL ANSWER

ndia presents a gender paradox in electoral politics: women are nearly equal participants as voters but remain underrepresented in legislatures. For instance, women constituted **48.62% of the electorate in 2024** and had a slightly higher turnout (**65.78% vs 65.55% for men**), yet only **74 women (13.6%)** were elected to the Lok Sabha. (source: PRS/ECI)

Reasons for low political representation:

1. **Party nomination bottleneck:** Political parties field very few women candidates. For instance, only **800 of 8,360 candidates (9.6%)** in 2024 were women, with **152 constituencies having none**. (source: ADR)
2. **Patriarchal social structure:** Politics is still viewed as a male domain. For instance, **22% women identified patriarchy as the biggest barrier**, followed by household responsibilities (13%). (source: Lokniti-CSDS)
3. **Male-dominated party structures:** Decision-making within parties remains male-dominated. For instance, women constitute only **13.6% of MPs** in the Lok Sabha. (source: PRS)
4. **Limited participation in campaign politics:** Women's participation in rallies and canvassing remains low (around **16% in rallies**), limiting leadership exposure. (source: Lokniti-CSDS)
5. **Domestic burden and mobility constraints:** Care responsibilities restrict time for political engagement. Earlier turnout gaps (e.g., **11.2% in 1967**) reflect these constraints. (source: Lokniti-CSDS)

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6. **Limited political autonomy:** Family influence restricts independent political action. Only about **50% women reported voting independently**. (source: Lokniti-CSDS)
7. **Unequal access to money and networks:** Electoral politics favours financial and dynastic capital. For instance, **58% believe political family background aids entry**. (source: Lokniti-CSDS)
8. **Delayed institutional support at higher levels:**Reservation strengthened local bodies but came late for Parliament and Assemblies. (source: PRS)

Government efforts:

- **Article 14 & 15:** Ensure equality and allow special provisions for women
- **Article 243D & 243T:** Provide **minimum one-third reservation** for women in Panchayats and Municipalities
- **73rd & 74th Amendments:** Enabled large-scale grassroots representation, with **~14.5 lakh women (46%) in PRIs** (source: PIB)
- **Nari Shakti Vandan Adhiniyam, 2023:** Provides **33% reservation in Lok Sabha and State Assemblies** (pending implementation)

Way forward:

- **Ensure minimum party tickets for women:** Since nomination is the main bottleneck, parties must field more women candidates.
- **Implement reservation law quickly:** The 2023 women's reservation framework should be operationalised without delay.
- **Promote women from local bodies to higher legislatures:** The strong base created in Panchayats and Municipalities should be used as a pipeline for Assemblies and Parliament.
- **Strengthen training and financial support:** Women need better access to campaign finance, leadership training, and mentoring.
- **Reduce social barriers:** Safer public spaces, childcare support, and greater political awareness can improve women's autonomous participation.

Greater political representation of women enhances accountability, inclusiveness, and development outcomes. Bridging the gap between women as voters and lawmakers is essential for achieving substantive democracy and gender equality.

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9. MODEL CODE OF CONDUCT

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Constitution

REFERENCE NEWS:

The **Election Commission of India (ECI)** enforced the **Model Code of Conduct (MCC)** immediately after announcing Assembly elections in **Assam, Kerala, Tamil Nadu, West Bengal, and Puducherry**.

Key MCC Measures

- Ban on misuse of **government machinery, vehicles, and advertisements** for electoral gain.
- Removal of political **defacement (posters, banners)** from public and private property.
- Restriction on demonstrations near private residences and use of property without consent.
- Ministers barred from combining **official duties with campaigning**

Monitoring & Enforcement Mechanism

- Complaint system via **1950 helpline** and **cVIGIL app**.
- Deployment of **5,173 flying squads** and **5,200+ surveillance teams** for quick response (within 100 minutes).
- Use of **SUVIDHA portal** for transparent allocation of public venues on a first-come basis.

Examples of Administrative Actions taken:

- Major bureaucratic reshuffle in **West Bengal**, including replacement of DGP, Kolkata Police Commissioner, and other senior officials.
- Transfer of Chief Secretary and Home Secretary from election-related duties to ensure neutrality.

MODEL CODE OF CONDUCT:

The **Model Code of Conduct (MCC)** is a set of **guidelines issued by the Election Commission of India (ECI)** to regulate the conduct of political parties, candidates, and governments during elections.

- It operates **from the announcement of the election schedule till declaration of results**.
- Its primary objective is to ensure **free, fair, and level-playing-field elections**.
- It prevents **misuse of government machinery, money power, and divisive politics**.
- MCC derives authority from **Article 324 of the Constitution**, which empowers the ECI with: **Superintendence, direction, and control of elections.** The Supreme Court has interpreted Article 324 as **broad and plenary**, allowing ECI to act in areas where law is silent.
- **No Statutory Backing:** MCC is **not a law**; it is a **consensus-based moral code** among political parties.
- Violations of MCC alone generally result in: Warnings, Censure, Temporary campaign bans

- **Indirect Legal Enforcement:** Many MCC provisions overlap with existing laws:
  - **Representation of the People Act, 1951 (RPA):** Section 123, corrupt practices (bribery, undue influence, communal appeals)
  - **Indian Penal Code (now Bharatiya Nyaya Sanhita, 2023):** Hate speech, bribery, intimidation
  - **CrPC provisions** for maintaining law and order
- **Mohinder Singh Gill v. Chief Election Commissioner (1978):** SC held that **Article 324 gives wide powers to ECI** to ensure free and fair elections. ECI can act **even in absence of specific legislation**.
- **A.C. Jose v. Sivan Pillai (1984):** SC clarified ECI's powers under Article 324 are **supplementary**, not overriding laws. Where legislation exists, ECI must act within that framework.
- **T.N. Seshan v. Union of India (1995):** Strengthened the authority of ECI as a **multi-member independent body**. Reinforced the role of MCC in ensuring electoral discipline.
- **S. Subramaniam Balaji v. State of Tamil Nadu (2013):** SC addressed the issue of **freebies in election manifestos**. Directed ECI to frame **guidelines for manifestos**, leading to their inclusion in MCC.
- **Election Commission of India v. Ashok Kumar (2000):** SC emphasised **non-interference of courts during election process**. Strengthened ECI's ability to enforce MCC without judicial delays.
- **Evolution of MCC in India**
  - **Phase 1, Origin (1960s):** First introduced in **Kerala Assembly elections (1960)** as a voluntary code. Widely circulated during **1962 general elections**.
  - **Phase 2, Institutionalisation (1970s–1990s): 1979,** MCC expanded to include **"party in power"** restrictions to prevent misuse of state machinery.
  - **1991 (T.N. Seshan era):** Strict enforcement. MCC became a **powerful regulatory tool**
  - **Phase 3, Expansion & Refinement (2000s–2010s):** Strengthened monitoring mechanisms (observers, expenditure tracking). **2013,** Manifesto guidelines added after SC judgment (Balaji case). Focus on curbing **money power and muscle power**.
  - **Phase 4, Digital & Technological Adaptation (2019–Present):** Inclusion of **Social media monitoring (2019)**. **cVIGIL app** for citizen reporting. Regulation of **AI-generated content and deepfakes.** Collaboration with tech platforms via **Voluntary Code of Ethics**

KEY PROVISIONS OF MODEL CODE OF CONDUCT:

- **General Conduct:**
  - No appeal to **caste, religion, or communal feelings** for securing votes.
  - No activities that **increase tension between communities**.
  - Criticism of opponents must be limited to **policies, programmes, and past performance**.
  - No **bribery, intimidation, or inducement** of voters.
  - No use of **places of worship** for election propaganda.
- **Meetings (Public Rallies)**
  - Parties must **inform local authorities in advance** about venue and time.
  - Ensure **law and order, traffic management, and security arrangements**.
- **Processions**
  - Advance coordination to prevent **clashes between rival processions**.
  - No **burning of effigies** or provocative acts against opponents.

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- **Polling Day Regulations**
  - No campaigning within **100 meters of polling stations**.
  - Only **authorized persons** (voters, officials, agents) allowed inside polling booths.
  - No **distribution of liquor, food, or inducements** near polling areas.
- **Polling Booth Conduct**
  - Party workers must carry **identity badges**.
  - Identity slips must be **plain (no party symbol or candidate name)**.
- **Observers and Monitoring**
  - ECI appoints **General Observers, Expenditure Observers, Police Observers**
  - Candidates can report MCC violations directly to them.
- **Party in Power (Most Crucial Provision)**
  - To prevent misuse of incumbency no use of **official machinery, vehicles, or personnel** for campaigning.
  - No **announcement of new schemes, grants, or projects**.
  - No **foundation stones or ad-hoc appointments**.
  - No **government-funded advertisements** favoring ruling party.
  - Ministers cannot **combine official visits with electioneering**.
- **Election Manifestos** (Added after 2013 Supreme Court judgment)
  - Manifestos should not contain **irrational promises (freebies)** that distort elections.
  - Must indicate **rationale of promises, financial feasibility** and aim is to prevent **undue influence on voters**.
- **Use of Public Resources**
  - Equal access to p**ublic grounds, helipads, rest houses**
  - No monopoly by ruling party over public facilities.
- **Media and Campaigning**
  - No **hate speech, fake news, or unverified allegations**.
  - Increasing regulation of **social media campaigns, paid news and surrogate advertising**
- **Expenditure and Inducements**
  - Monitoring of **money power, distribution of cash/liquor/freebies**
  - Use of tools like **cVIGIL app** for real-time reporting of violations.

SIGNIFICANCE OF MCC:

- **Ensures fair and peaceful elections:** The codes act as a guideline for all parties to follow. It also lays down procedures to be followed for peaceful campaigning in a constituency. This ensures equality and peaceful conduct of the election process.
- **Prevents misuse of power:** By laying down specific guidelines for the party in power, the MCC prevents any form of misuse of government machinery or public exchequer for elections that could create an unfair advantage to them.
- **Protects voters:** The codes prohibit bribing or intimidation of voters. It also prohibits parties from making promises that exert an undue influence on voters. Thus, the codes ensure that voters are not misled and they execute their vote with full freedom.

- **Protects private life:** MCC prohibits parties and candidates from criticism of all aspects of private life, not connected with the public activities of the leaders or workers of other parties.
- **Protection from false claims:** Criticism of other parties or their workers based on unverified allegations or distortion are not permitted under the MCC. This provision helps prevent a political squabble to a great extent.
- **Ensures secularism in elections:** MCC prohibits places of worship like Temple, Mosque or Gurudwara from being used as forum for election propaganda. Further, the code prohibits appeal to caste or communal feelings for securing votes.
- **Aligns with changing trends:** Over the years, the MCC has adjusted to the changing nature of elections and campaigning. Inclusion of social media and AI-generated content under the monitoring ambit of MCC to counter manipulated videos and deepfakes. For instance, EC recently mandated "disclosure tags" on AI-generated campaign videos.
- **Acts as a moral restraint even without legal backing:** MCC is not legally enforceable, but its moral authority works as a behavioural check on political actors. The **Parliamentary Standing Committee (2013)** recommended giving the MCC statutory backing, but the Election Commission opposed the move, arguing that legal enforcement would lead to court challenges and delays, which is impractical given that elections must be completed within a tight 45-day window.
- **Builds public trust in democracy:** Public perception of neutrality is essential. When MCC is enforced strictly (e.g., transferring officials, restraining ministers from campaigning using government platforms), people perceive the election process as fair.
- **Encourages accountability & transparency:** EC publishes compendium of MCC violations and actions taken. Parties are compelled to justify decisions on schemes and announcements after MCC is in force.

CHALLENGES WITH MCC:

- **No legal backing:** Since the MCC itself does not have the force of law, it is enforced through executive decision-making. It remains, therefore, ambiguous and uneven as far as the modality of implementation and certainty of execution, are concerned.
- **Efficiency of Election commission**: In a country with 968 million voters sprawled over 3.2 million square kilometers, the Election Commission lacks the resources and legal expertise to take decisions on cases of MCC violations effectively.
- **Difficult to monitor social media:** Social-media has a far and wide reach and it is difficult to keep track of all the campaigning activities through it.
- **Advantage to ruling party exists:** The MCC prohibits advertisement at the cost of public exchequer in newspapers/media during the election period. However, since the MCC comes into operation only from the date on which the Commission announces elections, the government can release advertisements prior to the announcement of elections. This gives an advantage to the ruling party to issue government sponsored advertisements, which gives it an undue advantage over other parties and candidates.
- **Loophole allows "compliance in letter, violation in spirit":** Governments announce schemes or financial benefits just before MCC to escape technical violation.

- For instance, the **Mukhyamantri Mahila Rojgar Yojana (Bihar)** was announced just before the Model Code of Conduct (MCC) kicked in, allowing the government to comply with the code in letter, but the continued disbursal of cash benefits during the MCC period amounted to a clear violation in spirit.

- **MCC lacks punitive consequence:** Since MCC is not legally enforceable, most violations result only in warnings or temporary bans from campaigning — there is no deterrent effect.
- **Difficulty in regulating AI-generated deepfakes & misinformation:** Even though the EC now mandates disclosure tags on AI-generated campaign videos, detecting manipulated content across thousands of pages and messaging apps remains difficult.
- **Legal impracticality of making MCC statutory:** The Parliamentary Standing Committee (2013) recommended making MCC legally binding, but the EC opposed it because court challenges could delay elections, which must be concluded within a narrow 45-day window.

SHOULD MCC BE GIVEN STATUTORY RECOGNITION?

NO:	YES:
○ **Delays the election process:** The Election Commission has argued against making the MCC legally binding, stating that elections must be completed within a relatively short time and judicial proceedings typically take longer. Therefore, it is not feasible. ○ **Already enforceable:** Most provisions of the MCC are already enforceable through corresponding provisions in other statutes, such as the Indian Penal Code, 1860, Code of Criminal Procedure, 1973, and Representation of the People Act, 1951. ○ **Requires flexibility:** The EC needs flexibility to deal with unprecedented situations that can arise at any time. Providing legal backing can take away this freedom and further complicate the election process. ○ **Violates the spirit of MCC:** MCC is a document designed in consensus with political parties. Any attempt to bind it legally would affect the spirit of consensus arrived at.	○ **Eliminates ambiguity:** Providing a legal backing to the code will eliminate the ambiguities that currently surround the MCC. ○ **Empowers the Election Commission:** The EC of India has been repeatedly demanding the government for more powers to effectively manage elections. Eg: Explicit powers to postpone or cancel polls if incidents of bribery of voters are reported in any constituency. Providing legal backing to MCC can greatly help overcome this issue. ○ **Supported by committees**: The Standing Committee on Personnel, Public Grievances, Law and Justice, in 2013, recommended making the MCC legally binding. Another Standing Committee recommended that the MCC be made a part of the Representation of the People Act, 1951.

WAY FORWARD:

- **Provide Limited Statutory Backing:** Give MCC **legal enforceability through amendments in the Representation of the People Act (RPA), 1951**. **Dinesh Goswami Committee (1990)** recommended

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making MCC legally binding. **Parliamentary Standing Committee (2013)** also suggested integrating MCC into RPA.

- Countries like **Canada** have legally enforceable election conduct laws ensuring strict compliance.

- **Strengthen Powers of the Election Commission (ECI):** Empower ECI to **deregister/suspend political parties** for repeated violations. Impose **heavier penalties and longer campaign bans.** Ensure **independent secretariat and financial autonomy** (similar to CAG/UPSC).
- **Fast-Track Electoral Justice:** Establish **special election tribunals** to resolve MCC violations within **6 months**. Prevent delays that dilute deterrence.
    - Many democracies like **UK** ensure quick disposal of electoral disputes through dedicated mechanisms.
- **Regulate Digital Campaigning and AI:** Make **mandatory legal obligations for social media platforms** (not just voluntary codes). Introduce **3-hour takedown rule** for MCC violations, **AI watermarking** for political ads, real-time tracking of **deepfakes and hate speech.**
    - **European Union Digital Services Act (DSA)** mandates quick removal of harmful online content.
- **Tackle Freebies and Manifesto Populism:** Define **clear distinction between welfare schemes and electoral freebies**. Make it mandatory for parties to provide **fiscal impact statements** and ensure **financial viability.**
    - Follow **Supreme Court guidance (S. Subramaniam Balaji case, 2013)**.
- **Cap Political Party Expenditure:** Introduce **limits on total party expenditure**, not just candidate spending. Ensure transparency in campaign funding and third-party advertising. Countries like **UK and Germany** impose strict limits on party expenditure.
- **Expand Scope of "Silence Period":** Amend **Section 126 of RPA** to include social media, OTT platforms, digital advertising. This prevents last-minute digital manipulation of voters.
- **Use Advanced Technology for Monitoring:** Integrate **AI-based surveillance** with tools like **cVIGIL app,** data analytics for detecting cash distribution, communal speeches, real-time **geo-tagging of violations**.
- **Increase Transparency and Accountability:** Publish **real-time MCC violation reports**. Ensure **uniform enforcement across parties** to maintain credibility. Create an independent **Election Ombudsman** for grievance redressal.
- **Promote Voter Awareness and Ethical Politics:** Conduct **mass awareness campaigns** on ethical voting, reporting violations. Encourage **intra-party codes of ethics**.
    - **Australia** promotes civic awareness campaigns to ensure responsible electoral behavior.

PRACTICE QUESTION

Q. The Model Code of Conduct (MCC) plays a crucial role in ensuring free and fair elections in India. Examine. Discuss the need for reforms in light of emerging technological and political trends. (15 marks, 250 words)

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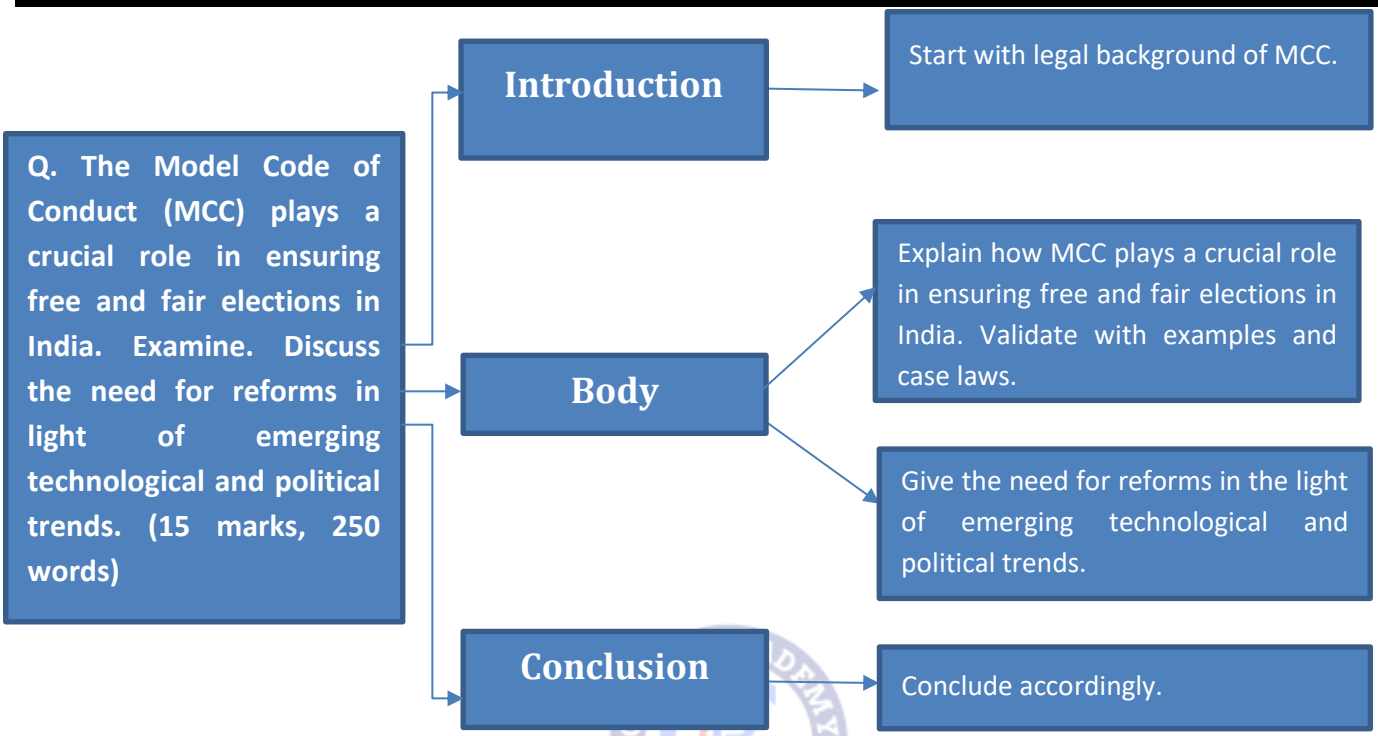

MODEL ANSWER

The **Model Code of Conduct (MCC)** is a set of guidelines issued by the Election Commission of India (ECI) to regulate the conduct of political parties, candidates, and governments during elections. It derives its authority from **Article 324 of the Constitution**, which empowers the ECI with the superintendence, direction, and control of elections.

Although the MCC lacks statutory backing, the Supreme Court in **Mohinder Singh Gill v. Chief Election Commissioner (1978)** upheld the wide and plenary powers of the ECI to ensure free and fair elections.

Role of MCC in Ensuring Free and Fair Elections

- **Ensures Level Playing Field**: Restricts the ruling party from misusing state machinery, official vehicles, or public funds. Ban on government advertisements and schemes during elections.
- **Prevents Misuse of Incumbency**: Ministers are barred from combining official duties with campaigning. Inclusion of restrictions on ruling party since 1979 strengthened electoral neutrality.
- **Checks Corrupt Practices**: Prohibits bribery, intimidation, and inducements, aligning with **Section 123 of RPA, 1951**. Ensures ethical campaigning and curbs money power.
- **Promotes Secular and Issue-Based Campaigning**: Bars appeals to caste, religion, and communal sentiments. Reinforces constitutional values of secularism.
- **Regulates Campaign Conduct**: Provides rules for rallies, processions, and polling day behavior, ensuring law and order.No campaigning within 100 meters of polling booths.
- **Enhances Transparency through Monitoring Mechanisms**: Tools like **cVIGIL app** and deployment of flying squads enable real-time monitoring. Quick response system (within 100 minutes) to complaints.
- **Regulates Election Manifestos**: Following **S. Subramaniam Balaji v. State of Tamil Nadu (2013)**, guidelines require rationality and financial feasibility of promises.
- **Strengthens Public Trust in Elections**: Administrative actions like transfer of officials ensure impartiality and credibility of the electoral process.

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Need for Reforms in Light of Emerging Technological and Political Trends

- **Address Digital Misinformation and Deepfakes**: Rise of AI-generated content, fake news, and micro-targeted propaganda undermines electoral integrity.
- **Regulate Social Media and Surrogate Advertising**: Proxy campaigning through influencers and unofficial pages bypasses MCC and expenditure limits.
- **Provide Limited Statutory Backing**: Lack of legal enforceability weakens deterrence; committees like the **Dinesh Goswami Committee (1990)** recommended legal status.
- **Clarify "Freebies" vs Welfare Debate**: Increasing populist promises distort electoral choices; need for clear legal and fiscal guidelines.
- **Strengthen Enforcement Powers of ECI**: Empower ECI to impose stricter penalties, including deregistration of parties for repeated violations.
- **Expand Scope of Silence Period**: Section 126 of RPA must explicitly include digital platforms to prevent last-minute manipulation.
- **Fast-Track Adjudication of Violations**: Establish election tribunals for time-bound disposal of MCC-related cases.
- **Enhance Institutional Capacity**: Improve manpower, technology integration (AI monitoring), and financial autonomy of ECI.

The MCC, though non-statutory, has evolved into a powerful instrument ensuring **electoral integrity, fairness, and democratic accountability** in India. A balanced approach—combining **limited legal backing, technological regulation, and institutional strengthening**—is essential to transform the MCC into a more effective guardian of India's democratic process.

10. CUSTODIAL TORTURES IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity > Judiciary > Criminal justice system

REFERENCE NEWS:

- Recently, Akash Delison, a 26-year-old Dalit man from the Sivaganga district, Tamil Nadu, died two days after being taken into **police custody in an assault case,** with police claiming he was injured after jumping off a bridge while trying to escape; however, the case took a serious turn after his **father alleged custodial torture**, and **Delison's dying declaration before a judicial magistrate** stated that **police blindfolded him, placed stones under his leg, covered it with a wet sack, and struck it with an iron rod, breaking his leg.**

WHAT IS CUSTODIAL TORTURE?

- Custodial torture refers to the **use of physical, mental, or psychological violence** against individuals while they are in **police or judicial custody**.
- It includes **illegal detention, wrongful arrest, humiliation, extortion of information under pressure**, and various forms of **physical, mental, and sexual violence**.
- Although widely condemned, **custodial violence is not explicitly defined under Indian law**.

STATS:

- **160 deaths in police custody** were reported to NHRC in 2023–24.
- **2,346 deaths in judicial custody** were reported to NHRC in 2023–24.
- 1,995 prisoners died in judicial custody in 2022, including 159 unnatural deaths.
- An earlier MHA reply based on NHRC data reported **155 police custody deaths and 2,152 judicial custody deaths in 2021–22.**
- **55 suicides** linked to police torture were recorded in **2020** (Source: National Campaign Against Torture (NCAT))
- Cases of **rape and custodial sexual violence** against women in custody were also reported (Source: NCAT)

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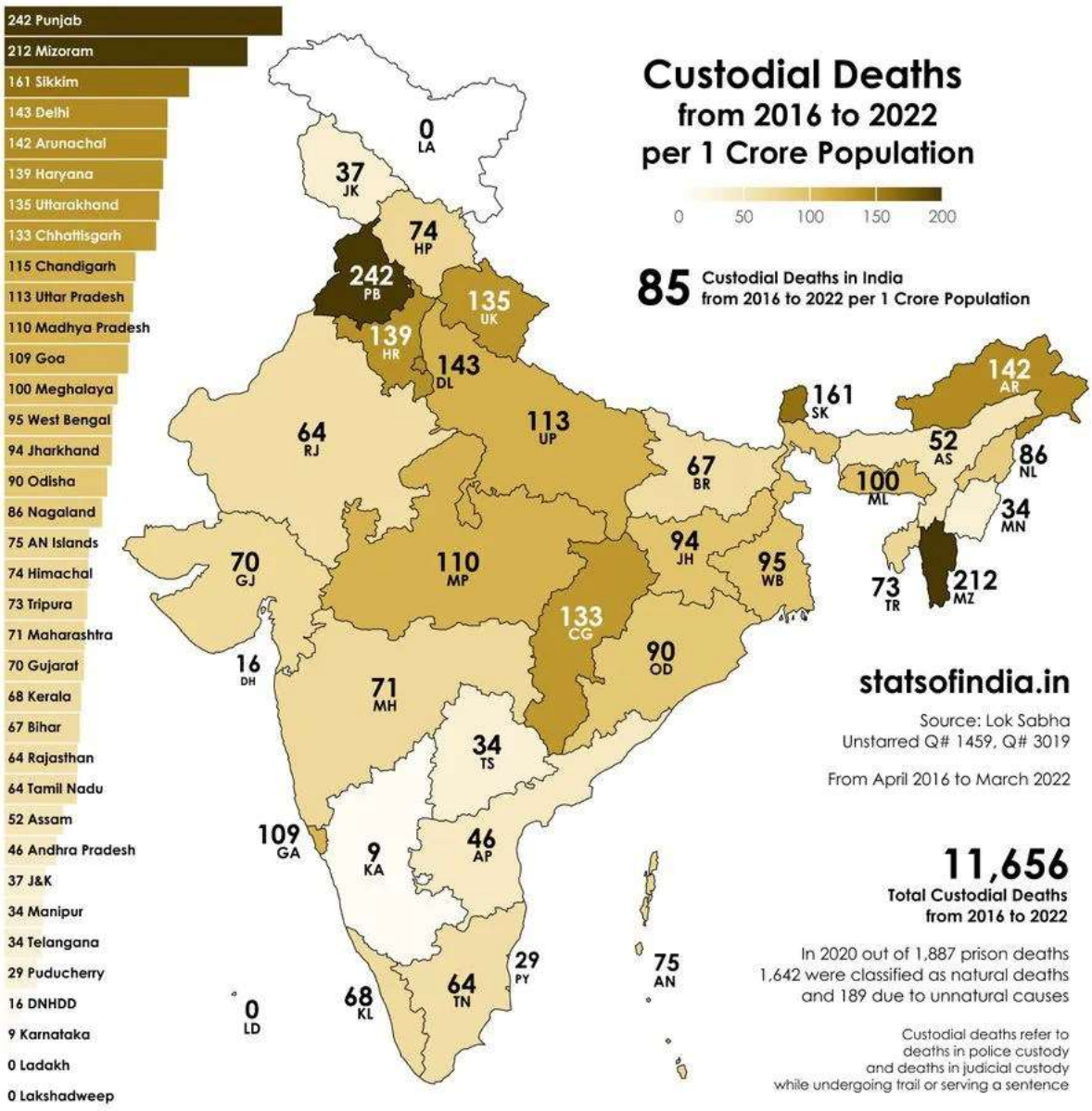

CAUSES FOR CUSTODIAL TORTURE IN INDIA:

- **Poor Investigation System:**
  - State police officers **lack professional investigative training and modern forensic tools**, leading them to rely on **third-degree methods** to extract confessions.
  - **Instead of evidence-based investigation**, torture is used as a **shortcut to secure confessions**.
  - The **2025 Global Torture Index** flagged India as a **"high-risk" country** due to systemic use of torture in routine investigations.

- **Massive Judicial Backlog & Slow Trials:**
  - As of **February 2025, over 5 crore cases** are pending in **Indian courts** (**Source: Indian Express**).

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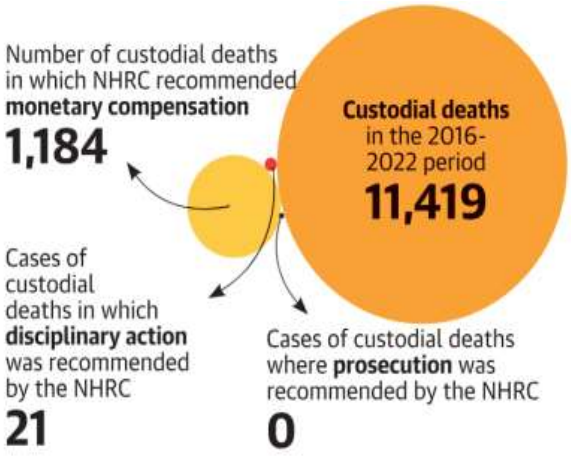
- This **overburdened judicial system** creates **immense pressure** on law enforcement to **deliver quick results**, leading to the use of **custodial violence as a shortcut for expedited justice**.

- **Failure to Pass an Anti-Torture Law**:
  - Despite the **Law Commission's proposal of an anti-torture law in 2017,** India does not have any anti-torture law.
  - Though the **"Prevention of Custodial Torture Bill, 2024"** was introduced in Parliament, it has not been enacted, leaving the legal vacuum unresolved.
- **Workload & Long Hours Contributing to Brutality:**
  - The **2019 Status of Policing in India Report (SPIR)** found that **police officers work an average of 14 hours per day**, with **80% exceeding the standard 8-hour shift**.
  - Excessive working hours, stress, and lack of mental health support contribute to burnout and reliance on violent interrogation methods to extract confessions.
- **Non-Ratification of UNCAT (1984)**:
  - India signed the **UN Convention Against Torture (UNCAT)** in **1997** but **never ratified it**, preventing legal reforms that could **criminalize torture**.
  - **Recent extradition rejections (Sanjay Bhandari, Tahawwur Rana)** cite **India's failure to ratify UNCAT** as a key concern.
- **Low Conviction Rates:**
  - Due to **poor case-building, weak forensic infrastructure, and lack of training**, conviction rates remain **low**, forcing police to **resort to coercion** to obtain confessions.
  - For instance, many custodial deaths and third-degree torture incidents occur **when police fail to gather sufficient evidence** and instead attempt to **force confessions through violence**.
- **Public Pressure & Acceptance of Brutality**
  - **Unrealistic Expectations on Crime Control**: The public **demands swift action** in high-profile cases, leading to tolerance for police excesses, **fake encounters, and third-degree torture.**
  - **Media Sensationalism**: The portrayal of "**encounter specialists**" and **"tough policing"** in films and media normalizes **brutality as an effective tool for justice**.
- **Poor State of Prisons & Custodial Conditions:**
  - Indian prisons operate at **130-150% capacity**, forcing inmates to endure **inhumane conditions, violence, and psychological distress**.
  - **Over 70% of prisoners in India are undertrials**, many **languishing for years without trial**, increasing their vulnerability to **custodial violence, sexual abuse, and forced labor**.
  - Mental and physical torture often pushes detainees to **commit suicide**, as seen in **NHRC reports on police lockup deaths.**
- **Challenges in Evidence Collection:**
  - **Falsification of Custodial Deaths as 'Suicides'**: Many custodial deaths are **reported as suicides** without proper forensic evidence.
  - **Pre-Arrest Torture**: The accused are often **tortured before formal arrest**, allowing police to **claim injuries were pre-existing**.

  - In Nov 2025, the Supreme Court **reprimanded the Centre for failing to file compliance reports on CCTV installation** in CBI, ED, NIA offices.
- **Lack of CCTV & Videography**:
  - Despite **Supreme Court orders mandating CCTVs in police stations**, many lack **functional recording systems**, making **evidence collection difficult**.
  - For instance, in **Common Cause v. Union of India (2018)**, the SC directed **audio-video recording of interrogations**, but implementation remains poor.
- **Absence of Independent Investigation Mechanisms**
  - The **amended section 176 (1A) of the CrPC** mandates **judicial inquiry** into every case of death, rape and disappearance in the custody.
  - Most states have **flouted the mandatory judicial inquiry into custodial deaths**.
  - Probes are generally taken by the police itself, but the fraternity within force undermines the independence of the investigation.
- **Police Investigating Themselves**:
  - Internal police probes lack independence due to **institutional fraternity**, shielding **guilty officers from accountability**.
- **NHRC's Limited Enforcement Powers:**
  - While NHRC **investigates custodial violence**, it mainly issues **recommendatory relief** such as **compensation and disciplinary advice**; it **cannot directly prosecute accused officials**, and its recommendations are **not binding.**
  - This significantly limits accountability. NHRC's recent observations also point to delays in compliance by state agencies, further weakening enforcement.



- **Armed Forces (Special Powers) Act (AFSPA)**:
  - Grants **excessive immunity** to the armed forces, leading to **human rights abuses in conflict zones**.
  - Cases like **Manipur fake encounter killings** (recognized by SC) highlight the misuse of **AFSPA in shielding custodial torture**
- **Social Bias & Vulnerable Groups:**
  - 2025 Global Torture Index found that custodial torture disproportionately targets **Dalits, Adivasis, Muslims, migrants, LGBTQIA+ persons**.
  - Structural discrimination increases vulnerability during arrests, interrogations, and custody.

IMPACT OF CUSTODIAL TORTURE IN INDIA:

- **Violation of Fundamental Rights & Human Dignity**
  - **Article 21 (Right to Life & Personal Liberty) is violated** as custodial torture deprives individuals of dignity and protection from inhuman treatment.

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- **International human rights norms like UDHR, ICCPR, and UNCAT prohibit torture**, but India's **failure to ratify UNCAT weakens its credibility**.

- **Physical & Psychological Trauma**
  - Victims suffer **severe physical abuse, lifelong injuries, or death** (**NHRC: 151 police custody deaths in 2021**).
  - **Mental health issues like PTSD, depression, and suicides** are common among survivors (**55 suicides linked to police torture in 2020**).
  - According to the 2025 Global Torture Index factsheet, custodial violence and deaths remain "systemic and widespread" across India.
  - Human-rights documentation in 2024–25 highlights severe **long-term psychological harm, including trauma, anxiety, and emotional deterioration among survivors.**
- **Erosion of Public Trust in Law Enforcement**
  - Custodial violence fuels **public fear, hostility, and lack of cooperation with police**.
  - Cases like **P. Jayaraj & J. Bennicks custodial deaths (Tamil Nadu, 2020)** led to mass protests and demands for police accountability.
  - Recent custodial deaths reported in 2025 have triggered **renewed outrage and calls for transparency**, reflecting declining trust in policing institutions.

- **Breakdown of Criminal Justice System**
  - **Coerced confessions lead to wrongful convictions** and **violate Article 20(3) (Right Against Self-Incrimination)**.
  - **Police focus on torture instead of evidence-based investigation**, allowing actual perpetrators to escape justice.
  - Rights bodies in 2024–25 warn that torture-based **confessions distort criminal investigations and undermine rule-of-law, enabling miscarriages of justice.**
- **Social & Economic Consequences**
  - Families face **economic hardships, job losses, and legal costs**, especially if the victim was a **breadwinner**. Victims' families suffer **social stigma and isolation**, worsening their marginalization.
  - Reports in 2024–25 show that marginalized communities often face long-term social exclusion and intergenerational trauma after custodial deaths.
- **Diplomatic & International Repercussions**
  - **India's extradition requests have been rejected** due to the risk of torture (**Sanjay Bhandari & Tahawwur Rana cases**).
  - **Failure to ratify UNCAT weakens India's global human rights reputation**, leading to criticism from **Amnesty International & Human Rights Watch**.
  - The 2025 Global Torture Index has intensified scrutiny of India's human-rights practices, affecting extradition, asylum assessments, and diplomatic negotiations.
- **Institutional Impunity & Weak Accountability:**
  - The 2025 Global Torture Index notes that **impunity for perpetrators remains very high in India**, with delayed or incomplete inquiries into custodial deaths.

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- Investigations often stall for years, denying justice to victims and reinforcing systemic abuse.

- **Disproportionate Impact on Marginalized Groups:**
  - Reports show custodial torture **disproportionately affecting Dalits, Adivasis, Muslims, migrants, and economically weak groups.**
  - Structural discrimination heightens vulnerability during arrests, interrogations, and pre-trial detention.

EFFORTS TO PREVENT CUSTODIAL TORTURES:

I. INTERNATIONAL:

- **Universal Declaration of Human Rights, 1948 (UDHR)**
  - **Article 5:** Prohibits **torture and cruel, inhuman, or degrading treatment**.
- **International Covenant on Civil and Political Rights, 1966 (ICCPR)**
  - **Article 6:** Guarantees the **right to life** and prohibits **cruel, degrading, and inhuman treatment**.
- **UN Convention Against Torture (UNCAT), 1984**
  - Requires **effective measures to prevent torture**.
  - **Prohibits extradition** to countries practicing torture.
  - **India: Signed but NOT ratified**.
- **Nelson Mandela Rules (UN Standard Minimum Rules for the Treatment of Prisoners, 2015)**
  - Establishes **international standards for humane treatment of prisoners**.
  - Encourages **independent prison monitoring** to prevent abuse.

II. NATIONAL:

- **Constitutional**:
  - **Article 21:** Article 21 states that "No person shall be deprived of his life or personal liberty except according to procedure established by law".
  - **Article 22:** Article 22 provides Protection against arrest and detention in certain cases.
  - **Seventh schedule: Police and public order are state subjects** as per the Seventh Schedule. So, it is primarily the responsibility of the state government concerned to ensure protection of human rights of the citizens.
- **Bharatiya Nyaya Sanhita (BNS):**
  - **Section 176: Causing hurt by a public servant** in custody is punishable with up to **10 years imprisonment**.
  - **Section 177: Causing grievous hurt by a public servant** to extract confessions carries **life imprisonment**.
  - **Section 178: Wrongful confinement by a public servant** is punishable with up to **10 years imprisonment**.
- **Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023:**
  - **Section 43:** Regulates how arrest is made and provides that arrest-related force cannot cause the death of a person who is not accused of an offence punishable with death or life imprisonment.
  - **Section 196:** Mandates a judicial inquiry in cases of custodial death, disappearance, or rape, though compliance remains uneven in practice.
  - **Section 183:** Requires confessions to be recorded before a Magistrate and only when made voluntarily.
- **Bharatiya Sakshya Adhiniyam (BSA), 2023:**

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- **Section 22:** Confessions obtained through inducement, threat, coercion, or promise are inadmissible.
- **Protection of Human Rights Act (PHRA), 1993:**
  - **Established NHRC & SHRCs** to investigate custodial violence.
  - **NHRC lacks prosecutorial powers**, reducing its effectiveness.

SUPREME COURT GUIDELINES ON CUSTODIAL SAFEGUARDS:

- **D.K. Basu vs State of West Bengal (1997)**
  - Landmark ruling laying down 11 mandatory guidelines to prevent custodial torture.
  - Key mandates:
    - Arresting officer must wear identification badges.
    - Family of the arrested person must be informed immediately.
    - Medical examination of detainees must be conducted every 48 hours.
- **Common Cause v. Union of India (2018)**
  - Mandated CCTV installation in all police stations & interrogation rooms.
  - Real-time video recording required to prevent custodial abuse.
  - Despite this ruling, many states have failed to implement full compliance.

WAY FORWARD:

- **Implement important Supreme Court directives in Prakash Singh case (2006):**
  - Constitute a **State Security Commission** in every state that will lay down policy for police functioning, evaluate police performance etc.
  - Constitute **Police Complaints Authorities** at the state and district levels to inquire into allegations of serious misconduct and abuse of power by police personnel.
  - **Separate the investigating police from the law and order police** to ensure speedier investigation, better expertise and improved rapport with the people.

- **Enactment of a Standalone Anti-Torture Law:**
  - India must **enact a Prevention of Torture Act**, as recommended by the **Law Commission's 273rd Report (2017)**, to criminalize custodial torture explicitly.
  - This law should align with **UNCAT** and impose **strict penalties for public servants involved in custodial torture**.

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- **Ratification of UNCAT & Compliance with International Standards:**
  - **India must ratify the UN Convention Against Torture (UNCAT)** to strengthen its human rights record and facilitate extraditions.
  - **Adopt global best practices** from countries like **UK's Independent Office for Police Conduct (IOPC)** and **Norway's Ombudsman Model**, which ensure **independent oversight and strict accountability**.
- **Capacity building:**
  - The police force must also be provided with **mandatory basic forensic and psychology training and periodic workshops** to sharpen their abilities.
  - Also, Padmanabhaiah Committee on police reforms had recommended the police force should **receive greater training in soft skills** such as communication, counselling and leadership to deal with the public.
- **Strong action against police brutality**:
  - Extra judicial executions are an anathema to the Rule of Law. Hence, fair investigations and stringent legal actions must be taken against all cases of extra judicial killings in the country.
- **Infusion of technology:**
  - Technology must be leveraged wherever possible to improve the reporting of cases, quality of investigation and conviction for offences.
- **Judicial reforms:**
  - Proactive measures must be taken to reduce the vacancies in judicial posts, improve accessibility and reduce the delays in justice.
- **Prison reform:**
  - The government should look at the recommendations made by **Mulla committee and Amitava Roy committee** and ensure humane conditions in the prisons.

CONCLUSION:

- Custodial torture strikes at the heart of constitutional democracy by violating dignity, liberty, and the rule of law. Preventing it requires not only stricter laws and accountability mechanisms, but also deeper police, prison, and judicial reforms so that justice in India is secured through evidence and due process, not violence.

PRACTICE QUESTION

Q. "Custodial violence continues to persist in India despite constitutional safeguards, judicial guidelines, and statutory protections." Discuss the major reasons for its persistence. (10 marks, 150 words)

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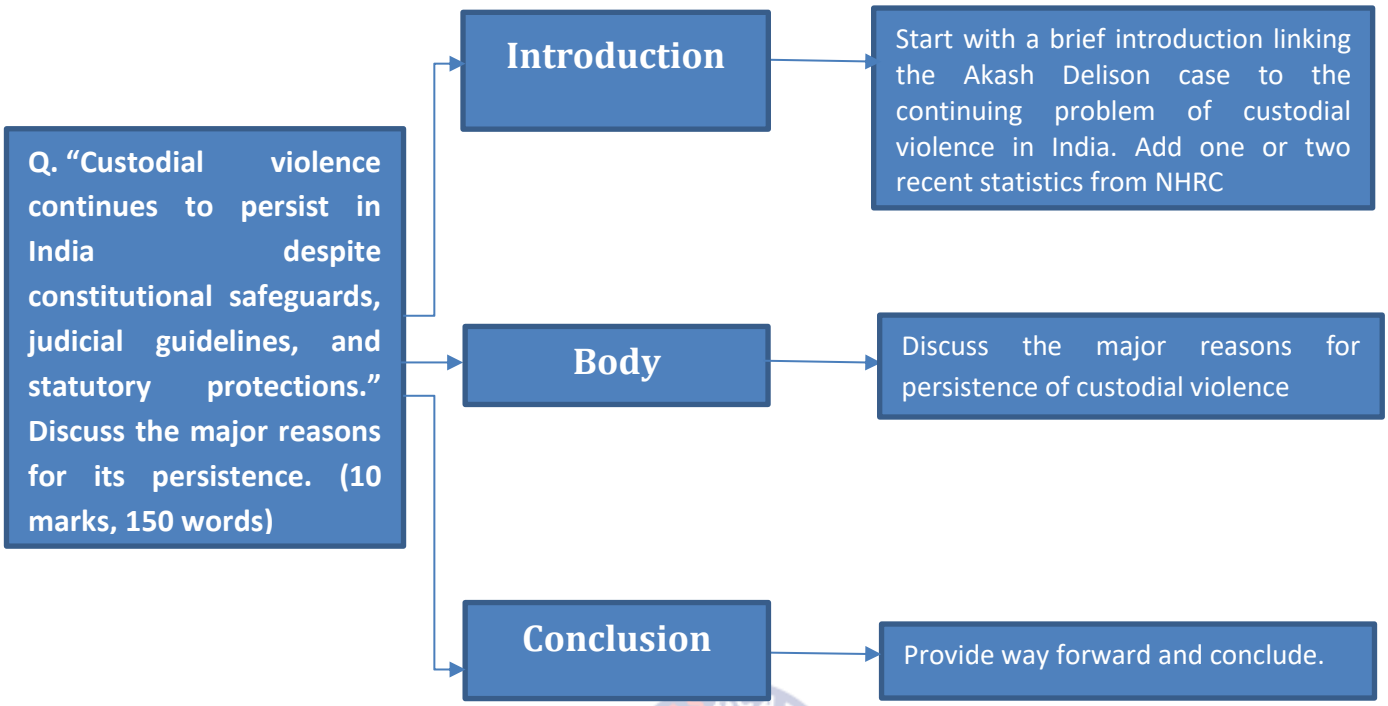

MODEL ANSWER

Custodial violence continues to persist in India despite constitutional and legal safeguards, as seen in the recent case of Akash Delison in Tamil Nadu, where allegations of torture contradicted the police version of events. The persistence of such incidents is reflected in data, with **160 police custody deaths and 2,346 judicial custody deaths reported to NHRC in 2023–24**, indicating that custodial abuse remains systemic rather than incidental.

Major Reasons for Persistence of Custodial Violence:

1. Weak Investigation Capacity:

- Lack of forensic tools and scientific training leads to reliance on coercion.
- Confession-driven policing incentivizes "third-degree" methods over evidence-based investigation.

2. Judicial Delays and Pressure for Quick Results:

- Over **5 crore pending cases** create pressure to solve cases quickly.
- Police resort to shortcuts like torture to secure faster confessions.

3. Absence of a Standalone Anti-Torture Law:

- No explicit law criminalizing torture despite Law Commission recommendations.
- Legal ambiguity reduces deterrence and accountability.

4. Institutional and Structural Issues in Policing:

- Long working hours (14 hours/day on average) cause stress and burnout.
- Lack of separation between law & order and investigation functions reduces professionalism.

5. Weak Accountability Mechanisms:

- Police often investigate themselves, leading to bias and impunity.
- NHRC has **non-binding, recommendatory powers**, limiting enforcement.

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6. Poor Evidence and Monitoring Systems:

- Inadequate CCTV coverage despite Supreme Court mandates.
- Custodial deaths often misreported as suicides or accidents.
- Pre-arrest torture goes undocumented.

7. Social Acceptance and Political Pressure:

- Public tolerance for "tough policing" encourages excesses.
- Media glorification of encounters normalizes brutality.

8. Structural Discrimination and Vulnerability:

- Dalits, minorities, migrants, and marginalized groups are disproportionately targeted.
- Social bias increases vulnerability during custody.

9. Non-Ratification of UNCAT:

- Weakens international accountability and delays legal reforms.
- Affects extradition and global credibility.

Way Forward:

- **Enact a Comprehensive Anti-Torture Law:** Criminalize custodial torture explicitly with strict penalties. Align domestic law with UNCAT standards.
- **Strengthen Accountability Mechanisms:** Establish independent Police Complaints Authorities.Ensure time-bound judicial inquiries under BNSS provisions.
- **Implement Police Reforms (Prakash Singh Case):** Separate investigation from law & order. Create State Security Commissions for oversight.
- **Improve Technology and Forensic Capacity:** Ensure functional CCTV systems and video-recorded interrogations. Strengthen forensic infrastructure to reduce reliance on confessions.
- **Capacity Building and Sensitization:** Training in human rights, forensic methods, and soft skills. Address police workload and mental health issues.
- **Judicial and Prison Reforms:** Reduce case pendency and ensure speedy trials. Improve prison conditions and reduce overcrowding.

Custodial violence persists due to structural weaknesses in policing, accountability gaps, and societal tolerance of coercive methods. Addressing it requires a shift towards **rights-based, evidence-driven policing and strong institutional reforms** to uphold the **rule of law and constitutional values.**

11. PRISON REFORMS IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Governance

REFERENCE NEWS:

A recent outbreak in **Jalpaiguri Central Correctional Home (West Bengal)** saw **92 inmates infected with herpes simplex virus (HSV)** and **7 deaths**, worsened by a **171% occupancy rate**.

HEALTH CRISIS IN INDIA'S PRISONS:

India's prisons face a **serious public health crisis**, primarily due to **overcrowding, poor infrastructure, and inadequate medical care**.

- Overcrowding is widespread: prisons in West Bengal exceed **160% capacity**, with some reaching **400%**.
- Poor hygiene and lack of space contribute to diseases:
  - **Skin infections** (30% inmates in Kerala prisons)
  - **Tuberculosis** (5 times higher prevalence than general population)
  - **COVID-19 outbreaks** in prisons like Nagpur and Indore
  - Higher **HIV prevalence** due to inadequate screening

Systemic gaps:

- **43% vacancy of medical officers**
- Only **25 psychologists for 5.7 lakh inmates**
- Inmates per doctor are **2.6 times higher than recommended**

PRISON SYSTEM IN INDIA:

India's prison system reflects a **colonial legacy transitioning towards a reformative model**, yet continues to face structural and humanitarian challenges.

- Prisons are institutions where individuals are **deprived of liberty as punishment or during trial**. Modern penology emphasises **"custody, care, and correction"** rather than mere punishment. However, in practice, Indian prisons still remain **largely punitive rather than reformative**.
- **Evolution of Prison System in India:**
  - **Ancient and medieval India:** Prisons were **harsh, deterrent, and punitive**, involving torture and inhuman punishments.
  - British period: **Deterrence and control**, not reform.
    - **Macaulay Committee (1835)**: laid foundation of modern prison system
    - **Prison Discipline Committee (1836)**: emphasised strict discipline
    - **Prisons Act, 1894**: first comprehensive prison law
- **Post-Independence Era:** Shift towards **rehabilitation and human rights**:
  - **All India Jail Manual Committee (1957–60)**: uniform prison policies
  - **Mulla Committee (1980–83)**: modernization, rehabilitation focus

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- **Krishna Iyer Committee (1987)**: focus on women prisoners
- Recent reforms: **Model Prison Manual 2016, Model Prisons Act 2023**

- **Constitutional Framework**
  - **Article 21**: Right to life, dignity, protection from torture
  - **Article 22**: Safeguards against arbitrary arrest
  - **Article 39A**: Free legal aid
- **Key Laws Governing Prisons**
  - **Prisons Act, 1894**: Core legislation (custody & discipline oriented)
  - **Prisoners Act, 1900**
  - **Identification of Prisoners Act, 1920**
  - **Transfer of Prisoners Act, 1950**
  - **CrPC, 1973**
  - **Probation of Offenders Act, 1958**
- **Judicial Oversight:** Courts play a major role through PILs and judgments:
  - **Sunil Batra case (1978)**: protection from inhuman treatment
  - **Hussainara Khatoon case**: right to speedy trial
  - **D.K. Basu case (1997)**: safeguards against custodial abuse
- **International Framework:** India aligns with **UDHR (1948), ICCPR, UN Standard Minimum Rules (Nelson Mandela Rules).** These emphasize **humane treatment and dignity of prisoners**.
- **"Prisons" is a State subject** (7th Schedule). States manage prisons, leading to **lack of uniformity.**
- **Composition of Prison Population:** Around **75%+ prisoners are undertrials** (systemic judicial delay). Majority are from **economically weaker sections**

CHALLENGES FACED BY INDIAN PRISONS:

- **Chronic Overcrowding:** Prisons operate at **~131% occupancy (NCRB 2022)**. Some states exceed **180% (Delhi, UP, Uttarakhand)**. Leads to poor hygiene, spread of diseases, increased violence and stress.
  - Jalpaiguri jail (West Bengal) had **171% occupancy**, contributing to a **herpes virus outbreak causing deaths**.
- **Undertrial Crisis and Judicial Delays: ~75.8% of prisoners are undertrials** (Prison Statistics India 2022). Many remain jailed **longer than the maximum sentence** for alleged offences.
  - In **Hussainara Khatoon v. State of Bihar**, SC highlighted plight of undertrials and right to speedy trial. Prisons function as **"pre-trial detention centres" rather than correctional institutions**.
- **Poor Health Infrastructure and Disease Burden:** Prisoners are **5 times more likely to get TB** (Lancet study). High prevalence of **HIV and skin diseases being reported.**
  - Kerala prisons: **30% inmates with skin diseases**
  - COVID outbreaks in **Nagpur & Indore jails**
  - Severe shortage: **43% vacancy of medical officers.** Only **25 psychologists for 5.7 lakh inmates**

- **Custodial Violence and Human Rights Violations: 1,850+ custodial deaths (2020–21, NHRC)**. Includes torture, abuse, encounter killings.
    - **Sathankulam custodial deaths (Tamil Nadu) exposed** police brutality.
- **Inadequate Infrastructure and Living Conditions:** Old prisons based on **Prisons Act, 1894** (colonial design). Issues include poor ventilation, lack of sanitation and inadequate food thereby violating **Article 21 (right to dignity)**.
- **Mental Health Crisis and Lack of Rehabilitation: 21–33% prisoners suffer mental illness** (various studies). Causes are isolation, stigma, overcrowding and lack of counselling.
    - **Machang Lalung:** detained **54 years as undertrial due to mental illness** is example of **systemic neglect and judicial failure**
- **Neglect of Vulnerable Groups: Prisoners with Disabilities l**ack of accessibility (ramps, toilets, wheelchairs). 2018 audit (Delhi prisons) reports **basic facilities absence. 76% women inmates are undertrials** where they face issues sexual abuse risks, lack of female staff and poor prenatal care. Children living with mothers lack proper nutrition, education and better development environment.
- **Caste-Based and Social Discrimination:** Marginalised groups face segregation, discriminatory treatment. **Recent SC observation said** caste-based segregation in prisons is **unconstitutional**, yet persists in practice.
- **Criminalisation Effect ("University of Crime"):** Mixing of first-time offenders and hardened criminals, leads to **recidivism and criminal networking.**
- **Corruption, Extortion, and Drug Abuse:** Prison staff often engage in bribery for privileges and smuggling contraband. Drug abuse is prevalent due to stress and isolation and weak monitoring.
- **Lack of Uniform Policy (Federal Issue):** Prisons are a **State subject** leads to uneven implementation of reforms and lack of accountability.
- **Weak Rehabilitation and Reintegration:** Limited skill training, employment linkages and high **recidivism risk.** System remains **punitive rather than reformative**, despite policy intent.

PRISON REFORMS SUGGESTED IN INDIA:

- **Mulla Committee (1980–83):**
    - Establish **National Prison Commission.**
    - Create **Indian Prisons & Correctional Service (IPCS).**
    - Separate **undertrials from convicts.**
    - Improve food, sanitation, medical care
    - Focus on **rehabilitation and after-care programmes**
    - Encourage **community participation & transparency**
- **Krishna Iyer Committee (1987) – Women Prisoners**
    - Increase **women staff in prisons**
    - Ensure **gender-sensitive infrastructure**
    - Provide childcare facilities
    - Protection from abuse
- **All India Jail Manual Committee (1957–60):** Introduced **Model Prison Manual.** Recommended uniform prison administration, vocational training and classification of prisoners.

- **Justice Amitava Roy Committee (2018):** Address **overcrowding.** Recommended **speedy trial mechanisms, video conferencing in courts.** Legal aid of **1 lawyer per 30 prisoners.**
- **Law Commission (268th Report)**: Bail reforms. Reduce undertrial detention.
- **BPR&D Model Prison Manual (2016)**: Focus on rehabilitation, legal aid, mental health care**.**
- **Fundamental Rights of Prisoners:**
    - **Sunil Batra v. Delhi Administration (1978)**: Protection from torture; prisoners retain fundamental rights
    - **Charles Sobhraj v. Superintendent, Central Jail**: No arbitrary restrictions beyond lawful imprisonment
    - **Hussainara Khatoon v. State of Bihar (1979)**: Right to speedy trial under Article 21
    - **D.K. Basu v. State of West Bengal (1997)**: Guidelines to prevent custodial torture
    - **Rama Murthy v. State of Karnataka (1997)**: Identified key issues of overcrowding, delay in trial, poor hygiene and violence.
    - **R. Rajagopal v. State of Tamil Nadu (Auto Shankar case)**: Recognised privacy as part of Article 21
    - **Jasvir Singh v. State of Punjab (2015, Punjab & Haryana HC)**: Recognised **conjugal visits as part of right to life and dignity**
    - **Sunil Batra (II)**: Emphasised humane treatment and family contact
- **Conjugal Rights:** Allowed in **limited forms** (e.g., Punjab, Haryana open prisons). Not a **nationwide policy yet.** Countries like USA, Canada, Brazil recognise conjugal visits as a reformative tool. Seen as part of **human dignity and rehabilitation framework**
- **Open Prison System (India):** States like **Rajasthan** allow inmates to work and live with families. Benefits include reduced overcrowding and promotes reintegration
- **Technology Integration: e-Prisons Project,** digital records, case tracking, **video conferencing** reduces delays and costs
- **Rehabilitation-Oriented Models:** Skill training (carpentry, weaving, etc.), education programmes, prison industries.
- **Mental Health and Wellness:** Counselling services and meditation programmes (e.g., **Vipassana in Tihar Jail**)
- **Alternatives to Imprisonment:** Probation, parole and furlough, community service, reduces overcrowding and promotes restorative justice.
- **International Best Practices**
    - **Norway Model**: Focus on dignity, minimal security, rehabilitation
    - **UN Nelson Mandela Rules**: Humane conditions, no torture and access to healthcare
- **Emerging Reform Areas: Decriminalisation of minor offences, bail reforms, integration with National Health Mission, independent Prison Ombudsman, use of AI & data systems for case monitoring.**

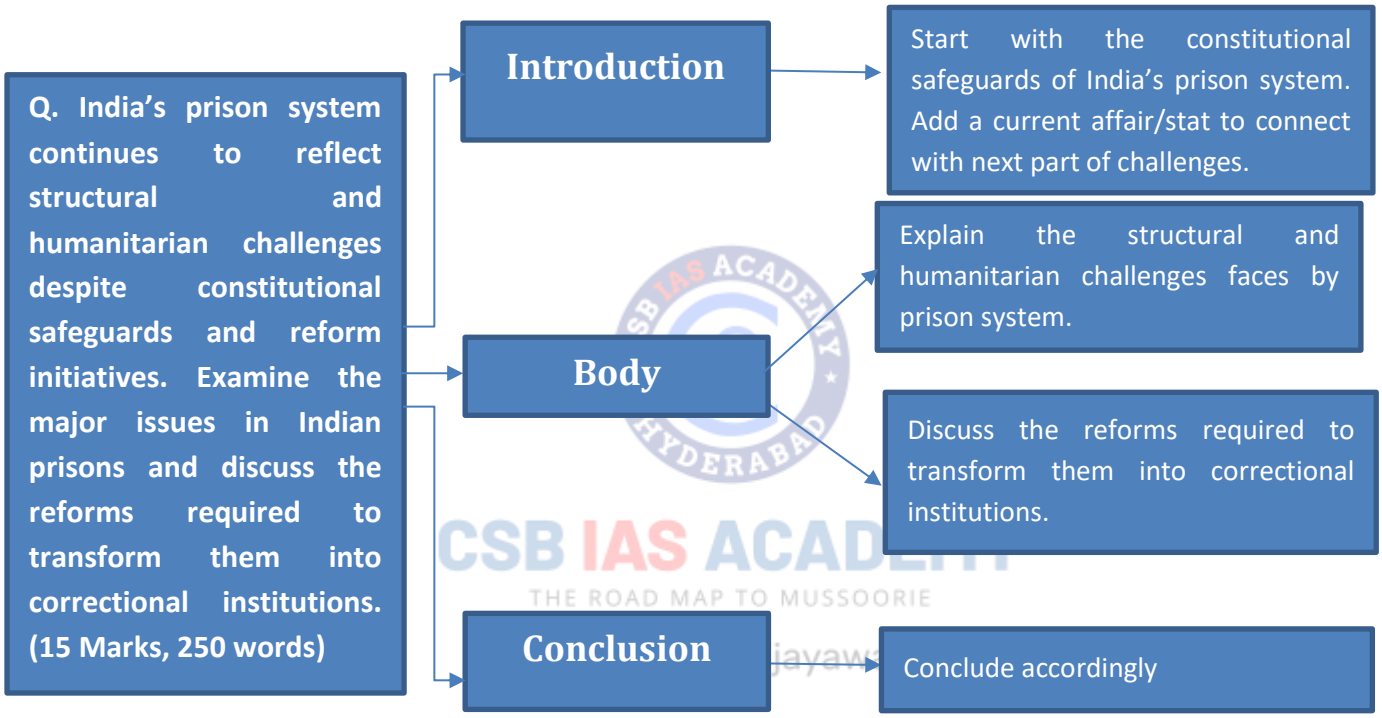
Prison reforms in India reflect a **progressive shift toward a humane, rights-based, and rehabilitative system**, guided by committees, judiciary, and global norms. Incorporating reforms like **conjugal rights, technological modernization, and alternatives to incarceration**, along with systemic judicial and

administrative changes, is essential to transform prisons into true **correctional institutions aligned with constitutional morality**.

PRACTICE QUESTION

Q. India's prison system continues to reflect structural and humanitarian challenges despite constitutional safeguards and reform initiatives. Examine the major issues in Indian prisons and discuss the reforms required to transform them into correctional institutions. (15 Marks, 250 words)

APPROACH



MODEL ANSWER

The Indian prison system is anchored in constitutional safeguards such as **Article 21 (right to life and dignity), Article 22 (protection against arbitrary arrest)** and **Article 39A (free legal aid)**, ensuring humane treatment of prisoners. The judiciary has consistently upheld that prisoners do not forfeit their fundamental rights (*Sunil Batra case*). However, recent incidents like the **Jalpaiguri jail outbreak (2025), where 92 inmates were infected and 7 died amid 171% overcrowding**, highlight systemic failures.

Structural Challenges

- **Overcrowding:** Prisons operate at ~131% capacity (NCRB 2022), with some states exceeding 180%.
- **Undertrial Crisis:** Around **75.8% inmates are undertrials**, reflecting judicial delays.
- **Outdated Legal Framework:** Reliance on colonial-era **Prisons Act, 1894** limits reformative focus.
- **Federal Fragmentation:** Prisons being a State subject leads to **lack of uniform standards**.
- **Staff Shortages:** Severe vacancies (e.g., **43% medical officer shortage**) affect administration.

Humanitarian Challenges

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- **Poor Health Conditions:** Prisoners are **5 times more prone to TB**; high prevalence of HIV and skin diseases
- **Custodial Violence:** Over **1,850 custodial deaths (NHRC)** indicate abuse and impunity.
- **Mental Health Crisis:** 21–33% inmates suffer mental illness; lack of counselling facilities.
- **Neglect of Vulnerable Groups:** Women, disabled prisoners face discrimination, poor facilities.
- **Criminalisation Effect:** Mixing first-time offenders with hardened criminals increases recidivism.

Reforms Required

1. **Decongestion of Prisons:**
   - Bail reforms, non-custodial sentencing (Law Commission)
   - Expansion of probation, parole, and community service
2. **Judicial and Legal Reforms:**
   - Fast-track courts, use of video conferencing
   - Effective legal aid (Amitava Roy Committee)
3. **Institutional Reforms:**
   - Establish **Indian Prisons & Correctional Service (IPCS)** (Mulla Committee)
   - Create National Prison Commission
4. **Modernisation of Infrastructure:**
   - Replace colonial laws with **Model Prisons Act, 2023**
   - Improve sanitation, ventilation, healthcare
5. **Human Rights and Accountability:**
   - Implement SC guidelines (*D.K. Basu*, *Rama Murthy*)
   - Independent prison oversight mechanisms
6. **Rehabilitation and Reintegration:**
   - Skill development, education, prison industries
   - Open prison systems (e.g., Rajasthan model)
7. **Technology and Innovation:**
   - e-Prisons system, telemedicine, AI-based case tracking
   - Consider reforms like **conjugal visits** (recognised in *Jasvir Singh case*) to preserve family ties

India's prison system reflects a gap between **constitutional ideals and ground realities**. Transforming prisons into **correctional institutions** requires a shift from a punitive to a **rehabilitative, rights-based, and technology-enabled approach**, ensuring dignity, justice, and reintegration of prisoners into society.

12. SCHEDULED CASTES IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social Justice

REFERENCE NEWS:

The **Supreme Court** ruled that **only persons professing Hinduism, Buddhism, or Sikhism** can claim **Scheduled Caste (SC) status**.

The Supreme Court of India in **Chinthada Anand v. State of Andhra Pradesh (2026) ruled** that a person professing any religion other than Hinduism, Buddhism, or Sikhism cannot be recognised as a member of a Scheduled Caste (SC) community.

- Invoking **Clause 3 of the Constitution (Scheduled Castes) Order, 1950**, the Court held that Conversion to any other religion (e.g., Christianity, Islam) leads to **immediate and complete loss of SC status**, irrespective of birth.
- The Court clarified the meaning of **"profess"**:
  - It implies **public declaration and practice of a religion**, not merely private belief.
  - A person cannot simultaneously follow another religion and claim SC benefits.
- **Case context**: A person born in an SC community (Madiga) who converted to Christianity and became a pastor **lost eligibility** to claim protection under the **SC/ST (Prevention of Atrocities) Act, 1989**.
- The Court reaffirmed:
  - The exclusion under Clause 3 is **absolute and admits no exceptions**.
  - Christianity does not recognise caste, supporting the rationale behind exclusion.

Reconversion Criteria (Strict Conditions)

To regain SC status after reconversion to Hinduism/Sikhism/Buddhism, a person must prove:

- Original caste identity
- Genuine reconversion
- Acceptance by the original caste community
- Actual adoption of customs and practices

Failure in any condition → claim invalid.

On Scheduled Tribes (STs)

- Unlike SCs, **no religion-based restriction** exists under the **Constitution (Scheduled Tribes) Order, 1950**.
- However, **tribal identity must be retained in substance.** Loss of customs and assimilation into another religion may lead to **loss of ST status**, subject to factual determination.

Core Principle

- **SC status is linked to the Hindu caste system**, and therefore **not extendable to**

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religions that do not recognise caste.
- Religious identity and caste-based benefits are **legally mutually exclusive** under the current constitutional framework.

SCHEDULED CASTES IN INDIA:

- **Scheduled Castes (SCs)** are communities that have historically suffered from **untouchability, social exclusion, and extreme discrimination** within the traditional caste system.
- The term originates from **Government of India Act, 1935**, where such communities were listed ("scheduled").
- Post-independence, the Constitution institutionalised **protective discrimination (affirmative action)** for their upliftment.
- **Constitutional Provisions**
  - **Article 341**: Empowers the **President of India** to notify SCs in consultation with Governors. Parliament alone can modify this list.
  - **Article 14**: Equality before law
  - **Article 15(4):** Special provisions for socially and educationally backward classes
  - **Article 16(4)**: Reservation in public employment
  - **Article 17**: Abolition of untouchability
  - **Article 46**: Promotion of SC/ST welfare
- **Constitution (Scheduled Castes) Order, 1950:** Issued under Article 341(1), it specifies SC communities **state-wise** and provides the **legal basis for reservation and protection**.
  - **Religious restriction (Clause 3)**: Initially limited to **Hindus**. Extended to **Sikhs (1956)** and **Buddhists (1990)**. Thus, **SC status is religion-linked**, unlike STs. The Order aims to address **untouchability rooted in the Hindu caste system.**
  - Based on Clause 3 of the 1950 Order SC benefits and religious conversion are **mutually exclusive**.
- **SC status is State/Union Territory-specific, not an absolute national designation:** A community recognized as a Scheduled Caste in one state (e.g., Uttar Pradesh) may be categorized as an Other Backward Class (OBC) or a general category in another state (e.g., Maharashtra). **To claim statutory benefits, a person must belong to a caste that is officially notified in their specific State or UT of origin.**
- As per **Census 2011** SC population **~20.1 crore (16.6%) of India's population**
- **15% reservation** in Government jobs, Educational institutions, Legislature (Lok Sabha & State Assemblies)
- Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989: Criminalises caste-based violence, humiliation, and discrimination
- **Key Supreme Court Cases**
  - **C.M. Arumugam v. S. Rajgopal (1976)**: Recognised caste as social identity; allowed restoration after reconversion (with proof)
  - **Soosai v. Union of India (1985)**: Denied SC status to Dalit Christians citing lack of empirical data

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- **K.P. Manu v. Scrutiny Committee (2015)**: Allowed reconversion-based SC restoration subject to community acceptance

COMMISSIONS REGARDING SC STATUS:

- **Kaka Kalelkar Commission (1955) & Mandal Commission (1980):** Both recognized that caste-based discrimination extended into non-Hindu religions, paving the way for OBC reservations for certain Christian and Muslim communities.
- **Justice Ranganath Mishra Commission (2007):** Recommended that SC status should be completely de-linked from religion and made religion-neutral, like ST status.
- **Justice K.G. Balakrishnan Commission (Current):** In 2022, the Union Government appointed a three-member commission headed by former CJI K.G. Balakrishnan to examine the sensitive issue of granting SC status to new persons who have historically belonged to the **SCs but have converted to religions other than Hinduism, Buddhism, and Sikhism.**

WHY SHOULD THERE BE AN EXTENSION TO SC STATUS?

- **Persistence of Caste Discrimination Beyond Religion:** Conversion does **not erase caste identity in social practice**. Dalit Christians and Muslims continue to face social segregation, endogamy and occupational stigma.
  - Studies (e.g., Sachar Committee, 2008 studies) show existence of **"Dalit Muslims" (Ajlaf/Arzal)** and **"Dalit Christians"** and continued discrimination in housing, marriage, and employment.
  - Empirical evidence contradicts the assumption used in the Constitution (Scheduled Castes) Order, 1950 that caste disappears after conversion.
- **Violation of Equality and Non-Discrimination:** Current framework excludes individuals **only on the basis of religion**, raising constitutional concerns of **Article 14, Article 15** (Prohibits discrimination on religion) and **Article 25**.
  - Denying SC benefits after conversion creates **penalty for exercising religious freedom**, **unequal treatment among similarly placed Dalits**
- **Inconsistency in Affirmative Action Policy:** Other categories are **religion-neutral STs** has no restriction and **OBCs** include Muslim and Christian communities. This creates an **anomaly** that SCs alone are **religion-linked**, despite similar social backwardness.
- **Intersectionality and Double Disadvantage:** Dalit converts face **caste-based discrimination (social reality)** and **loss of state protection (legal exclusion)**. This results in **double marginalisation**, worsening vulnerability.
- **Recommendations of Expert Bodies**
  - **Ranganath Mishra Commission (2007)** recommended **complete delinking of SC status from religion**. Found dalit converts remain **socially and economically backward**.
  - **K.G. Balakrishnan Commission (2022):** Currently examining whether SC status should be extended to Dalit converts. Indicates issue has **policy relevance and unresolved injustice**.

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- **Ethical and Social Justice Argument:** SC category is meant to address **historical oppression and untouchability**. If such discrimination persists **denial of benefits becomes unjustified**. Focus should shift from **Religion-based criteria to Deprivation-based criteria**.
- **Judicial Recognition of Social Reality (Partial):**
  - **Soosai v. Union of India (1985)**: Court acknowledged need for **empirical evidence** on discrimination among converts.
  - Even recent cases show victims may still be targeted based on caste identity despite conversion
- **International Human Rights Perspective:** Global norms emphasise **substantive equality** (outcomes, not just formal classification). Religion-based exclusion is seen as **indirect discrimination**.

POSITIVES OF THE SUPREME COURT RULING:

- **Upholds Constitutional and Legal Clarity:** The ruling strictly follows **Constitution (Scheduled Castes) Order, 1950 (Clause 3)**, SC status limited to Hindus, Sikhs, Buddhists. Ensures **certainty and uniformity in law**, prevents arbitrary interpretation by authorities. Court termed the restriction **"categorical and absolute"**, reinforcing legal consistency.
- **Preserves the Original Purpose of SC Category:** SC classification was designed to address **untouchability within the Hindu social order**. By restricting SC status the Court preserves the **historical rationale of affirmative action** and prevents **dilution of a category meant for specific historical injustice.**
- **Prevents Misuse and Fraudulent Claims:** Without restriction individuals could convert but still claim SC benefits, create **identity manipulation for reservation benefits**. The ruling ensures **clear eligibility criteria** and reduced scope for **fraud on the Constitution**.
- **Protects Limited Reservation Resources:** SC quota (~15%) is **finite and constitutionally fixed**. Extending eligibility could overburden the quota and reduce opportunities for existing SC communities. The ruling safeguards **equitable distribution within the intended beneficiary group**.
- **Reinforces Doctrine of Mutual Exclusivity:** Court clarified one cannot **profess a non-recognised religion and claim SC benefits simultaneously**. This avoids **contradictory legal positions** and policy incoherence. It provides a **clear doctrinal principle** for future cases.
- **Maintains Administrative Simplicity:** Religion-based classification is easier to verify (documents, public practice). If extended determining caste among converts would be **complex and litigation-heavy**
- **Differentiates SC and ST Logically:**
  - SC is based on **caste (linked to religion)**
  - ST is based on **tribal identity (culture-based)**

WAY FORWARD:

- **Evidence-Based Policy Reform:** Decisions should be guided by **empirical data on caste discrimination among converts**, not assumptions. The findings of the **K.G. Balakrishnan Commission (2022)** must be made public andused as the basis for legislative action.

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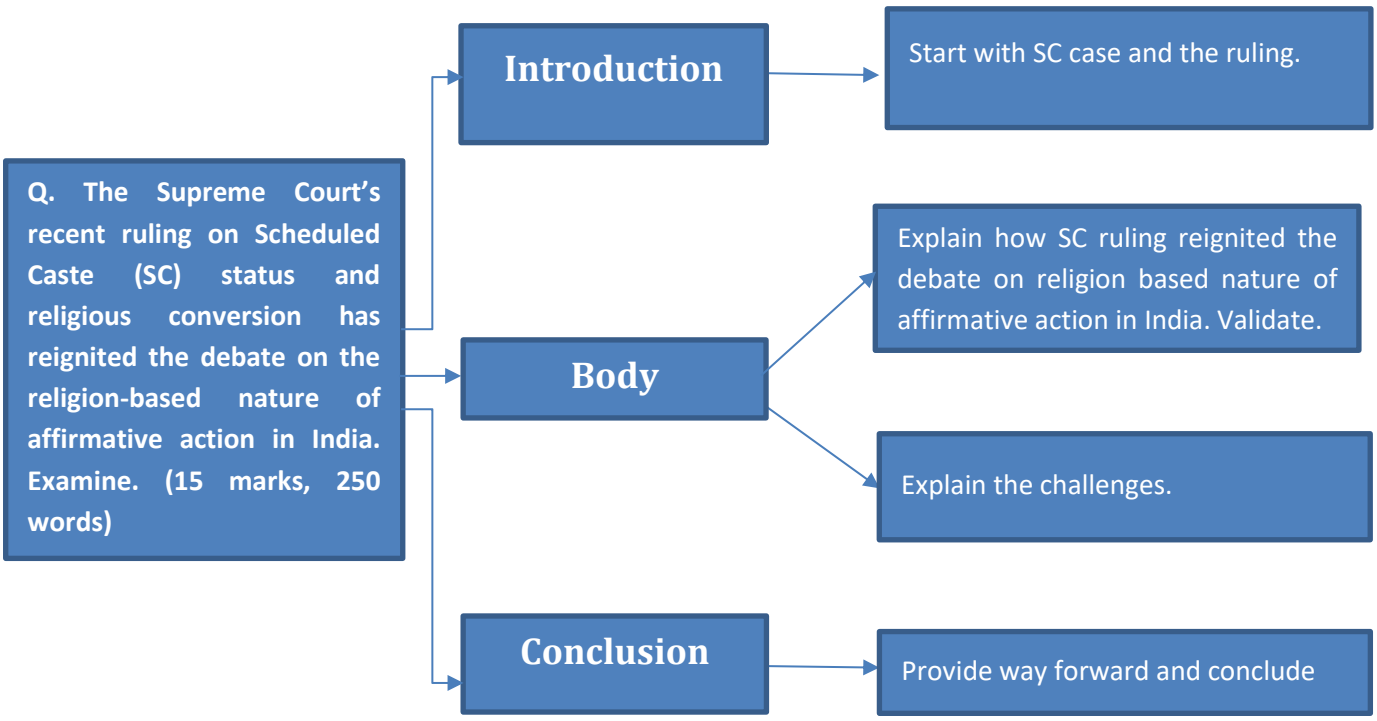
- **Revisit the Religion-Based Criterion:** Parliament may consider amending the **Constitution (Scheduled Castes) Order, 1950**. Shift towards **deprivation-based or discrimination-based criteria** instead of religion.
- **Adopt a Graduated or Layered Approach:** Instead of immediate blanket inclusion, identify **most disadvantaged sub-groups among converts**. Provide targeted reservations and sub-quotas or separate categories.
- **Strengthen Anti-Discrimination Framework:** Expand legal protection beyond SC category, introduce a **comprehensive anti-discrimination law** covering caste across religions. Ensure protection even if SC status is denied.
- **Improve Identification Mechanisms:** Develop **clear criteria and documentation standards** to identify caste-origin among converts. Use socio-economic surveys and community validation processes.
- **Judicial–Legislative Balance:** Courts should continue interpreting existing law strictly. Parliament should take proactive role in reform.
- **Awareness and Social Reform:** Address root cause of **caste discrimination itself**. Promote social reform movements and inter-caste integration.
- **Protect Existing Beneficiaries:** Any reform must ensure existing SC communities are **not deprived of opportunities**. Consider expanding total reservation pool (if needed) with constitutional safeguards.

PRACTICE QUESTION

Q. The Supreme Court's recent ruling on Scheduled Caste (SC) status and religious conversion has reignited the debate on the religion-based nature of affirmative action in India. Examine. (15 marks, 250 words)

APPROACH



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MODEL ANSWER

The Supreme Court in *Chinthada Anand v. State of Andhra Pradesh (2026)* ruled that only persons professing Hinduism, Sikhism, or Buddhism can claim Scheduled Caste (SC) status. Invoking Clause 3 of the Constitution (Scheduled Castes) Order, 1950, the Court held that conversion to other religions results in the **immediate and complete loss of SC status**, reaffirming the religion-linked nature of SC classification.

How the Ruling Reignited the Debate on Religion-Based Affirmative Action

1. **Persistence of caste beyond religion**: Empirical studies (e.g., Sachar Committee) show caste-based discrimination continues among Dalit Christians and Muslims. Challenges the assumption that caste disappears after conversion.
2. **Constitutional concerns of equality**: Exclusion based on religion raises issues under **Articles 14, 15, and 25**. Appears as a penalty on exercising religious freedom.
3. **Inconsistency in affirmative action framework**
    - SC → religion-based
    - ST/OBC → religion-neutral
    - Creates policy inconsistency.
4. **Double disadvantage to converts**: Social stigma persists + loss of legal protection (e.g., SC/ST Act).
5. **Recommendations of expert bodies**: **Ranganath Mishra Commission (2007)** recommended delinking SC status from religion.
6. **Ongoing policy reconsideration**: **K.G. Balakrishnan Commission (2022)** examining extension of SC status to converts.
7. **Judicial–social gap**: Court adopts formal legal reasoning, while social reality reflects continuing caste discrimination.

Challenges

1. **Dilution of SC quota**: Inclusion of diverse religion may strain the limited 15% reservation pool.
2. **Conceptual issue**: SC category is historically linked to **untouchability in Hindu social order**.
3. **Administrative difficulties**: Identifying caste among converts is complex and litigation-prone.
4. **Possibility of misuse**: Risk of fraudulent claims for reservation benefits.
5. **Theological argument**: Religions like Christianity and Islam do not formally recognise caste.

Way Forward

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- **Evidence-based reform** using findings of the Balakrishnan Commission
- **Revisit Clause 3** to explore deprivation-based rather than religion-based criteria
- **Targeted or sub-quota approach** for most vulnerable groups
- **Strengthen anti-discrimination laws** across religions
- **Protect existing SC beneficiaries** from dilution

The ruling reaffirms constitutional legality but highlights the tension between **legal formalism and social reality**. A balanced, data-driven approach is essential to ensure that affirmative action remains **both constitutionally sound and socially just**.

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13. SOCIAL MEDIA BAN FOR CHILDREN

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social justice > Women and Child issues

REFERENCE NEWS:

- **Karnataka** has announced a ban on social media use by **children under 16** in its latest budget, and **Andhra Pradesh** is moving to introduce a measure that would prohibit those **under 13** from using such services, a signal of the growing momentum in India to protect children from the various harms that social media platforms can cause.

MORE ON NEWS:

- Calls for banning social media use for children are gaining traction across the world, with the precedent set by a **landmark Australian legislation** that went into effect last year (2025).
- During his keynote address at the **India-AI Impact Summit** last month (February), French **President Emmanuel Macron** called on India to **consider banning social media for children.**
- Recently, IT Minister Ashwini Vaishnaw had said the **Centre was discussing age-based restrictions with social media companies.**
- Earlier this year, **the Economic Survey 2025-26** also called on the government to implement **age-based limits** for social media usage for children and digital ads targeted at them. The Survey's recommendation stemmed from larger concerns surrounding **"digital addiction" among young users.**

STATS:

- Among adolescent smartphone users, **78.8% of boys** and **73.4% of girls** reported **using smartphones for social media.** *(Source: ASER 2024)*
- **94.3% of persons aged 15–29** in India had used the internet in the last three months; **73.4%** owned a mobile phone. (Source: MOSPI – Comprehensive Modular Survey: Telecom, 2025)
- The **Economic Survey 2025–26** flagged **digital addiction / compulsive digital use among youth** as a growing concern and suggested considering **age-based access limits**, **age verification**, and **age-appropriate defaults** to protect children online.
- **Cyber crimes against children** increased sharply from **232 cases in 2018** to **1,823 cases in 2022** in India. (Source: NCRB)
- **82.2% of children aged 14–16** reported that they know how to use a smartphone. (Source: ASER 2024)
- Among **14–16-year-olds who know how to use a smartphone**, **76% used it for social media**, while **57% used it for educational activities** in the previous week. *(Source: ASER 2024)*
- Smartphone ownership among adolescents shows a **gender gap**: **36.2% of boys** versus **26.9% of girls** personally owned a smartphone. *(Source: ASER 2024)*

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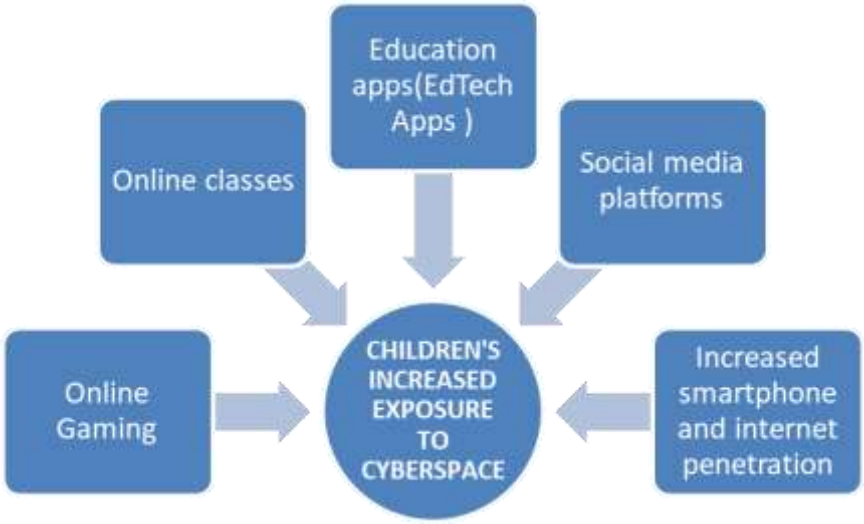

WHY A SOCIAL MEDIA BAN FOR CHILDREN IS BEING PROPOSED

- **Rising digital addiction among youth**:
  - Increasingly immersive platform design encourages **compulsive scrolling and prolonged engagement**, which can negatively affect mental health and productivity among young users.
  - For example, the **Economic Survey 2025–26** flagged **digital addiction and compulsive digital use among youth** as a growing concern and suggested exploring **age-based access limits and safer online defaults** for children.
- **High exposure of adolescents to the digital ecosystem**:
  - The sheer scale of youth participation in cyberspace raises concerns about unregulated exposure to harmful content.
  - For example, **94.3% of persons aged 15–29 in India had used the internet in the last three months**, and **73.4% owned a mobile phone**, indicating that children are increasingly entering the digital ecosystem at an early age.
- **Dominance of social media over educational use**:
  - Evidence suggests that digital devices among adolescents are used more for entertainment and social media rather than learning.
  - For example, **76% of adolescents aged 14–16 who can use smartphones reported using them for social media**, compared to **57% who used them for educational purposes** *(ASER 2024)*. This indicates that digital access may be **diverting time away from academic activities.**
- **Early and widespread smartphone literacy among adolescents**:
  - Children are entering the digital ecosystem at increasingly younger ages, often without adequate digital literacy or supervision.
  - For example, **82.2% of children aged 14–16 reported that they know how to use a smartphone**, suggesting that adolescents have near-universal access to online spaces *(ASER 2024)*.
- **Exposure to cyberbullying, exploitation, and harmful content**:

- Online spaces expose children to risks such as cyberbullying, grooming, and exposure to inappropriate material.
- For example, **cyber crimes against children increased from 232 cases in 2018 to 1,823 cases in 2022**, reflecting a sharp rise in digital vulnerabilities among minors *(NCRB)*.

- **Addictive platform design and algorithmic amplification**:
  - Social media platforms are designed to **maximise engagement through algorithms** that push **emotionally stimulating or sensational content**. Governments argue that children may lack the cognitive maturity to deal with such algorithm-driven content ecosystems.
  - For example, the **Australian Online Safety Amendment Act** requires platforms to deactivate accounts of users under 16 and prevent workarounds that allow minors to bypass restrictions.
- **Growing international regulatory trend**:
  - The push to regulate children's social media use is part of a broader global policy shift toward stronger digital child protection. For example, **Australia became the first country to enforce a minimum age of 16 for social media use**, requiring platforms like Instagram and YouTube to block underage accounts. Similarly, **France has proposed banning social media for children under 15**, with several European countries considering similar measures.
- **Protection from manipulative advertising and commercial targeting**:
  - Children are especially vulnerable to **targeted advertising and algorithmic nudging**, which may promote unhealthy consumption patterns.
  - For example, the **Economic Survey 2025–26 recommended restricting targeted digital advertisements aimed at children**, highlighting the need to shield minors from manipulative digital marketing practices.

- **Preserving childhood and reducing excessive screen time**;
  - Excessive screen time **can affect sleep, physical health, and real-world social interaction among children.** Governments therefore argue that limiting access during formative years may help ensure healthier cognitive and behavioural development.
  - For example, **Economic Survey 2025–26** suggested promoting **basic phones or education-only devices for children**, along with stronger parental controls.

CHALLENGES AND CONCERNS ASSOCIATED WITH A SOCIAL MEDIA BAN FOR CHILDREN:

- **Operational and technical challenges in enforcement**:
  - Implementing age-based bans on social media platforms is technically difficult because digital networks **operate beyond geographical and administrative boundaries.**
  - For example, tech executives have noted that **state-level bans such as Karnataka's proposal to restrict social media for those under 16 may be difficult to enforce**, since platforms operate nationally and globally, making **geo-restrictions at the state level difficult to implement.**
- **Regulatory fragmentation across states**:

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- If **different states adopt different age** thresholds, it may lead to inconsistent regulatory frameworks and enforcement confusion.
- For example, **Karnataka has proposed a ban for users under 16, while Andhra Pradesh is considering restrictions for those under 13**, creating definitional inconsistencies about who qualifies as a child.

- **Possibility of easy circumvention by minors**:
  - Age-based restrictions can often be bypassed through **fake accounts or by using a parent's identity.**
  - For example, many social media platforms currently rely on **self-declared age verification**, which allows minors to create accounts by simply **entering a false date of birth.**
- **Migration to unsafe or unregulated platforms**:
  - A blanket ban on mainstream platforms may push children **toward less regulated digital spaces** where safeguards are weaker.
  - For example, **Meta** has warned that banning access to regulated platforms may push teenagers toward unregulated websites or "logged-out" experiences that bypass existing protections.
- **Risk of restricting children's right to information and expression**:
  - Social media platforms are also **channels for education, creativity, and civic participation.** Blanket bans could therefore limit children's digital rights.
  - For example, the **Internet Freedom Foundation** has argued that blanket bans may **restrict children's rights to information, expression, and participation in digital public spaces.**
- **Failure to address the root causes of digital harm**:
  - Critics argue that bans focus on restricting users rather than reforming the harmful design of platforms.
  - For example, digital rights groups argue that problems such as **algorithmic amplification, addictive platform design, and weak data protection frameworks remain unaddressed by simple bans**.
- **Potential widening of the digital gender divide**:
  - In societies where girls already face barriers to technology access, bans framed around protection may be misused to keep girls offline entirely.
  - For example, digital rights advocates warn that **families could use such restrictions to justify denying girls internet access permanently**, thereby deepening the digital gender divide.
- **Impact on educational and skill development opportunities**:
  - Social media and online platforms increasingly support learning, peer collaboration, and digital skill development. A ban could therefore deprive children of useful educational exposure.
  - For example, **57% of adolescents who can use smartphones reported using them for educational activities** *(ASER 2024)*, showing that digital platforms are also used for learning.
- **Practical difficulty of monitoring children's digital behaviour**:
  - Enforcement requires constant monitoring of millions of users and platforms, which may place a heavy burden on regulatory agencies.

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    - For example, with **94.3% of youth aged 15–29 using the internet**, regulating access at scale becomes a significant governance challenge *(MOSPI – CMS Telecom 2025)*.
- **Risk of over-regulation and excessive state control of the internet**:
    - Some experts argue that broad restrictions on online access could set precedents for **wider digital censorship.**
    - For example, global debates on child safety laws have raised concerns that **governments may extend such regulatory powers to control broader internet content**.
- **Potential privacy concerns in age-verification systems**:
    - Enforcing age limits may require platforms to collect additional personal data, such as identity documents or biometric verification.

- **Economic and innovation implications for digital platforms**:
    - India is one of the largest social media markets globally, and restrictions on a large segment of users could affect platform growth and digital innovation.
    - For example, India hosts **hundreds of millions of social media users**, making youth engagement a significant component of the digital ecosystem.
- **Shift of responsibility away from parents and educators**:
    - Some experts argue that **digital literacy and parental supervision** are more effective solutions than outright bans.
    - For example, the **Economic Survey 2025–26 recommends promoting education-focused devices, parental controls, and content filters**, suggesting that a broader ecosystem approach may be preferable to simple prohibition.

GLOBAL EXAMPLES OF GOVERNMENT RESTRICTIONS ON CHILDREN'S SOCIAL MEDIA USE:

- **Australia**: Passed the **Online Safety Amendment (Social Media Minimum Age) Act, 2024**, setting a **minimum age of 16 for social media use**. Platforms must block under-age accounts and can face **fines up to AUD 49.5 million (~$50 million)** for non-compliance.
- **France**: A **2023 law requires parental consent for children under 15** to create social media accounts; stronger restrictions are being discussed but a full ban is not yet operational.
- **United States** : Several states such as **Utah and Arkansas** require **age verification and parental consent for minors to create social media accounts**, though some provisions face legal challenges.
- **China**: Enforces strict digital controls for minors, including **"youth mode" on platforms, screen-time limits, and restricted content access** for children.
- **United Kingdom**: The **Online Safety Act, 2023** requires platforms to **protect children from harmful content and strengthen age-verification systems**, though it does not impose a direct social media ban.

WAY FORWARD:

- **Adopt a national regulatory framework rather than fragmented state laws**: A uniform national policy can avoid inconsistencies in age definitions and enforcement challenges. For example, different proposals such as **Karnataka banning social media for under-16 users and Andhra**

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Pradesh considering restrictions for under-13 users show the need for a **central law that sets clear and uniform standards**

- **Strengthen age-verification and platform accountability**: Governments should require social media companies to implement reliable age-verification mechanisms and child-safe design standards. For example, the **Economic Survey 2025–26 recommends age verification, age-appropriate default settings, and restrictions on targeted advertising for children**.
- **Promote child-safe digital ecosystems rather than blanket bans**: Regulation should focus on reducing exposure to harmful content while preserving educational benefits. For example, the **Economic Survey suggests promoting basic phones or education-only tablets for children**, along with usage limits and content filters.
- **Improve digital literacy among children and parents**: Awareness programmes in schools and communities can help children recognise risks such as cyberbullying, misinformation, and online exploitation.
- **Strengthen cyber safety infrastructure and grievance mechanisms**: Given the rising risk environment, governments should improve reporting systems and law-enforcement capacity.
- **Encourage responsible platform design and algorithmic transparency**: Platforms should redesign algorithms to reduce addictive engagement patterns and harmful content amplification for minors. Regulatory frameworks could require **child-friendly design standards and stronger moderation policies**.

CONCLUSION:

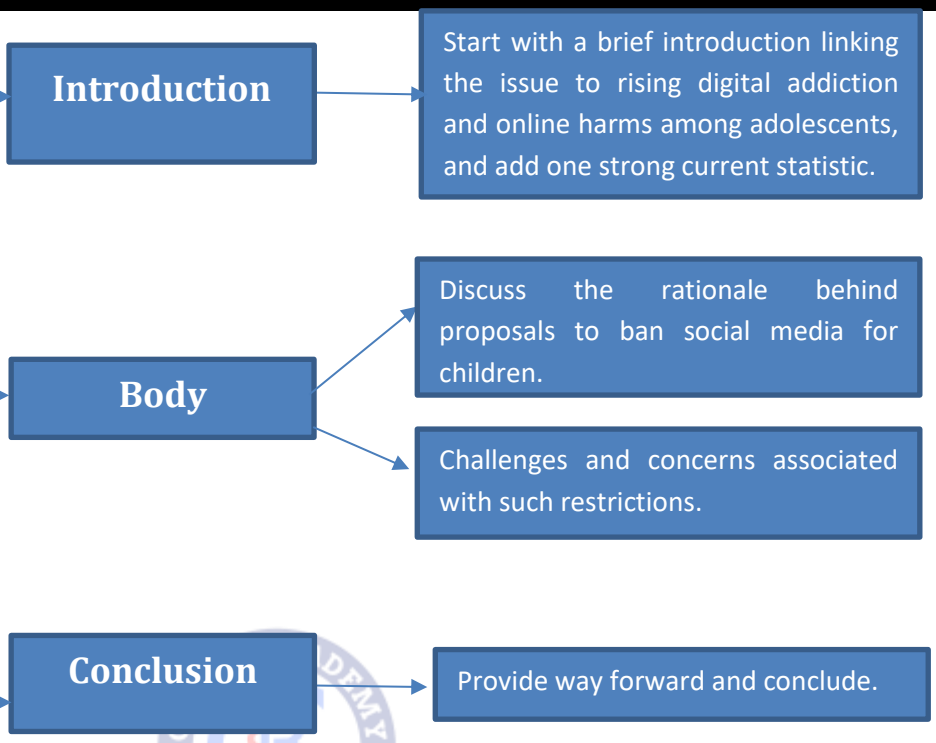
- Protecting children from online harms is an emerging governance challenge in the digital age. While restrictions on social media access may help reduce risks, a balanced approach combining regulation, platform accountability, digital literacy, and child-safe technology design is essential to ensure both online safety and meaningful digital participation.

PRACTICE QUESTION

Q. "Amid rising concerns over digital addiction and online harms among adolescents, several governments are considering restrictions on children's access to social media." Discuss the rationale behind proposals to ban social media use for children. Also examine the challenges and concerns associated with implementing such restrictions. (15 marks, 250 words)

APPROACH

Q. "Amid rising concerns over digital addiction and online harms among adolescents, several governments are considering restrictions on children's access to social media." Discuss the rationale behind proposals to ban social media use for children. Also examine the challenges and concerns associated with implementing such restrictions. (15 marks, 250 words)



MODEL ANSWER

Rising concerns about digital addiction, cyberbullying, and exposure to harmful online content have prompted policymakers to consider restricting children's access to social media. For instance, **Karnataka has proposed banning social media use for children under 16, while Andhra Pradesh is considering restrictions for those under 13**. The concern is amplified by the fact that **76% of adolescents aged 14–16 who know how to use smartphones reported using them for social media** *(ASER 2024)*.

Rationale Behind Proposals to Ban Social Media for Children:

1. **Rising digital addiction and mental health risks:** Social media platforms are designed to maximise user engagement through algorithm-driven feeds that encourage compulsive scrolling. For example, the **Economic Survey 2025–26 flagged digital addiction and compulsive digital use among youth as a growing concern**.
2. **Early and widespread access to digital platforms:** Children are entering the digital ecosystem at a very young age, often without adequate supervision. For example, **82.2% of children aged 14–16 know how to use a smartphone** *(ASER 2024)*.
3. **Dominance of entertainment over educational use:** Evidence suggests that smartphones are used more for social media than for learning. For example, **76% of adolescents used smartphones for social media compared to 57% for educational purposes** *(ASER 2024)*.
4. **Exposure to cyberbullying and online exploitation:** Children face risks such as cyberbullying, grooming, and exposure to inappropriate content. For example, **cyber crimes against children increased from 232 cases in 2018 to 1,823 cases in 2022** *(NCRB)*.

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5. **Protection from manipulative advertising and algorithmic targeting:** Children are especially vulnerable to targeted advertising and behavioural nudging by digital platforms. For example, the **Economic Survey 2025–26 recommended restricting targeted digital advertisements aimed at children**.
6. **Global trend toward stronger child online protection:** Many countries are introducing stricter digital regulations for minors. For example, **Australia's Online Safety Amendment Act sets a minimum age of 16 for social media use**, requiring platforms to block underage accounts.

Challenges and Concerns Associated with Such Restrictions:

1. **Enforcement and technical challenges:** Digital platforms operate globally, making age-based restrictions difficult to enforce. For example, state-level bans such as **Karnataka's proposal may be difficult to implement due to the challenge of geo-restricting online platforms**.
2. **Regulatory fragmentation across states:** Different age thresholds across states may create policy inconsistencies. For example, **Karnataka proposes a ban below 16 years, while Andhra Pradesh proposes restrictions below 13**.
3. **Easy circumvention of age restrictions:** Minors may bypass restrictions by providing false birth dates or using parents' accounts.
4. **Risk of pushing children toward unsafe platforms:** Banning mainstream platforms may push teenagers toward unregulated or less secure digital spaces.
5. **Potential restriction of children's digital rights:** Social media also enables access to information, creativity, and civic participation.Digital rights groups such as the **Internet Freedom Foundation argue that blanket bans may limit children's rights to information and expression**.
6. **Impact on educational opportunities and digital skills:** Online platforms can also support learning and skill development. For example, **57% of adolescents reported using smartphones for educational activities** *(ASER 2024)*.
7. **Risk of widening the digital gender divide:** Restrictions framed as protection may be misused to restrict girls' access to digital technology.

Way Forward:

- **Adopt a uniform national framework** to avoid fragmented state regulations and ensure consistent enforcement.
- **Strengthen age-verification and platform accountability**, including safer default settings and restrictions on targeted advertising.
- **Promote child-safe digital ecosystems** through content filters, parental controls, and education-focused devices.
- **Improve digital literacy among children, parents, and educators** to encourage responsible digital behaviour.
- **Enhance cyber safety infrastructure**, including reporting mechanisms and law-enforcement capacity to tackle online crimes against minors.
- **Encourage responsible platform design**, including algorithmic transparency and child-friendly content moderation.

The debate over banning social media for children reflects a broader challenge of protecting minors in an increasingly digital society. While restrictions may reduce exposure to online harms, a balanced approach combining **regulation, digital literacy, platform accountability, and safer technology design** is essential to safeguard children while enabling meaningful digital participation.

14. PERSONS WITH DISABILITIES

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social Justice

REFERENCE NEWS:

In **Prabhu Kumar v. State of Himachal Pradesh (2026)**, the **Supreme Court** held that the State cannot impose an arbitrary upper limit on disability percentage for public employment when the **Rights of Persons with Disabilities (RPwD) Act, 2016** prescribes only a **minimum benchmark disability of 40%**.

- The case involved a candidate with **90% locomotor disability** who cleared the Assistant District Attorney exam but was denied appointment due to a **60% disability cap imposed by the State**, which had been upheld by the Himachal Pradesh High Court.
- The Court ruled that such a restriction is **manifestly arbitrary and violates Articles 14 and 16** of the Constitution.
- It emphasized that **reasonable accommodation** must be provided and that eligibility should be based on **functional competence rather than rigid disability percentages**.
- The judgment also noted that locomotor disability does not necessarily impair professional abilities such as legal reasoning or mental agility.
- The ruling builds on earlier disability rights jurisprudence, including **Vikash Kumar v. UPSC (2021)** and **Om Rathod v. DGHS (2024)**, which emphasized functional assessment over rigid eligibility limits.
- The **RPwD Act, 2016**, which replaced the **1995 Disabilities Act**, aligns Indian law with the **UN Convention on the Rights of Persons with Disabilities (UNCRPD)** and shifts the approach from a **medical model to a rights-based model** of disability.
- It recognizes **21 disabilities**, mandates **4% reservation in government jobs**, **5% in higher education**, ensures accessibility, free education for children with benchmark disabilities, and establishes institutional mechanisms for protection and grievance redressal.

Overall, the judgment strengthens disability rights by prioritizing **capability, inclusion, and equal opportunity**, preventing systemic exclusion through arbitrary eligibility criteria.

PERSONS WITH DISABILITIES IN INDIA:

- As per Census 2011, the number of Persons with Disabilities in the country is 2.68 crore, which is **2.21% of the total population** of the country.
- The **Rights of Persons with Disabilities (RPwD) Act, 2016,** replaced the PwD Act of 1995 to align with the UN Convention on the Rights of Persons with Disabilities (UNCRPD).
- It recognizes 21 disabilities, including physical, intellectual, mental, and neurological conditions (e.g., autism, dwarfism, acid attack survivors).

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- **National Policy for Persons with Disabilities, 2006,** focuses on prevention of disabilities, rehabilitation, and the creation of accessible environments and promotes **community-based rehabilitation programs**.
- **Schemes:**
    - **Accessible India Campaign (Sugamya Bharat Abhiyan):** Aims to make public spaces and transport systems accessible.
    - **PM-DAKSH:** Divyang Skill Development and Rehabilitation Scheme
    - Deendayal Disabled Rehabilitation Scheme
    - National Fellowship for Students with Disabilities
    - **ADIP Scheme (Assistance to Disabled Persons):** Provides aids and appliances.
    - **Unique Disability ID (UDID):** Ensures targeted delivery of benefits.
    - **National Trust Act, 1999** provide for constitution of a body at the national level for the welfare of persons with autism, cerebral palsy, mental retardation and multiple disabilities.
    - **Rehabilitation Council of India,1992** regulates training and registration of professionals working in the field of disability rehabilitation.
    - PwDs are eligible for subsidized loans under schemes like NHFDC (National Handicapped Finance and Development Corporation).

SC OBSERVATIONS ON DISABILITY RIGHTS:

- ***Om Rathod vs Director General of Health Services Case, 2024:*** The SC ruled that a **functional assessment** of a candidate's actual capabilities must override rigid eligibility percentages.
- ***V. Surendra Mohan v. State of Tamil Nadu Case, 2019*****:** SC **upheld a 50% disability limit** on hearing and visually impaired candidates for District Judge appointments. The Himachal Pradesh High Court had denied relief to the appellant, relying on this judgement.
- ***Vikash Kumar v. UPSC Case, 2021***: The V. Surendra Mohan judgement was **overruled** by SC in the ***Vikash Kumar v. UPSC Case, 2021***.
- ***Govt. of India v. Ravi Prakash Gupta, 2010:*** The SC held that non-identification of posts could not be a reason for the government to evade its obligation to reserve 3% of posts for persons with disabilities.

CHALLENGES FACED BY PwDs IN INDIA:

Accessibility Barriers

- **Inaccessible Public Spaces**: Only **5-7%** of India's public buses are wheelchair-accessible, leaving many PwDs unable to use public transport independently and only 3% buildings are fully accessible causing an architectural apartheid.
    - A survey by the **Centre for Law and Policy Research (CLPR)** found that **75% of public buildings** in Bengaluru were not accessible to PwDs despite the Accessible India Campaign

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- **Delays in the Accessible India Campaign**: Launched in 2015 to make public spaces and government websites accessible, the campaign has missed several deadlines. As of 2022, only **35% of targeted public buildings** had become accessible.

Educational Barriers

- **Low Enrolment and Dropouts**: PwDs have limited access to quality education due to **lack of inclusive infrastructure, assistive technologies**, and trained teachers. Schools often lack **ramps, braille materials**, or **sign language interpreters**, making it difficult for students with physical and sensory impairments to participate.
    - According to the **2019-20 UDISE+ report**, **only 61% of children with disabilities** were enrolled in school.
    - Approximately **45% of disabled people are illiterate**, and only 62.9% of disabled people aged 3 to 35 have ever attended regular schools.

Employment Challenges

- **Unemployment and Underemployment**: India has almost **3 crore people with disability (PwD)** of which around 1.3 crore is employable but only **34 lakh of them have been employed.**
    - The **ILO** reported that the employment rate for PwDs in India is **36%** compared to **60%** for people without disabilities.
    - In 2019, the **Comptroller and Auditor General (CAG)** found that only **54% of reserved government job vacancies** for PwDs had been filled.
- **Private Sector Participation**: Many private companies are reluctant to hire PwDs, citing **low productivity and high accommodation costs**.
    - A 2022 survey by the **Equal Opportunity Foundation** found that **70% of companies** still do not have inclusive hiring policies.

Healthcare and Rehabilitation Gaps

- **Inadequate Healthcare Access**: PwDs struggle to access basic healthcare due to **poor infrastructure, lack of trained personnel**, and **high costs** of specialized treatments.
    - A study by the **WHO** found that **nearly 50% of PwDs** in India cannot afford healthcare services or assistive devices like wheelchairs or hearing aids.
- **Limited Access to Mental Healthcare**: People with **mental illnesses and intellectual disabilities** often face **stigma**, making it difficult to access timely care. Mental health services account for only **0.16% of the national health budget**.

Social Stigma and Discrimination

- **Social Isolation**: PwDs face **stigma** and **negative attitudes** within families and communities. This leads to social exclusion, particularly for women with disabilities.
    - In many parts of India, children with disabilities are kept out of sight, and families hesitate to send them to school for fear of social ostracization.

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- **Gender-Based Challenges**: **Women with disabilities** experience **dual discrimination** due to both gender bias and disability stigma.
    - A 2020 study by the **National Centre for Promotion of Employment for Disabled People (NCPEDP)** found that women with disabilities have **lower access to education and employment opportunities** than men with disabilities.

Political and Civic Participation Challenges

- **Voting Access Issues**: Although the **Election Commission of India (ECI)** has taken steps like braille-enabled ballot papers and ramps, many polling stations remain inaccessible.
    - In the 2019 Lok Sabha elections, several PwDs reported difficulties accessing polling booths and a lack of **transportation support** to reach them.
- **Limited Political Representation**: PwDs are underrepresented in **decision-making bodies**. There are few PwDs in **parliament or local governments**, which limits their ability to influence policies that affect them.

Delayed Implementation of Policies

- **Slow Progress on RPwD Act Provisions**: Although the **RPwD Act, 2016** expanded the scope of disabilities and ensured reservations, **implementation remains slow**.
    - State-level Disability Commissioners are often underfunded or lack adequate staff, hampering the monitoring of policy implementation.
    - According to the **Ministry of Social Justice and Empowerment**, **only 11 out of 36 states and union territories** have fully implemented the RPwD Act provisions.

Financial Hardships and Social Security Gaps

- **Inadequate Social Security**: PwDs often face financial hardships due to **limited employment opportunities and insufficient social security programs**.
    - Disability pensions provided by state governments are **inconsistent** and often inadequate. In some states, the pension amount is as low as **INR 1,000 per month**, which is insufficient to meet basic needs.
- **Lack of Insurance Coverage**: Many PwDs are excluded from mainstream **health and life insurance policies**, either due to discriminatory clauses or high premiums.

Technological barriers

- The new frontier of exclusion occurs as India rapidly digitalizes. Report by the 2020 Web Accessibility Annual Report found that **98% of websites fail to comply with accessibility requirements** for People with Disability.

WAY FORWARD FOR AN ACCESSIBLE INDIA:

Strengthening Infrastructure and Universal Design Principles

- **Japan's Barrier-Free Law** mandates that public transport, buildings, and infrastructure follow **universal design principles**, benefiting all users, including the elderly and PwDs.
- **Sweden** ensures accessibility by integrating **design-for-all** principles into urban planning, making housing, parks, and transportation systems equally usable for everyone.

Inclusive Education and Skill Development

- **Finland** integrates children with disabilities into mainstream schools, providing **personalized learning plans** and well-trained teachers.
- **USA's Individuals with Disabilities Education Act (IDEA)** mandates that students with disabilities receive **free and appropriate public education (FAPE)** along with necessary support services.

Expanding Employment Opportunities and Corporate Responsibility

- **Germany** mandates companies with more than 20 employees to hire **at least 5% of PwDs**, with fines for non-compliance.
- **Australia** promotes employment of PwDs through the **Disability Employment Services (DES)**, providing wage subsidies and job coaches.

Improving Healthcare and Rehabilitation Services

- **Cuba** provides free, community-based rehabilitation services to all citizens, including PwDs.
- **Norway** offers **comprehensive health insurance**, covering specialized treatment and assistive devices for PwDs.

Enhancing Accessibility in Elections and Civic Participation

- **Canada** ensures that polling stations are accessible and offers **postal voting** options for PwDs.
- **South Africa** mandates that electoral information is provided in **braille, sign language, and easy-to-read formats**.

Addressing Social Stigma through Awareness Campaigns

- **UK's "Disability Confident" campaign** works with employers to reduce biases against PwDs and foster inclusion.
- **Kenya** engages in **community-level disability awareness programs**, empowering families and communities to support PwDs.

Strengthening Monitoring and Accountability

- **New Zealand** monitors its disability-related commitments by including **PwDs in advisory councils** and government planning bodies.

Expanding Social Protection and Financial Inclusion

- **Brazil** offers a **disability allowance** under its social protection program, ensuring that no PwD lives below the poverty line.
- **South Korea** has a **specialized insurance scheme** that covers the cost of assistive devices, treatments, and personal care services for PwDs.

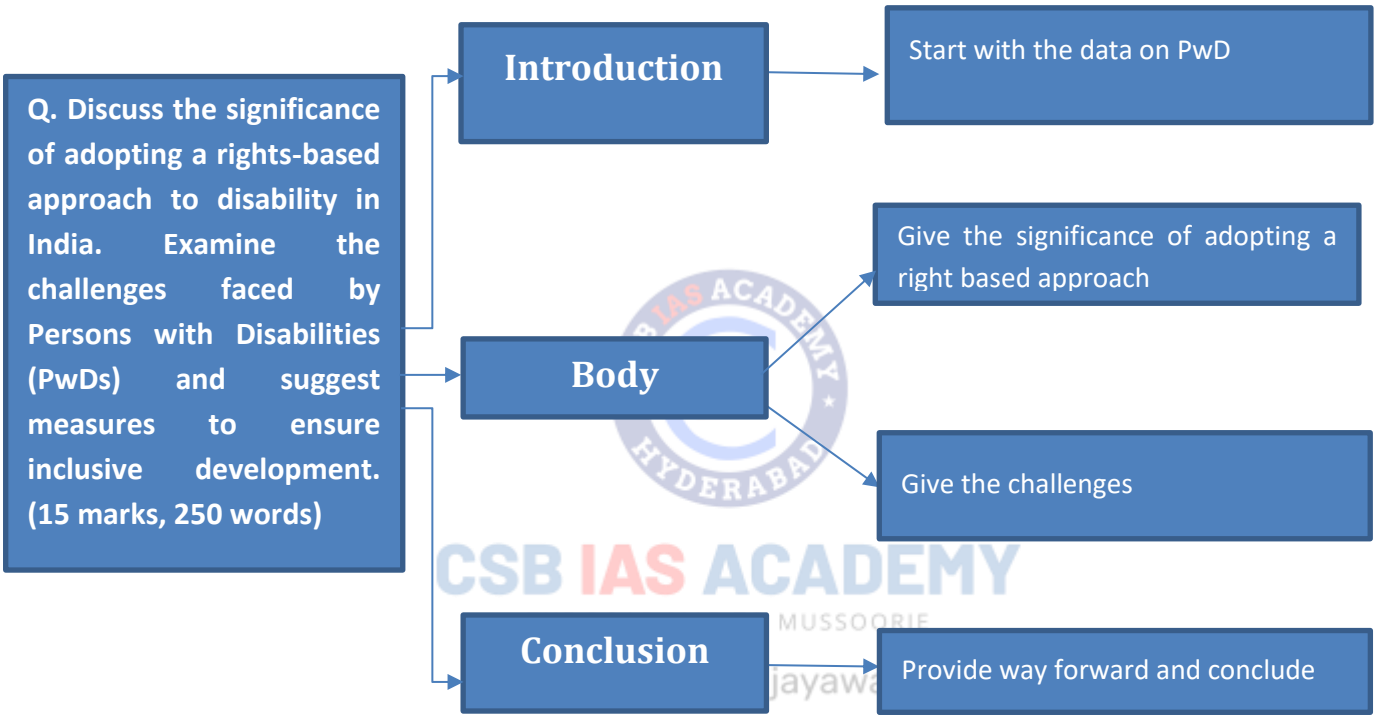
Incheon Strategy to 'Make the Right Real' for PwDs in Asia and Pacific is a better inclusive and global move to accessible infrastructure and opportunities for all promoting SDGs. Also there is a need of change in

perception as India moved from **Viklang to Divyang** by creating a universal design innovation hub, neuro adaptive learning platforms and use of AI to make an inclusive accessible India.

PRACTICE QUESTION

Q. Discuss the significance of adopting a rights-based approach to disability in India. Examine the challenges faced by Persons with Disabilities (PwDs) and suggest measures to ensure inclusive development. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Persons with Disabilities (PwDs) constitute a significant section of India's population, with **2.68 crore people (2.21% of the population)** as per Census 2011. Over time, India's disability policy framework has shifted from a **welfare-oriented medical model to a rights-based approach**, particularly with the enactment of the **Rights of Persons with Disabilities (RPwD) Act, 2016**, which emphasizes equality, dignity, and participation in society.

Significance of a Rights-Based Approach to Disability

1. **Equality and Non-Discrimination**: A rights-based framework ensures that PwDs are treated as equal citizens with constitutional protections against discrimination.
2. **Inclusive Participation**: It promotes the full participation of PwDs in education, employment, governance, and social life.

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3. **Legal Safeguards and Institutional Support**: Laws such as the RPwD Act provide reservations in education and employment, accessibility standards, and institutional mechanisms for grievance redressal.
4. **Alignment with Global Norms**: The framework aligns India's policies with international commitments such as the **UN Convention on the Rights of Persons with Disabilities (UNCRPD)**.
5. **Focus on Capability and Dignity**: It shifts the emphasis from charity or welfare to **empowerment and recognition of individual capabilities**.

Challenges Faced by Persons with Disabilities in India

1. **Accessibility Barriers**: Many public buildings, transport systems, and digital platforms remain inaccessible despite policy initiatives.
2. **Educational Exclusion**: Limited assistive technologies, lack of trained teachers, and inadequate infrastructure lead to low enrollment and higher dropout rates among students with disabilities.
3. **Employment Constraints**: A significant proportion of employable PwDs remain unemployed, and reserved vacancies in government jobs often remain unfilled.
4. **Healthcare and Rehabilitation Gaps**: Limited availability and affordability of assistive devices, rehabilitation services, and mental healthcare facilities.
5. **Social Stigma and Discrimination**: Negative societal attitudes often lead to marginalization, particularly affecting women with disabilities.
6. **Limited Political Participation**: Accessibility issues at polling stations and underrepresentation in decision-making institutions hinder civic participation.
7. **Implementation Deficits**: Weak enforcement of policies and inadequate resources for monitoring bodies slow the realization of rights guaranteed under the law.

Way Forward

1. **Strengthen Accessible Infrastructure** through universal design in public buildings, transport, and digital services.
2. **Promote Inclusive Education** with assistive technologies, teacher training, and individualized learning support.
3. **Enhance Employment Opportunities** by incentivizing private sector hiring and ensuring effective implementation of reservation policies.
4. **Improve Healthcare and Rehabilitation Services** including affordable assistive devices and community-based rehabilitation programs.
5. **Leverage Technology for Accessibility** by enforcing digital accessibility standards.

6. **Promote Awareness and Social Inclusion** through nationwide campaigns to combat stigma.
7. **Strengthen Monitoring and Accountability** by empowering institutional bodies responsible for implementing disability rights.

Ensuring the dignity and empowerment of PwDs is essential for achieving **inclusive and equitable development**. Strengthening legal frameworks, improving accessibility, and transforming societal attitudes will help realize the constitutional vision of **equal opportunity and social justice for all citizens**.

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15. INDIA'S ANTI-TUBERCULOSIS FIGHT

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social Justice >> Health

REFERENCE NEWS:

India has made notable progress in tackling tuberculosis (TB), with declining incidence and improved treatment coverage, as highlighted in the **World Health Organization's Global TB Report 2025.** However, **drug-resistant TB (DR-TB)** remains a serious and under-recognised public health crisis.

TUBERCULOSIS BURDEN OF INDIA:

The Ministry of Health and Family Welfare's **India TB Report 2024**, highlights that

- India accounts for **~25% of the global DR-TB burden**, with **1.3–1.5 lakh new cases annually**.
- **Around 1 lakh TB cases go undetected each year,** enabling silent transmission. DR-TB is harder to treat, requiring longer, more toxic regimens, with lower cure rates and higher mortality.
- The mortality rate due to Tuberculosis had declined from 28 per lakh population in 2015 to 23 per lakh population in 2022.
- Nearly 33% or 8.4 lakh of the 25.5 lakh cases reported in 2023 came from the private sector. To compare, only 1.9 lakh cases were reported by the private sector in 2015, the year considered to be the baseline by the programme that is geared towards the elimination of the disease.
- The estimated incidence of TB in 2023 increased slightly to 27.8 lakh from the previous year's estimate of 27.4 lakh.
- **The mortality due to the infection remained the same at 3.2 lakh.**
- India's **TB mortality dropped** from 4.94 lakhs in 2021 to 3.31 lakhs in 2022.
- India reached its 2023 target of initiating treatment in 95% of patients diagnosed with the infection.
- **India bears a quarter of the global TB burden**

TB CASES IN INDIA OVER THE YEARS

	India TB Report 2020	2023	2024
Estimated TB cases	26.9 lakh	27.4 lakh	27.8 lakh
Number of cases reported	24.04 lakh	24.2 lakh	25.5 lakh
Reporting from private sector	6.8 lakh	7.3 lakh	8.4 lakh
% cases from private sector	28.20%	30%	32.90%
Estimated mortality	4.36 lakh	3.2 lakh	3.2 lakh

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Tuberculosis:

A bacterial infection caused by Mycobacterium tuberculosis. It can affect any organ of the body. It is an airborne infection. Every year, 10 million people fall ill with TB. Despite being a preventable and curable disease, **1.5 million people die from TB each year** – making it the world's top infectious killer.

TB is the **leading cause of death of people with HIV** and also a major contributor to antimicrobial resistance. Most of the people who fall ill with TB live in low- and middle-income countries, but TB is present all over the world. **About half of all people with TB can be found in 8 countries:** Bangladesh, China, India, Indonesia, Nigeria, Pakistan, Philippines and South Africa.

TB is treated with a standard 6-month course of 4 antimicrobial drugs. Multi-drug resistant Tuberculosis is a form of TB caused by **bacteria that do not respond to isoniazid and rifampicin**, the 2 most powerful, first-line anti-TB drugs. MDR-TB is treatable and **curable by using second-line drugs** such as bedaquiline. **Extensively drug-resistant TB (XDR-TB)** is a more serious form of MDR-TB caused by bacteria that **do not respond to the most effective second-line anti-TB drugs,** often leaving patients without any further treatment options.

Global Efforts to tackle TB include:

- WHO initiative to FIND.TREAT.ALL. #EndTB with Global Fund and Stop TB Partnership
- WHO releases Global Tuberculosis Report
- The Global Plan to End TB 2023-2030 a goal adopted by all UN member states and WHO

India's Efforts:

- PM TB Mukt Bharat Abhiyan- **It's an initiative of Ministry of Health and Family Welfare (MOHFW)** to accelerate the country's progress towards TB elimination by 2025.
- National Strategic Plan for Tuberculosis Elimination (2017-2025)
- TB Harega Desh Jeetega Campaign- It has **three strong pillars** which include **clinical approach, public health component** and **active community participation.** It aims to improve and **expand the reach of TB care services** across the country **by 2022.**
- Nikshay Poshan Yojna- It provides Rs 500 support through **direct benefit transfer to the patients.**
- The National TB Elimination Programme (NTEP) serves as the cornerstone of these efforts, complemented by the TB-Free India Campaign and the Nikshay Poshan Yojana, which provides nutritional support to TB patients.

CHA

- **High Burden of TB cases: India** has a large number of TB cases, with millions of new cases reported annually. The sheer volume of cases poses a challenge for the healthcare system to diagnose, treat, and monitor patients effectively. Many TB cases go unreported or are misdiagnosed, particularly in rural areas where access to healthcare services is limited. This contributes to the persistence of the disease and hampers control efforts.
- **Drug-Resistant TB**: The emergence of drug-resistant TB, particularly MDR-TB and extensively drug-resistant TB (XDR-TB), is a significant challenge. These strains are harder and more expensive to treat, requiring longer treatment durations with more toxic drugs. Ensuring that patients adhere to the lengthy and often difficult treatment regimens is a major challenge. Poor adherence leads to treatment failure and the development of drug resistance.
- **Healthcare Infrastructure and Access:** In many parts of India, especially rural and remote areas, healthcare infrastructure is inadequate. This includes a lack of diagnostic facilities, trained healthcare workers, and proper medical supplies. Socioeconomic disparities, geographical barriers,

and the stigma associated with TB prevent many people from accessing timely and effective healthcare services.

- **Social Determinants and Stigma**: TB is closely linked to poverty, malnutrition, and poor living conditions. These factors contribute to the spread and persistence of the disease, particularly in overcrowded and unsanitary environments. TB carries a significant social stigma, which discourages individuals from seeking diagnosis and treatment. This leads to delays in care, increased transmission, and poor treatment outcomes.
- **Awareness and Education**: Many people, particularly in rural areas, have limited awareness of TB symptoms, transmission, and the importance of completing treatment. This lack of knowledge contributes to delays in diagnosis and treatment, as well as non-adherence to treatment regimens. Misinformation about TB, including its causes, treatment, and prevention, is prevalent in some communities. This further complicates efforts to control the disease.
- **Coordination and Implementation Challenges**: Despite the presence of national programs like the National TB Elimination Program (NTEP), the implementation of TB control measures faces challenges related to coordination among various stakeholders, including public and private healthcare providers. A significant proportion of TB patients in India seek care in the private sector, where reporting and adherence to national treatment guidelines may be inconsistent. Engaging and regulating the private sector is crucial for comprehensive TB control.
- **Emerging Threats**: TB is the leading cause of death among people with HIV. The co-infection of TB and HIV presents a complex challenge, as HIV-positive individuals are more susceptible to TB, and managing both diseases simultaneously is difficult. The COVID-19 pandemic has disrupted TB services, including diagnosis, treatment, and follow-up. The pandemic has also diverted resources and attention away from TB control efforts, potentially leading to an increase in cases and deaths.
- **Research and Development**: The development of new TB treatments, diagnostics, and vaccines has been slow. Existing treatment regimens are lengthy, and there is an urgent need for more effective and shorter-duration treatments. The BCG vaccine, currently used for TB prevention, has limited efficacy, particularly in adults. The development of a more effective vaccine is crucial for long-term TB control.

HOW TO SHARPEN INDIA'S ANTI-TB FIGHT?

- **Strengthening Healthcare Infrastructure and Access:** Increase the number of diagnostic centers and ensure that quality TB diagnosis is available even in remote areas. This includes expanding the use of molecular diagnostics like GeneXpert, which provides rapid and accurate TB diagnosis, including drug-resistant TB.
    - China has effectively used rapid molecular tests and expanded access to TB diagnostic services through a network of TB-specific health facilities. This has helped in early detection and prompt treatment, especially in rural areas.
- **Integration of TB Services into Primary Healthcare:** Integrate TB diagnosis and treatment into the broader primary healthcare system, ensuring that every primary health center can diagnose and manage TB. This includes training healthcare workers at all levels.

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- Brazil's Unified Health System integrates TB care into primary healthcare services, ensuring widespread access to TB diagnosis and treatment, which has been key to controlling the disease in the country.

- **Enhancing Drug-Resistant TB Management**: Scale up the use of shorter, more effective treatment regimens for MDR-TB and XDR-TB, reducing the burden on patients and improving adherence.
  - South Africa has successfully implemented shorter regimens for drug-resistant TB, such as the nine-month regimen recommended by WHO, leading to improved treatment outcomes and reduced transmission.
- **Strengthen Patient Support Systems**: Enhance support systems for TB patients, including nutritional support, counseling, and adherence monitoring, to ensure that patients complete their treatment.
  - Peru's community-based DOTS (Directly Observed Treatment, Short-course) program, combined with nutritional and psychosocial support, has significantly improved treatment adherence and success rates, especially for drug-resistant TB.
- **National Campaigns and Community Engagement:** Launch comprehensive national campaigns to raise awareness about TB symptoms, treatment options, and the importance of completing treatment. Engage communities to reduce stigma associated with TB.
  - Vietnam's National TB Program includes extensive public education campaigns and community engagement initiatives that have successfully reduced stigma and improved early diagnosis and treatment adherence.
- **School and Workplace Education Programs**: Implement TB education programs in schools and workplaces, focusing on prevention, early detection, and reducing discrimination against TB patients.
  - The U.S. implements TB education in schools and workplaces, particularly in high-risk communities, to ensure widespread awareness and reduce stigma associated with TB.
- **Digital Tools for TB Monitoring**: Expand the use of digital tools for monitoring TB cases, treatment adherence, and outcomes. Platforms like Nikshay, which tracks TB patients, can be enhanced with features for real-time data collection and analysis.
  - Kenya has implemented digital health solutions like the mHealth platform, which supports real-time reporting and tracking of TB cases, improving the efficiency of TB control programs.
- **Use of Artificial Intelligence (AI) and Machine Learning**: Integrate AI and machine learning into TB diagnostic processes to identify patterns in large datasets, improve diagnostic accuracy, and predict treatment outcomes.
  - Japan uses AI to analyze chest X-rays and other diagnostic data, improving early detection of TB, especially in cases that might be missed by traditional methods.
- **Engaging Private Healthcare Providers:** Strengthen partnerships with private healthcare providers to ensure that TB cases diagnosed and treated in the private sector are properly reported and managed according to national guidelines.

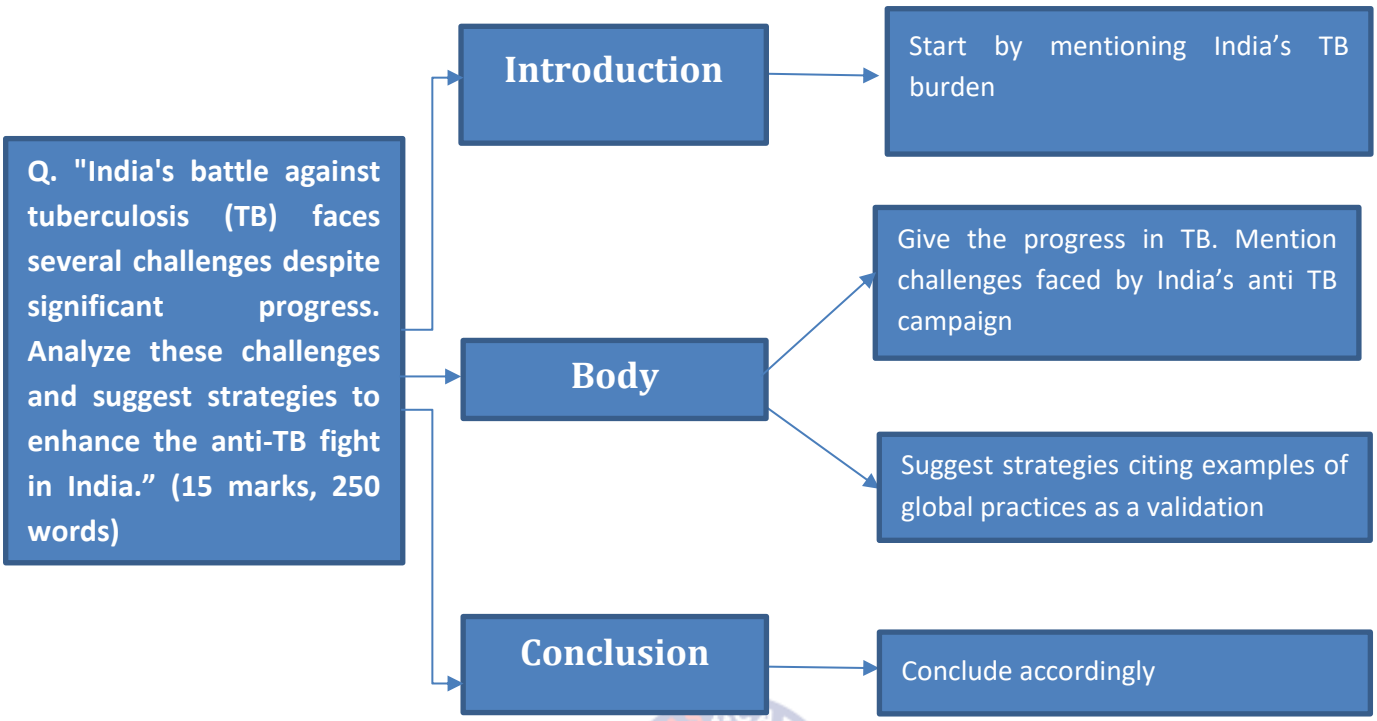
- The Philippines has effectively engaged private healthcare providers in its TB control program through public-private mix (PPM) initiatives, improving case detection and treatment outcomes.

- **Incentivizing Private Sector Participation**: Provide financial incentives to private healthcare providers for reporting TB cases and adhering to national treatment protocols.
  - Indonesia's TB control program includes financial incentives for private sector providers who comply with national TB guidelines, resulting in better integration of private care into the national TB control efforts.
- **Investment in New Diagnostics, Drugs, and Vaccines**: Increase investment in research and development of new TB diagnostics, chest Xray machines, drugs, and vaccines. Collaborate with international research organizations to accelerate the development of these tools.
  - The UK has invested significantly in TB research, leading to the development of new TB diagnostics and treatment options that are now being used globally.
- **Collaboration with International Research Networks:** Strengthen collaboration with international research networks and institutions to share knowledge, resources, and innovations in TB research.
  - The Netherlands collaborates extensively with international research networks like the European & Developing Countries Clinical Trials Partnership (EDCTP) to drive TB research and innovation.
- **Ensuring Sustainable Financing:** Secure long-term funding for TB programs through government budgets, international aid, and public-private partnerships, ensuring that TB control efforts are sustainable.
  - Ghana's National TB Program has successfully secured sustainable financing through a combination of government funding and international support, ensuring continuous TB control efforts.
- **Utilizing Global Funding Mechanisms:** Leverage global funding mechanisms like the Global Fund to Fight AIDS, Tuberculosis, and Malaria, to support national TB control efforts, particularly in scaling up interventions for drug-resistant TB.
  - Ethiopia has effectively utilized funds from the Global Fund and other international donors to strengthen its TB control program, particularly in scaling up MDR-TB treatment.

PRACTICE QUESTION

Q. "India's battle against tuberculosis (TB) faces several challenges despite significant progress. Analyze these challenges and suggest strategies to enhance the anti-TB fight in India." (15 marks, 250 words)

APPROACH



MODEL ANSWER

India accounts for nearly a quarter of the global TB burden, with millions of new cases reported annually. The country has made notable progress in the fight against TB, with strengthened case-finding efforts and initiatives like the PM TB Mukt Bharat Abhiyan.

As per India TB Report 2024, there has been a decline in mortality rate due to TB from 28 lakh to 23 lakh in 2022.Engagement of private sector in TB diagnosis have increased to 33%. Also due to national level campaigns and awareness programmes, TB related stigma has been gradually removed and there is an increase in initiation of treatment in infected persons.

CHALLENGES IN INDIA'S ANTI-TB FIGHT:

- **High Burden of TB Cases:** India has a large number of TB cases, with an estimated 27.8 lakh cases reported in 2023. Moreover, a significant proportion of TB cases remain undiagnosed or misdiagnosed, particularly in rural areas where access to healthcare is limited.
- **Drug-Resistant TB:** The emergence of multi-drug resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB) poses a significant challenge. These forms of TB are harder and more expensive to treat, requiring longer treatment durations with more toxic drugs.
- **Healthcare Infrastructure and Access:** Inadequate healthcare infrastructure, particularly in rural and remote areas, hampers TB control efforts. The lack of diagnostic facilities, trained healthcare workers, and medical supplies exacerbates the situation.
- **Social Determinants and Stigma:** TB is closely linked to poverty, malnutrition, and poor living conditions. Social stigma associated with TB discourages individuals from seeking diagnosis and treatment, leading to increased transmission and poor treatment outcomes.

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- **Emerging Threats:** Co-infection with HIV complicates TB management, as HIV-positive individuals are more susceptible to TB. The COVID-19 pandemic has further disrupted TB services, diverting resources and attention away from TB control efforts.
- **Research and Development:** The development of new TB treatments, diagnostics, and vaccines has been slow. Existing treatment regimens are lengthy, and the BCG vaccine currently used for TB prevention has limited efficacy, particularly in adults.

STRATEGIES TO ENHANCE THE ANTI-TB FIGHT IN INDIA:

- Recognise DR-TB as a **national public health emergency**.
- Ensure **universal upfront drug-resistance testing**.
- Rapidly scale up **shorter, safer regimens (e.g., BPaLM)**. Utilize rapid molecular tests like GeneXpert, as successfully implemented in **China**, to ensure early detection and prompt treatment.
- Strengthen **community-based, patient-centric care** with nutritional, financial, and psychosocial support. Provide nutritional support, counselling, and adherence monitoring, similar to **Peru's community-based DOTS program**, to ensure that patients complete **their treatment.**
- Promote **active case finding and LTBI treatment**.
- Tackle **stigma through awareness and sustained public engagement**.
- Conduct comprehensive public education campaigns, similar to **Vietnam's National TB Program**, to raise awareness about TB and reduce stigma.
- Enhance platforms like Nikshay for real-time data collection and analysis, similar to the **mHealth platform in Kenya**, to improve TB case monitoring and treatment outcomes. Integrate AI and machine learning into TB diagnostic processes, following **Japan's approach** of using AI to analyze chest X-rays, to improve early detection of TB.
- **Expanding Research and Development:** Increase investment in TB research, as seen in the **UK**, to develop new diagnostics and treatments.
- Ensure sustainable financing for TB programs through government budgets and international aid, similar to **Ghana's National TB Program**.

India's fight against tuberculosis can be significantly enhanced by adopting a multi-faceted approach that addresses the existing challenges and incorporates global best practices. Strengthening healthcare infrastructure, improving drug-resistant TB management, increasing public awareness, leveraging technology, fostering public-private partnerships, expanding research, and ensuring sustainable financing are crucial steps toward achieving the goal of TB elimination by 2025.

16. TRIBUNAL SYSTEM IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Constitution >> Judiciary

REFERENCE NEWS:

A bench of Chief Justice Surya Kant and justices Joymalya Bagchi and Vipul M Pancholi observed tribunals are creation of the government and are functioning like no-man's land without any accountability to anyone.

Supreme Court's Key Observations

- The **Supreme Court of India** (bench led by Chief Justice **Surya Kant)** strongly criticized the current functioning of **tribunals**, calling them a "liability" and a "mess" because of systemic flaws and lack of accountability.
- The bench said tribunals have become a **"no-man's land"** with little accountability to either the judiciary or the executive.
- The Court was hearing a plea for extending the tenure of tribunal members and chairpersons after its November 2025 ruling struck down key parts of the **Tribunals Reforms Act, 2021** (related to appointments and tenure) as unconstitutional.

Outsourcing of Judgments & Technical Member Concerns

- The CJI highlighted a serious problem: in some tribunals, **technical members are not writing their own judgments** and are instead outsourcing the task to judicial members, sometimes under undue pressure.
- The Court said this practice is "completely unheard of in the judicial system", signalling a breakdown in responsibility and judicial discipline within tribunals.

Vacancies, Appointments & Accountability

- The Court expressed concern about the **non-filling of vacancies** in tribunals, forcing it to consider interim extensions of current members' tenures.
- It noted the problematic practice where, upon retirement of a tribunal chairperson, a **technical member automatically becomes acting chair**, even though many technical members lack familiarity with specialised areas like environmental, company or insolvency law.
- The bench directed the Attorney General to work on urgent arrangements to prevent functional crises in key tribunals.

TRIBUNALS IN INDIA:

Tribunals in India are **statutory, quasi-judicial bodies** created to adjudicate specialised disputes outside the regular court structure.

- Tribunals are established to reduce pendency in regular courts, provide specialised adjudication in technical domains and offer relatively quicker and less formal justice.

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- Tribunals were conceived as institutions for "**faster adjudication"** and subject expertise, especially in technical areas like taxation and service law.
- They operate in areas such as administrative service disputes (CAT), corporate insolvency (NCLT/NCLAT), securities regulation (SAT), environment (NGT), armed forces disputes (AFT)
- **Pre-Constitutional Origins: Income Tax Appellate Tribunal (1941)** was India's first tribunal, created to reduce judicial backlog
- Post-Independence commissions (Administrative Reforms Commission, Law Commission) recommended specialised adjudicatory bodies to address growing service and regulatory disputes
- **42nd Constitutional Amendment, 1976:** The tribunal system acquired explicit constitutional recognition through the **42nd Amendment:**
    - **Article 323A**: Enables Parliament to establish Administrative Tribunals for service matters.
    - **Article 323B**: Empowers Parliament and State Legislatures to create tribunals for taxation, labour, land reforms, etc.
    - These provisions inserted **Part XIV-A** into the Constitution. The Supreme Court later clarified that **Article 323B subjects are not exhaustive**; legislatures can establish tribunals on subjects within their legislative competence
- **Structure of the Tribunal System:** Tribunals function in two structural models
    - **Substitutes of High Courts**: Appeals lie directly to the Supreme Court as seen in Securities Appellate Tribunal.
    - **Subordinate to High Courts**: Appeals lie before High Courts like Industrial Tribunal.
    - **After L. Chandra Kumar,** tribunals function as **courts of first instance**, not substitutes. This created a parallel but constitutionally supervised adjudicatory system.
- **Judicial Evolution, Supreme Court's Transformative Role:** The tribunal system's constitutional character has been largely shaped by judicial decisions.
    - **S.P. Sampath Kumar (1986):** Tribunals may substitute High Courts **only if they have equal efficacy**. Judicial participation in appointments is mandatory.
    - **L. Chandra Kumar (1997):** A watershed ruling. Struck down clauses excluding High Court jurisdiction. Held judicial review under Articles 226/227 and 32 as part of the **Basic Structure**. Tribunals are **supplemental, not substitutes**, for constitutional courts. Recommended independent administrative mechanism (early idea of National Tribunals Commission). This restored constitutional supremacy over tribunalisation.
    - **R. Gandhi (2010):** Technical members cannot outnumber judicial members. Judicial dominance is necessary where High Court jurisdiction is transferred. Only senior officials with specialised expertise can be technical members
    - **Madras Bar Association Cases (2014, 2020, 2021):** The Court consistently insisted on Ministry of Law control (not parent ministries). Recommended creation of a **National Tribunals Commission (NTC)**. Mandated minimum 5-year tenure. Struck down 4-year tenure and 50-year minimum age in 2021.
    - **Rojer Mathew (2019):** Executive-led removal provisions unconstitutional. Short tenures compromise independence. Called for uniform retirement age. Required judicial impact assessment before tribunal mergers

The Tribunals Reforms Act, 2021

The **Tribunals Reforms Act, 2021,** enacted on 13 August 2021 and deemed effective from 4 April 2021, was passed to rationalise tribunals, streamline appellate mechanisms, and regulate service conditions of tribunal members.

The Act has two major components:

- **Rationalisation of tribunals:** Abolishing certain appellate tribunals and transferring their functions to High Courts or other judicial bodies.
- **Uniform conditions of service:** Laying down qualifications, appointment procedures, tenure, removal, salary and reappointment rules for Chairpersons and Members of tribunals.

Appointment Mechanism

- Appointments made by the Central Government on recommendation of a **Search-cum-Selection Committee (SCSC)**.
- Committee headed by the **Chief Justice of India or nominee**.
- Includes two Secretaries to Government of India.
- Recommends a **panel of two names** per vacancy.
- Government to decide preferably within three months.

Minimum Eligibility

- Minimum age: **50 years** for appointment as Chairperson or Member.

Tenure

- Chairperson: 4 years or till age 70 (whichever earlier).
- Member: 4 years or till age 67 (whichever earlier).
- Eligible for reappointment.

Removal

Grounds include Insolvency, Conviction involving moral turpitude, Incapacity, Abuse of position, Conflict of interest

Abolition and Transfer of Tribunals

The Act abolished certain appellate bodies and transferred jurisdiction mainly to **High Courts**. Key examples include Intellectual Property Appellate Board (IPAB), Film Certification Appellate Tribunal, Airport Appellate Tribunal, Plant Varieties Protection Appellate Tribunal. Pending cases were transferred to appropriate High Courts.

Amendments Across Multiple Acts

The Act amended over 20 statutes, including Cinematograph Act, 1952, Copyright Act, 1957, Patents Act, 1970, Trade Marks Act, 1999, Companies Act, 2013, SEBI Act, 1992, Administrative Tribunals Act, 1985, NGT Act, 2010.

SIGNIFICANCE OF TRIBUNALS IN INDIA:

- **Reduction of Judicial Backlog:** One of the primary objectives of tribunalisation was to reduce pendency in constitutional courts. As of recent judicial data, regular courts face pendency exceeding 5 crore cases.
  - Corporate insolvency matters are handled by the **National Company Law Tribunal**, preventing commercial benches of High Courts from being overwhelmed.
  - The Law Commission (272nd Report, 2017) recognised tribunalisation as a tool to reduce arrears. Although pendency persists in some tribunals, their creation has undeniably redistributed subject-specific caseloads.

- **Specialised and Technical Adjudication:** Modern regulatory governance involves complex sectors such as competition law, securities markets, telecom regulation, environmental compliance, and insolvency resolution.
    - The **National Green Tribunal** includes environmental experts alongside judicial members.
    - The **Securities Appellate Tribunal** adjudicates insider trading and market manipulation matters requiring financial expertise.
    - The Supreme Court in *R. Gandhi (2010)* acknowledged that technical members may be necessary where specialised adjudication is required. Tribunals therefore enhance epistemic quality in technically dense disputes.
- **Speed and Procedural Flexibility:** Tribunals are not strictly bound by the Code of Civil Procedure, 1908 or the Bharatiya Sakshya Adhiniyam (Evidence framework). They operate on principles of natural justice.
    - The **Debt Recovery Tribunal** follows summary procedures for recovery of debts.
    - Insolvency matters before the NCLT are statutorily time-bound (180–330 days under IBC).
    - The objective of expedited adjudication was recognised in *S.P. Sampath Kumar (1986)*, which upheld tribunal creation as constitutionally valid where they offer equal efficacy.
- **Accessibility and Decentralisation:** Tribunals operate through multiple regional benches across India, increasing geographical access.
    - CAT and NGT maintain zonal benches. Consumer commissions operate at district and state levels. This decentralisation aligns with **Article 39A** (access to justice) and reduces travel and litigation costs.
- **Development of a Regulatory State:** Tribunals are integral to India's transition from a classical adjudicatory model to a regulatory governance model. They ensure enforcement of sectoral regulation, administrative accountability, investor confidence in commercial and financial systems and environmental compliance.
    - SAT strengthens securities market governance.
    - NCLT/NCLAT stabilise corporate restructuring frameworks.
    - The Supreme Court in *L. Chandra Kumar (1997)* recognised tribunals as legitimate courts of first instance within the constitutional framework.
- **Constitutional Legitimacy and Judicial Oversight:** Tribunals operate within constitutional supervision. Judicial review under Articles 226/227 and 32 remains intact. High Courts retain supervisory jurisdiction.
    - In *L. Chandra Kumar*, the Court held judicial review to be part of the Basic Structure, ensuring tribunals remain constitutionally accountable.
- **Economic and Commercial Significance:** Commercial tribunals today handle disputes worth lakhs of crores of rupees. Efficient insolvency resolution and securities regulation contribute to ease of doing business, credit discipline, financial market stability, investor confidence. The tribunal system is thus central to India's economic governance architecture.

CHALLENGES TO TRIBUNALS IN INDIA:

- **Executive Dominance and Threat to Judicial Independence:** Tribunals are often administratively controlled by the very ministries that appear before them as litigants. The executive controls appointments, reappointments, salaries and service conditions, infrastructure, removal proceedings. This undermines **separation of powers.**
    - The Ministry of Corporate Affairs controls appointments and infrastructure of the **National Company Law Tribunal**, even though the government is a frequent litigant in insolvency matters.
- **Short Tenure and Reappointment Dependency:** Short fixed tenure combined with reappointment provisions creates dependence on the executive. The Tribunals Reforms Act, 2021 fixed 4-year tenure and minimum age of 50 years. This discouraged younger legal professionals and made members dependent on reappointment.
- **Composition Imbalance: Dilution of Judicial Character:** Excessive appointment of technical members or bureaucrats risks diluting judicial standards.
    - **R. Gandhi (2010):** Technical members must not outnumber judicial members. Judicial functions cannot be transferred solely to non-judicial persons.
    - In early Company Law Tribunal proposals, bureaucrats were proposed to dominate benches. The Supreme Court intervened to mandate judicial predominance.
- **Vacancy Crisis and Institutional Dysfunction:** Chronic vacancies have rendered several tribunals dysfunctional.
    - Armed Forces Tribunal has repeatedly faced large vacancy percentages. Income Tax Appellate Tribunal has faced dozens of unfilled judicial member posts.
    - Recent hearings on the Tribunals Reforms Act saw the Supreme Court remark that tribunals were becoming "virtually defunct" due to prolonged vacancies.
- **Pendency and Backlog within Tribunals:** Tribunals were created to reduce backlog, yet many suffer heavy pendency.
    - NCLT benches have exceeded IBC's 180–330 days resolution timeline. Commercial tribunals handle disputes worth lakhs of crores with growing backlog.
- **Fragmented Administration and Lack of Uniformity:** Different tribunals are administered by different ministries. There is no uniform framework governing selection procedure, service conditions, retirement age, infrastructure, funding
- **Legislative–Judicial Conflict:** Repeated re-enactment of provisions struck down by the Supreme Court has created institutional friction.
    - Finance Act, 2017 delegated appointment powers to executive. Rules struck down in Rojer Mathew (2019). 2021 Ordinance reintroduced similar provisions. Tribunals Reforms Act, 2021 re-enacted them. Again challenged by Madras Bar Association.
    - Whether Parliament can re-enact provisions without curing defects identified by the Court. This raises separation of powers concerns and risks legislative overruling of judicial review.
- **Appellate Redundancy and Limited Finality:** Instead of reducing litigation layers, tribunals sometimes add an additional stage. High Courts frequently overturn tribunal decisions due to weak reasoning, especially in environmental and corporate matters.

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- **Financial and Infrastructure Dependence:** Tribunals depend on executive-controlled budgets. Judicial independence requires financial autonomy, which tribunals currently lack.
- **Constitutional Identity Crisis:** Tribunals occupy an ambiguous position. They exercise judicial power, but are not constitutional courts. They may substitute High Court jurisdiction in certain areas, yet remain subject to judicial review. This hybrid identity has generated doctrinal instability.

WAY FORWARD:

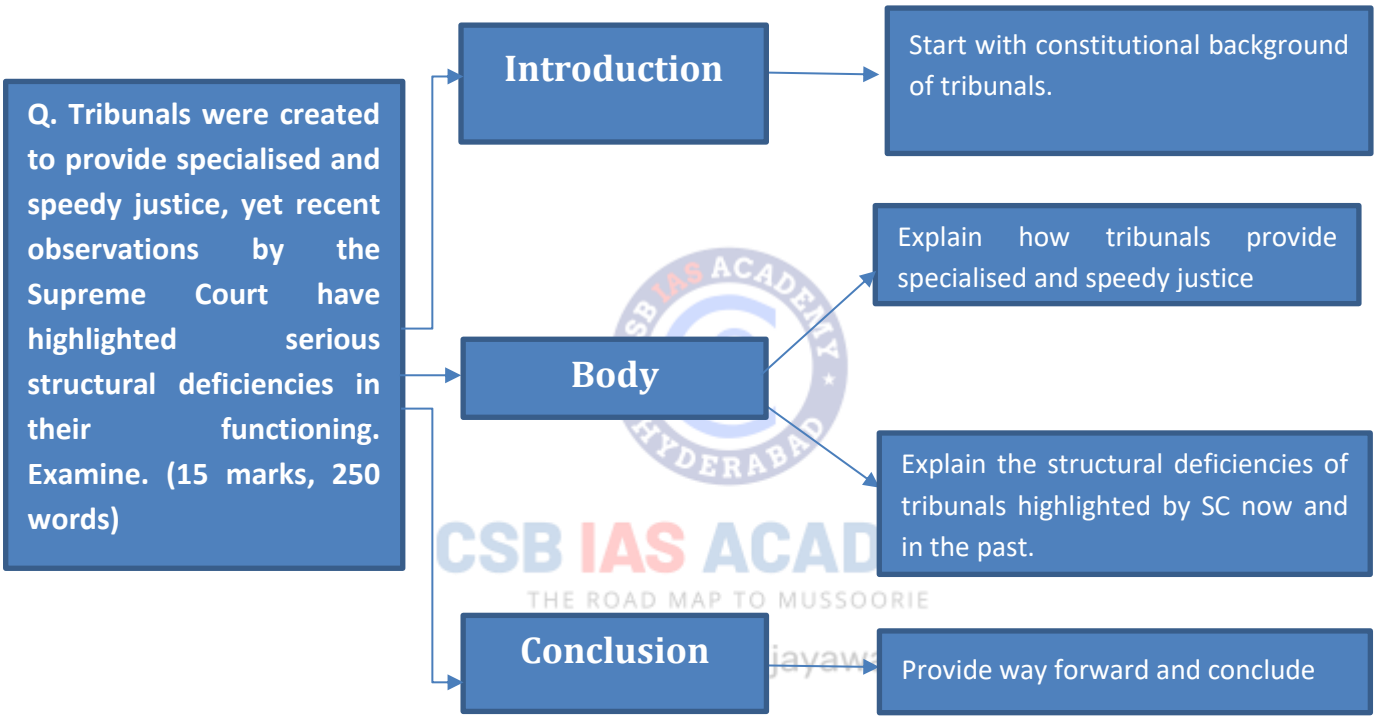
- **Establish a National Tribunals Commission (NTC):** Repeatedly recommended in *L. Chandra Kumar (1997), Madras Bar Association (2020),* Parliamentary Standing Committee (2015). An independent statutory body, headed by a retired Supreme Court judge with members from judiciary, executive, and domain experts, removes tribunal administration from parent ministries, preventing conflict of interest.
- **Insulate Appointments from Executive Control:** Judicial majority in Search-cum-Selection Committees, time-bound appointment process
    - **United Kingdom**: Judicial Appointments Commission independently handles tribunal appointments, reducing executive discretion.
- **Ensure Security of Tenure:** Minimum 5-year tenure (as mandated in Madras Bar Association, 2020). No routine reappointment; instead, fixed non-renewable longer tenure. Retirement age parity with High Court judges where jurisdiction overlaps
- **Financial and Administrative Autonomy:** Tribunal budgets charged to Consolidated Fund of India. Independent administrative cadres
    - *Madras Bar Association (2014)*: Administrative control must vest in Ministry of Law, not subject ministries.
    - **United Kingdom: HM Courts & Tribunals Service (HMCTS)** Unified administrative framework ensures uniform standards and autonomy.
- **Rationalise Tribunal Structure:** Conduct Judicial Impact Assessment before merger/abolition (as required in Rojer Mathew, 2019). Consolidate tribunals based on subject similarity
- **Address Vacancies and Pendency:** Mandatory timeline for filling vacancies (e.g., 3–4 months before anticipated retirement). Increase sanctioned strength based on caseload analysis. Technology-driven e-filing and virtual hearings
    - National Judicial Data Grid–style dashboard for tribunals to ensure transparency in pendency data.
- **Strengthen Quality of Adjudication:** Mandatory judicial training for technical members, periodic performance evaluation (without affecting independence)
- **Clarify Appellate Structure:** Limit routine appeals to High Courts to substantial questions of law. Consider specialised appellate tribunal benches. Strengthen internal appellate mechanisms where feasible
- **Ensure Constitutional Compliance in Legislation:** Parliament must avoid re-enacting provisions already struck down without curing constitutional defects. Respect separation of powers. Conduct pre-legislative consultation and impact assessment

India may adopt a hybrid model a unified tribunal administration (UK model) and strong constitutional judicial review (US model).

PRACTICE QUESTION

Q. Tribunals were created to provide specialised and speedy justice, yet recent observations by the Supreme Court have highlighted serious structural deficiencies in their functioning. Examine. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Tribunals in India received constitutional recognition through the **42nd Constitutional Amendment Act, 1976**, which inserted **Part XIV-A** into the Constitution.

- **Article 323A** empowers Parliament to establish Administrative Tribunals for service matters.
- **Article 323B** enables Parliament and State Legislatures to create tribunals for matters such as taxation, labour disputes, land reforms, and industrial disputes.

While intended as substitutes or supplements to High Courts in specialised domains, the Supreme Court in *L. Chandra Kumar (1997)* clarified that tribunals are courts of first instance and remain subject to judicial review under Articles 226/227 and 32, which form part of the Basic Structure.

How Tribunals Provide Specialised and Speedy Justice

- **Reduction of Judicial Backlog**: With regular courts facing pendency exceeding 5 crore cases, tribunals redistribute subject-specific disputes such as service, tax and insolvency matters.

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- **Subject-Matter Expertise**: Tribunals such as the **National Green Tribunal** and the **Securities Appellate Tribunal** include technical experts, enabling informed adjudication in complex regulatory sectors.
- **Specialised Commercial Adjudication**: The **National Company Law Tribunal** handles corporate insolvency and restructuring under time-bound frameworks, reducing pressure on commercial benches of High Courts.
- **Procedural Flexibility**: Tribunals are not strictly bound by the Code of Civil Procedure or the Evidence framework; they follow principles of natural justice, enabling quicker disposal.
- **Decentralised Access to Justice**: Bodies like the **Central Administrative Tribunal** operate through regional benches, improving geographical access and lowering litigation costs.
- **Strengthening Regulatory Governance**: Tribunals enhance enforcement of sectoral laws in finance, telecom, environment, and corporate regulation, contributing to economic stability and investor confidence.

Thus, tribunalisation reflects the transition from a classical adjudicatory model to a modern regulatory state.

Structural Deficiencies Highlighted by the Supreme Court

- **Executive Dominance in Appointments and Administration**: Ministries controlling appointments and infrastructure are often litigants before tribunals. In *Rojer Mathew (2019)*, the Court held that executive control in removal and appointments undermines separation of powers.
- **Short Tenure and Reappointment Dependency**: The Tribunals Reforms Act, 2021 prescribed a 4-year tenure and minimum age of 50 years. In *Madras Bar Association (2021)*, these were struck down as arbitrary and violative of judicial independence.
- **Vacancies and Institutional Paralysis**: The Supreme Court recently observed that tribunals are becoming a "no-man's land" due to prolonged vacancies and lack of accountability
- **Outsourcing and Breakdown of Judicial Discipline**: The Court flagged instances where technical members allegedly outsourced judgment writing to judicial members, terming it "completely unheard of"
- **Dilution of Judicial Character**: In *R. Gandhi (2010)*, the Court held that technical members must not outnumber judicial members, as tribunals exercising judicial power must maintain judicial predominance.
- **Appellate Redundancy and Limited Finality**: Post-*L. Chandra Kumar*, tribunal decisions are subject to High Court review, sometimes adding another litigation layer rather than reducing backlog. These deficiencies have led the Court to question whether tribunals have achieved the efficacy envisioned under *S.P. Sampath Kumar (1986)*.

Way Forward

- **Establish a National Tribunals Commission (NTC)**: As recommended in *L. Chandra Kumar* and *Madras Bar Association (2020)*, an independent body should oversee appointments, administration, and finances.

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- **Judicial Majority in Selection Committees**: Ensure judicial dominance and restrict executive discretion.
- **Secure Tenure and Service Conditions**: Minimum five-year tenure without routine reappointment to reduce executive influence.
- **Financial Autonomy**: Budgets should be charged to the Consolidated Fund, ensuring independence from parent ministries.
- **Time-bound Filling of Vacancies**: Institutionalised appointment calendar and transparent selection mechanisms.
- **Strengthen Quality and Accountability**: Training for technical members, performance audits (without compromising independence), and digital case management.

Tribunals were constitutionally designed to deliver specialised, efficient justice in a complex regulatory state. Only by aligning tribunal governance with constitutional principles of separation of powers and judicial review can tribunals fulfil their intended role as effective instruments of specialised justice.

17. ISRAEL – US – IRAN CONFLICT

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations > India and West Asia

REFERENCE NEWS:

- After the joint US–Israel strikes on Iran, **Iran's response** quickly regionalised, **not limited to Israel, but also aimed at US-linked targets across the Gulf and wider Middle East.**
- Reuters reports the US operation name as **Operation Epic Fury**. The Israeli strike campaign is being referred to as **Operation Roaring Lion (also reported as "Lion's Roar")**, while Iran's retaliatory missile/drone campaign has been framed by the IRGC (Islamic Revolutionary Guard Corps) as **Operation True Promise 4**.

TIMELINE AND CURRENT STATUS OF THE US–ISRAEL–IRAN WAR:

Immediate trigger of conflict:

- **27 Feb 2026:** Reuters reports the US Central Command received the **final "go order"** from President Donald Trump approving the US operation named **Operation Epic Fury**.
- **28 Feb 2026 (Saturday):** The **US and Israel launched coordinated strikes on Iran**, opening the current phase of the war.

Why it escalated so fast

- The initial strike package was **not limited to infrastructure**. It reportedly **targeted senior leadership**, which made retaliation more likely and pushed the conflict from a "contained exchange" into a broader regional confrontation.

Major events since the strikes

- **Death of Iran's top leadership:**
  - **28 Feb 2026:** Reuters reports Iran's **Supreme Leader Ayatollah Ali Khamenei** was killed in the US–Israel airstrikes (confirmed by Iranian state media in Reuters' follow-up).
  - Reuters also reports **other senior Iranian military leaders** were killed, describing the strike as a major blow to Iran's power structure.
- **Iran's retaliation "regionalised":**
  - **1 Mar 2026:** Reuters documents Iranian retaliatory strikes **"across Israel and the Gulf Arab states"**, with **blasts reported in Doha** and **heard in Dubai**.
  - The same pattern is reflected in Reuters reporting that **Iran's missiles and drones continued to hit or threaten targets tied to US and allied interests** in the region.
- **Wider fronts activate (proxies and neighbours):**
  - Reuters notes the risk of continuing retaliation by Iran and its aligned actors, and frames the post-Khamenei environment as one where further attacks on US and allied interests are plausible.

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- **Attacks on diplomatic facilities**
  - Reuters reports that **Iran-linked drones struck the US embassy in Riyadh**, causing minor damage and a fire, with additional drones intercepted before reaching the city.

Current status of the war:

- **War is ongoing, multi-theatre, and still escalating in risk:**
  - Reuters describes the conflict as an **active US–Israeli air war against Iran** with continuing **regional spillover**, and reports statements indicating the campaign's duration is uncertain but not expected to run into years (as per Netanyahu's remarks).
  - A US intelligence assessment cited by Reuters warns of **further Iranian and proxy retaliation**, including the likelihood of **targeted attacks** and increased **cyber activity**, following Khamenei's death.
- **Key characteristics right now**
  - **Direct strikes**: US and Israel continue their military campaign.
  - **Regional retaliation**: Iran's response includes strikes beyond Israel into **Gulf Arab states** hosting US assets.
  - **High-threat posture**: US agencies and allies are treating the region as high risk, with warnings centered on retaliation dynamics after Khamenei's killing

DEEP ROOTS OF THE CONFLICT

Iran–Israel hostility (post-1979)

- After the **1979 Iranian Revolution**, Iran broke ties with Israel and adopted an explicitly anti-Israel posture, positioning itself as a champion of the Palestinian cause and framing Israel as an illegitimate occupier.

  The **1979 Iranian Revolution** was a mass uprising that **overthrew Shah Mohammad Reza Pahlavi and established Ayatollah Khomeini's Islamic Republic**, ending Iran's monarchy.
- Over time, this evolved into a long **Iran–Israel "shadow war"** involving covert actions, assassinations, cyber operations, and proxy battles rather than continuous direct state-to-state war.

Sunni–Shia sectarian divide and regional power rivalry

- The Middle East's political map has been deeply shaped by the **Sunni–Shia divide**, with **Shia-majority Iran** and **Sunni-led Saudi Arabia/Gulf monarchies** often competing for influence.
- This rivalry frequently plays out through **proxy conflicts**, especially in **Iraq, Syria, Yemen, and Lebanon**, where local civil wars and political crises became arenas for regional competition.

Iran's nuclear programme and the JCPOA cycle: "Iran nuclear power" as a perceived threat to the US and Israel

- The core strategic fear for the US and Israel is that Iran could achieve a **nuclear weapons capability** (or a short "breakout time" to a bomb), changing the regional balance and emboldening Iranian power projection. (Framing widely reflected in US/Western policy debates.)
- **JCPOA (2015)**: Iran accepted limits on enrichment, stockpiles and centrifuges in exchange for sanctions relief.
- **Post-2019 rollback**: The IAEA documents that from **8 May 2019**, Iran began stepping

away from JCPOA nuclear commitments in phases.

- This "deal → rollback → escalation" cycle is one of the main structural drivers behind periodic crises and military signalling.

Proxy war architecture ("Axis" dynamics)

Hezbollah (Lebanon): Iran's most important Israel-facing proxy

- Hezbollah emerged in the early 1980s during Lebanon's civil war era and became a major armed and political actor in Lebanon.
- Iran's support for Hezbollah is widely documented in overviews of the Iran–Israel proxy conflict; Hezbollah has been central to Iran's strategy of pressuring Israel on a northern front.

Houthis (Yemen) and the Red Sea front

- Since the **Gaza war (Oct 2023)**, the Houthis escalated attacks on Red Sea shipping, claiming links to Israel-related commerce; this triggered a US-led maritime security response.
- The US-led response included **Operation Prosperity Guardian** (to protect Red Sea shipping).
- Iran has rejected Western accusations to end its support for Houthi actions, showing how Yemen/Red Sea has become part of the wider Iran-linked contestation space.

How these strands feed today's war

- **Israel's security lens:** stop Iran's nuclear capability and degrade the "ring" of proxies that can strike Israel (especially Hezbollah).
- **US security lens:** protect bases, allies, and shipping lanes; prevent nuclear escalation; contain regional spillover into energy chokepoints. (The current crisis reinforces this, given Hormuz and broader shipping disruption.)
- **Sectarian/geopolitical lens:** Sunni-led Gulf states host US bases and infrastructure, making them both stakeholders and targets when Iran chooses to widen the theatre.

Where the conflict stands now

- The present war is unfolding on top of these long-running drivers: **Iran–Israel ideological hostility**, **Iran–Saudi/Gulf rivalry**, **nuclear brinkmanship**, and **proxy warfare**.
- Current reporting also shows the conflict generating second-order shocks such as **shipping insurance cancellations** and broader trade disruption, which is exactly how a "proxy + chokepoint" architecture magnifies regional crises into global impacts.

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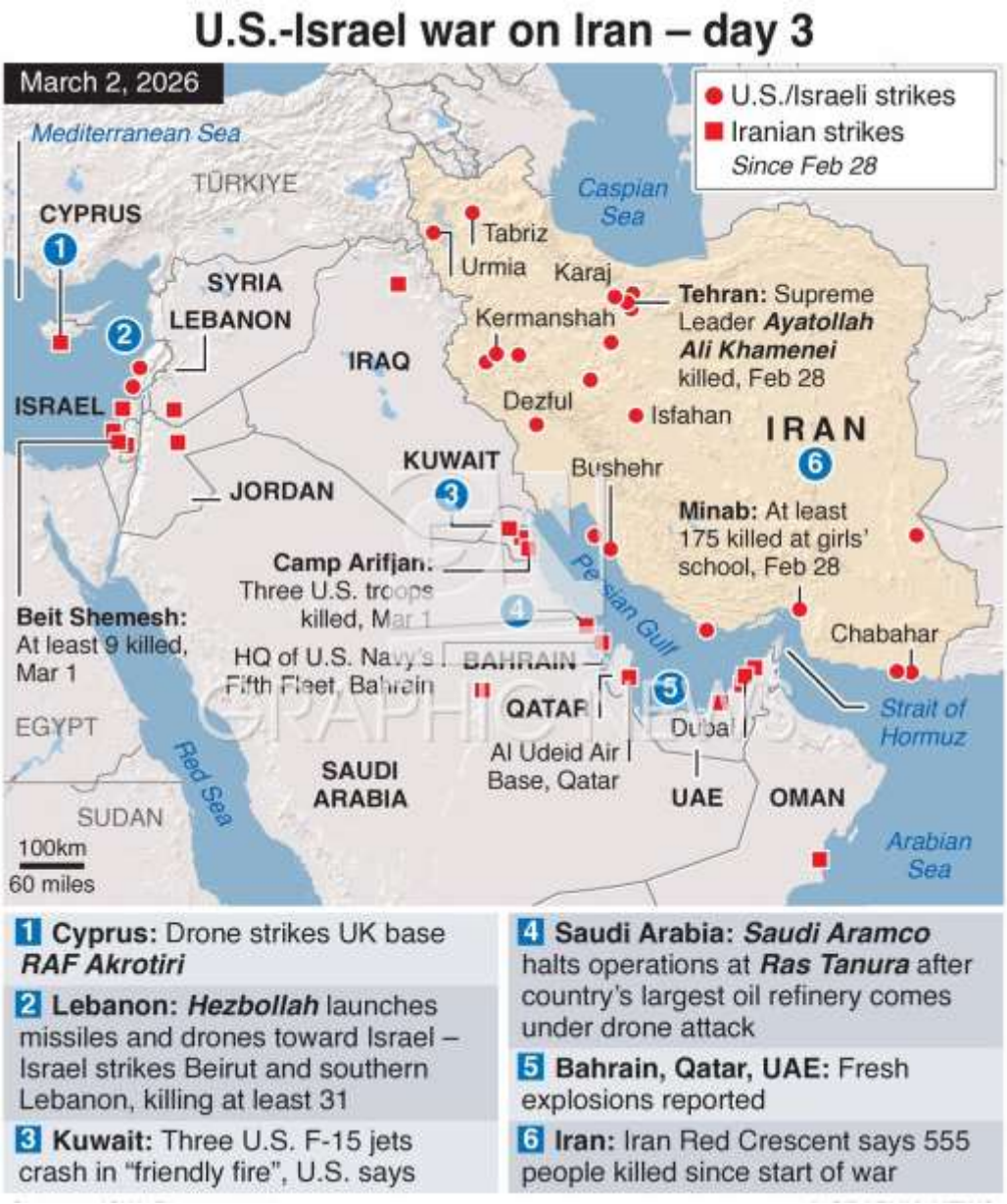

GLOBAL IMPACT OF THE IRAN–US–ISRAEL CONFLICT:

- **Energy price shock and inflation transmission:**
  - **Oil risk premium jumps fast** because the Strait of Hormuz is a critical chokepoint for roughly **~30% of global oil**; disruption fears alone can push prices up sharply.
  - For instance, Reuters reports Brent **spiked up to ~13%** during the escalation linked to shipping disruptions and attacks on vessels.
  - Higher crude feeds into **global inflation** through transport, aviation fuel, petrochemicals, fertilisers, plastics, and freight.

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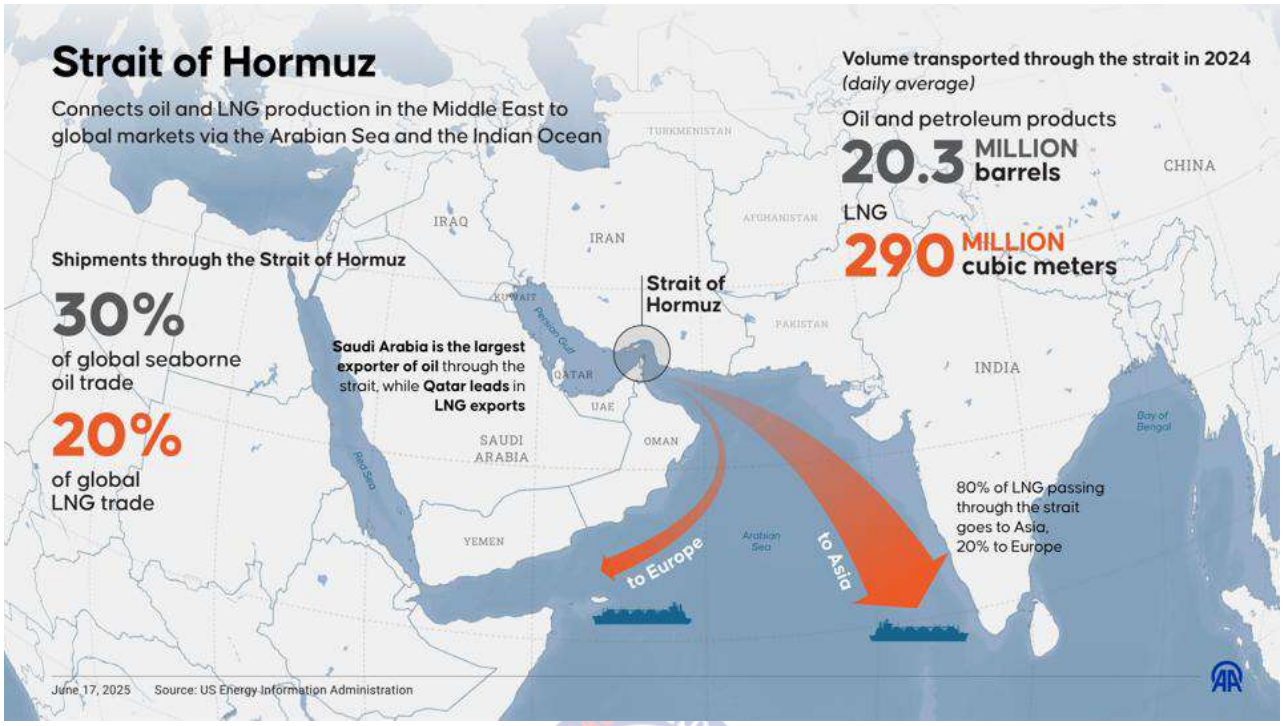

- **Shipping, insurance, and global logistics disruption:**
  - Reuters reports **tankers damaged/ablaze, fatalities, and ~150 ships anchored/stranded** near Hormuz due to attacks and transit suspensions.
  - **War-risk insurance repricing** becomes a shock-multiplier: premiums reportedly jumped from **0.2% to 1% of vessel value in 48 hours**, and major P&I insurers moved to cancel/withdraw cover, raising freight costs further.
- **LNG shock, especially for Asia:**
  - Reuters reports LNG benchmarks in **Asia and Europe surged ~35–40%** as Qatar halted output and buyers scrambled for replacements.
  - Even if Europe is less dependent on Gulf crude, it still faces product vulnerabilities.
  - For instance, Reuters cites that the Gulf accounts for about **~45% of Europe's waterborne jet fuel imports**, so aviation fuel can tighten quickly.
- **Financial markets and sectoral stress:**
  - Reuters notes the crisis **rattled global markets**, lifting energy and hurting travel/transport-linked assets (airlines, shipping, tourism).
- **Strategic and geopolitical spillovers":**
  - Multi-theatre escalation increases risks to **bases, ports, and energy infrastructure**.
  - For instance, **Qatar's LNG halt and other disruptions** show how conflict can impair output beyond shipping lanes.

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INDIA-SPECIFIC IMPACT:

- **Crude oil supply risk via Hormuz + price pass-through:**
  - India's exposure is high because **around half of India's total oil imports** (about **2.5–2.7 million bpd**) pass through Hormuz.
  - For instance, India's overall import dependence is **>88%** for crude (so the main vulnerability is not just volumes, but **price**).
  - Even if India manages volumes (diversifying to Russia/US/Africa), the **import bill rises** due to higher benchmark prices + freight + insurance.
- **LPG and LNG are the bigger near-term vulnerabilities than crude:**
  - India imports **~80–85% of its LPG**, mostly sourced from the Gulf and **almost entirely transiting Hormuz**; India also lacks strategic LPG buffers comparable to crude.
  - For instance, about **~60% of India's LNG imports** pass through Hormuz; spot LNG availability is thin, so a prolonged disruption becomes harder to patch with short-notice cargoes.
  - Reuters reports India has **already cut gas supply to industries by ~10–30%** due to expected shortages linked to Qatar's disruption.
- **Macro effects: inflation, rupee pressure, fiscal stress:**
  - Higher crude/LNG prices widen the **current account deficit**, can weaken the **rupee**, and raise **fuel/transport input costs**, complicating inflation management and subsidy/fiscal choices.
- **Food exports: basmati trade shock (payments + shipping + insurance):**
  - Reuters reports **~400,000 tonnes of basmati** stuck (in transit + at ports) as conflict-driven shipping disruption and insurance withdrawal hit Middle East routes; exporters are pausing new deals and considering force majeure.
- **Indian diaspora and consular risk in West Asia:**
  - The Gulf hosts **more than nine million** Indians across GCC countries (as of 2024, per Government data cited), and remittances from the region are material (UAE and Saudi among top sources).
  - Conflict "regionalisation" raises risks of **evacuations, job losses, wage delays, and remittance uncertainty**, especially if airspace/ports face sustained disruption.
- **Strategic options and buffers (India's mitigation angle):**
  - India has near-term buffers in crude: refiner inventories, fuel stocks, and the ability to draw on strategic reserves; it can also pivot sourcing (e.g., Russia/US/W. Africa) though at higher cost.

WAY FORWARD:

Global / regional stabilisation

- **De-escalation channel:** Push for an urgent UN-led (P5 + key Gulf states) deconfliction mechanism to prevent accidental escalation (bases, ports, shipping lanes).
- **Maritime security architecture:** Expand coordinated naval escort, convoy scheduling, and real-time threat sharing for Hormuz/Red Sea; standardise "war-risk" protocols with insurers to reduce panic-driven stoppages.

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- **Energy market stabilisers:** Coordinated **SPR releases** by major consumers (IEA partners + key Asian importers) to smooth price spikes; signal readiness to cap excessive volatility.
- **Protect critical infrastructure:** Joint regional hardening of LNG terminals, desalination plants, pipelines, and power grids; cyber defence coordination as retaliation risk rises.
- **Humanitarian + consular corridors:** Set up protected air/sea corridors for evacuation and essential supplies if airspace closures widen.

India-specific policy response

Energy security:

- **Use buffers smartly:** Calibrated use of **strategic petroleum reserves** + refiner inventories to avoid sudden domestic price shocks.
- **Diversify quickly, lock volumes:** Increase long-term term contracts and spot sourcing from **Russia/US/West Africa/Latin America**, with flexible destination clauses.
- **LPG and LNG risk management:**
  - Build **strategic LPG buffers** (or at least operational reserves) since LPG is a thin-buffer vulnerability.
  - Secure LNG via **medium-term contracts**, portfolio suppliers, and swap arrangements (Asia–Europe cargo swaps when feasible).
- **Shipping + insurance mitigation:** Government-backed insurance support or sovereign guarantee window for essential cargoes if war-risk premiums spike; prioritise Indian-flag/Indian-controlled logistics where possible.

Macroeconomic stability:

- **Inflation management:** Temporary, targeted excise/VAT smoothing on fuels if needed; protect the poorest via targeted support rather than broad subsidies.
- **External sector resilience:** Maintain forex buffer readiness; manage CAD pressures through calibrated imports, hedging, and timely pass-through rather than abrupt controls.

Trade and food exports (including basmati):

- **Alternative routing + contracting:** Encourage FOB/CIF renegotiation clauses, diversify destinations, and use alternate ports/routes where viable to reduce shipment pile-ups.
- **Payments and risk cover:** Expand export credit + insurance support for high-risk corridors; fast-track dispute resolution and force majeure guidance.

Diaspora protection (West Asia):

- **Evacuation readiness:** Updated country-wise evacuation plans, emergency registration drives, and pre-positioned rapid consular teams.
- **Worker protection:** Engage GCC governments on job continuity, wage protection, and safe shelter arrangements; ensure remittance channels remain functional.

Diplomacy and strategic posture:

- **Balanced outreach:** Maintain channels with **Iran, Israel, US, and GCC** simultaneously; offer facilitation for de-escalation, while clearly prioritising Indian citizens and energy security.
- **Counter-terror and cyber alertness:** Heighten coastal, port, and cyber security due to spillover risks and opportunistic attacks.

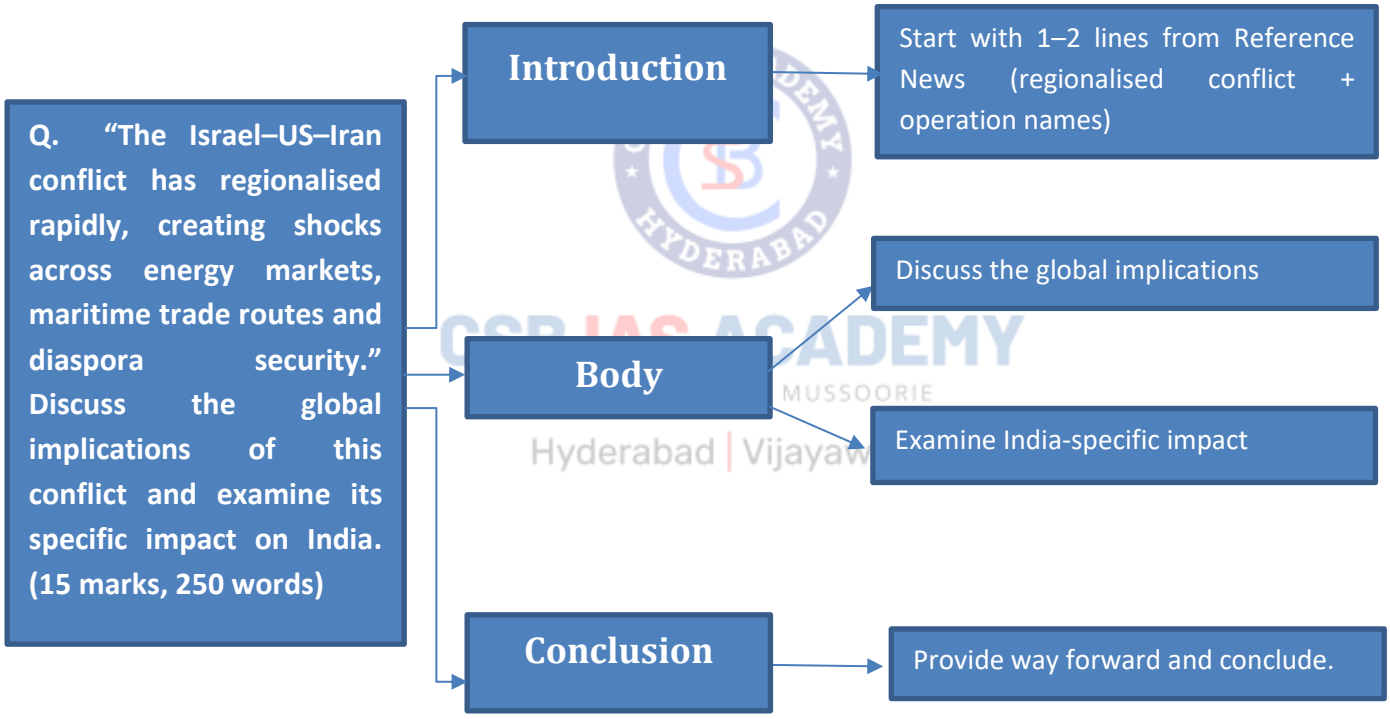
CONCLUSION:

- The conflict's biggest near-term consequences are **energy price volatility, shipping/insurance disruption, and regional spillover**. India can likely manage **short-term crude availability** through diversification and reserves, but remains more exposed on **LPG, LNG, freight costs, and diaspora safety**. The way forward is a mix of **de-escalation diplomacy** and **hard energy-logistics preparedness**, so that a regional war does not become a prolonged economic shock for India.

PRACTICE QUESTION

Q. "The Israel–US–Iran conflict has regionalised rapidly, creating shocks across energy markets, maritime trade routes and diaspora security." Discuss the global implications of this conflict and examine its specific impact on India. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The joint **US–Israel strikes on Iran** triggered rapid **regionalisation** of the conflict, with Iran retaliating not only against Israel but also against **US-linked targets across Gulf Arab states**. Reuters reports the US operation as **Operation Epic Fury**, Israel's as **Operation Roaring Lion**, and Iran's response as **Operation True Promise 4**.

Global implications:

1) Energy shock and inflation transmission

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- **Risk premium** in crude rises due to Hormuz uncertainty, pushing up fuel, freight and input costs.
- Spillovers into **aviation fuel, petrochemicals, fertilisers** → cost-push inflation globally.

2) Shipping, insurance and trade disruption

- War-risk insurance spikes, rerouting/anchoring increases delays and freight rates.
- Supply chains face uncertainty (energy + container cargo), hurting trade-dependent economies.

3) LNG volatility and power-sector stress

- Tight LNG spot market amplifies price spikes, affecting **power tariffs** and industrial output, especially in Asia.

4) Financial market and geopolitical spillovers

- Risk-off sentiment, higher import bills for oil importers, and heightened risks to ports, bases and energy infrastructure.

India-specific impact:

1) Crude oil exposure: price more than volume

- About **half of India's oil imports (2.5–2.7 mbpd)** transit Hormuz; **>88%** import dependence means higher prices quickly raise the **import bill**.

2) LPG and LNG: higher disruption sensitivity

- India imports **~80–85% LPG** and **~60% LNG** is Hormuz-linked; spot replacement is thin → potential supply stress and higher domestic costs.

3) Inflation + fiscal pressures

- Costlier fuel raises logistics and food inflation; forces tough choices on excise/VAT, subsidies, and fiscal consolidation.

4) External sector and currency risks

- Higher energy bill worsens **CAD**, pressures the **rupee**, and increases hedging costs for firms.

5) Trade and food exports

- Gulf disruption affects shipments/payments/insurance for exports (e.g., basmati cargo delays), reducing realisations and raising contract risk.

6) Diaspora and remittances

- **~9–10 million Indians in West Asia** face evacuation, job disruption, wage delays, and remittance uncertainty if conflict spreads.

7) Strategic-security spillovers

- Heightened risks of terrorism/cyber attacks; need tighter coastal, port, aviation and cyber vigilance.

8) Diplomacy and strategic autonomy test

- India must balance ties with **Iran, Israel, US and GCC** while ensuring energy continuity and citizen safety.

Way forward:

Global / regional

- **Ceasefire + deconfliction** (UN + key Gulf states) to prevent attacks on shipping/bases.
- **Maritime security**: convoy/escort coordination, shared ISR, mine-countermeasure readiness in chokepoints.

- **Energy stabilisation**: coordinated **SPR releases**, emergency fuel-sharing and transparent signalling to calm markets.
- **Cyber cooperation** to protect grids, refineries, ports and payment systems.

India

- **Activate buffers**: calibrated SPR drawdown + refiner inventory management; avoid panic buying.
- **Diversify supplies fast**: increase term/spot sourcing from Russia/US/Africa/LatAm; use swaps and flexible-destination contracts.
- **LPG/LNG resilience**: operational reserves for LPG, portfolio gas contracts, LNG swap deals, demand prioritisation framework (power vs fertiliser vs industry).
- **Freight/insurance support**: temporary sovereign-backed war-risk cover for critical cargoes; strengthen Indian shipping/chartering capacity.
- **Diaspora protection**: registration, helplines, pre-positioned rapid response teams, evacuation corridors, coordination with GCC for shelters/wage protection.
- **Diplomacy**: balanced outreach to Iran–Israel–US–GCC; keep trade/energy channels open while safeguarding nationals.

The conflict's global fallout is concentrated in **energy, logistics and risk sentiment**, while India faces amplified exposure via **Hormuz-linked energy imports, LPG/LNG fragility, and diaspora concentration**. A mix of **de-escalation diplomacy** and **hard energy-logistics preparedness** is essential to prevent a regional war from becoming a prolonged economic shock.

18. INDIA-CANADA RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations > India and Global Powers > India-Canada Relations

REFERENCE NEWS:

- Recently, Prime Minister Narendra Modi and Canadian Prime Minister Mark Carney held bilateral talks in New Delhi.
- The meeting focused on strengthening cooperation and reviewing progress under the India-Canada Strategic Partnership, as **both countries seek to diversify partnerships amid global disruptions** linked to US President Donald Trump. In this context, **India's recent outreach to the EU and key European partners** also frames the quiet reset with Canada.
- This reset comes after ties hit a low in September 2023 **when Canada accused India of involvement in the killing of Canadian citizen Hardeep Singh Nijjar.**
    - **Hardeep Singh Nijjar** was a **Canada-based Sikh separatist (Khalistan movement)** and gurdwara leader in Surrey, British Columbia, who was shot dead on June 18, 2023, after which Canada alleged **possible links to Indian agents**, triggering the 2023 India–Canada diplomatic crisis.
    - The **Khalistan movement** is a Sikh separatist movement seeking to create a **homeland for Sikhs** by establishing a sovereign state, called Khalistan (Land of the Khalsa).The proposed state would consist of land that currently forms **Punjab region in India and Pakistan.**

HIGHLIGHTS OF CANADIAN PM MARK CARNEY'S INDIA VISIT:

- **Landmark civil nuclear energy outcome**
    - India and Canada concluded a **landmark civil nuclear energy package**, under which **Canada will supply uranium to India** on a long-term basis, and both sides agreed to collaborate on next-generation nuclear technologies, including **Small Modular Reactors (SMRs)** and advanced reactors.

      Small Modular Reactors (SMRs) are compact nuclear power units (typically up to ~300 MW) that are factory-built and can be deployed faster and more flexibly than large reactors.
- **Trade track revived: CEPA:**
    - Both India and Canada finalised the Terms of Reference for the **Comprehensive Economic Partnership Agreement (CEPA)** and set an ambitious goal **of doubling two-way trade by 2030.**
- **Critical minerals agreement:**
    - Signed cooperation pact in **critical minerals**, supporting India's clean-tech/EV/manufacturing supply chains.
- **Defence and maritime cooperation:**
    - Commitment to enhance **defence industry cooperation**.

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- Plan to strengthen **Maritime Domain Awareness** collaboration.

- **Counter-terror cooperation:**
  - Shared emphasis on combating **terrorism, extremism and radicalisation**; agreed closer cooperation is vital for global stability.
- **West Asia discussion:**
  - Leaders discussed the deteriorating security situation; India reiterated support for **dialogue and diplomacy** and focus on **safety of Indian citizens** in the region.
- **Shared values framing:**
  - Both highlighted **democratic values, diversity**, and a joint "well-being of humanity" narrative as the basis for the reset.

BACKGROUND OF INDIA - CANADA RELATIONS:

- Canada and India have longstanding bilateral relations rooted in **democracy, pluralism and strong people-to-people ties**, including a large Indian-origin community in Canada.
- In the **early–mid 20th century**, Canada emerged as a destination for Indian migrants, laying the base for enduring diaspora linkages.
- During the **Cold War**, leadership-level engagement (including the Nehru-era) supported development cooperation; Canada became a significant source of assistance for India through **food aid, project financing and technical support**, including under the **Colombo Plan**.
- In the nuclear domain, bilateral cooperation institutionalised over time: Canada–India nuclear cooperation frameworks enabled Canadian uranium trade with India after agreements entered into force in the 2010s.
- Relations faced major setbacks after India's **1974 nuclear test** and later security concerns (including the **Air India Flight 182 bombing, 1985**), which contributed to long phases of mistrust.
- A renewed phase began post–Cold War and post–1990s reforms; ties were **elevated to a Strategic Partnership in 2015**, with both sides also pushing economic and institutional cooperation.
- The relationship again hit a severe low in **September 2023**, after Canada alleged Indian involvement in the killing of Canadian Sikh activist **Hardeep Singh Nijjar**, leading to a prolonged diplomatic chill (including expulsions and visa disruptions).
- A reset gathered pace after Modi attended the **G7 in Canada in 2025 at Carney's invitation**, signalling political re-engagement.
- The reset culminated in **Carney's New Delhi visit (March 2026)**

AREAS OF COOPERATION:

- **Political:**

  At the Ministerial level, Canada and India enjoy a strategic partnership underpinned by Ministerial Dialogues on foreign policy, trade and investment, finance, energy.
  - At the official level, there are regular working groups that focus on counter-terrorism, security, agriculture, education, science and technology.
  - India and Canada have also established a **Track 1.5 Dialogue** on involving experts, government officials and business leaders from both sides to explore the possibility of future cooperation.

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- **Trade:**
  - **In 2023 (January – October), bilateral trade in goods** amounted to USD 7.65 billion (India's exports: USD 4.70 billion and India's imports: USD 2.95 billion).
  - Bilateral trade remains below potential; however, the political push has sharpened after the reset, with both leaders **set an ambitious goal of doubling two-way trade by 2030.**
  - In March 2026, India and Canada **finalised the Terms of Reference for the Comprehensive Economic Partnership Agreement (CEPA),** and both sides expressed intent to conclude the agreement by end-2026.
  - Canada is the **fourth largest source of tourists** in India (based on 2021 figures)
- **Investment**:
  - Canada accounts for **0.56%** of the total FDI in India according to the Indian Department for Promotion of Industry and Internal Trade (DPIIT)
  - India has also emerged as an attractive investment **destination for several Canadian pension funds.**
- **Developmental assistance:**
  - **Global Affairs Canada** provide development assistance to India through Indian and Canadian Non-Governmental Organizations, and through multilateral mechanisms such as the World Bank and the Asian Development Bank.
- **Strategic:**
  - In late 2022, **Canada released an Indo-Pacific strategy which called India a "crucial partner"** and termed China an "increasingly disruptive" global power. The strategy states that Canada will seek new opportunities to partner and engage in dialogue with India in areas of common interest.
  - The strategy also contains funding commitment on infrastructure projects through the US-led **G7 Partnership for Global Infrastructure and Investment,** an **enhanced military presence including a third frigate in the Indian Ocean**, and expanded participation in regional military exercises.
- **Multilateral**:
  - India and Canada collaborate closely in international fora, particularly through the UN, Commonwealth and G-20.
- **Security and defence:**
  - Defence ties have been expanding with **mutual ship visits**. There is also robust cooperation on counter terrorism issues particularly through the framework of **the Joint Working Group (JWG) on Counter Terrorism**.
  - The security cooperation was further enhanced with the **Framework for Cooperation between India and Canada on Countering Terrorism and Violent Extremism** signed in February 2018.
  - **Counter-terrorism engagement** continues through institutional channels, and in March 2026, both leaders reiterated cooperation against **terrorism, extremism and radicalisation** as shared challenges.
- **Science and technology:**
  - **Nuclear Cooperation:**

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- **A Nuclear Cooperation Agreement (NCA) with Canada was signed in June 2010 and came into force in September 2013**.
- In 2015, Department of Atomic Energy (DAE) and Canada's Cameco Corporation signed an **agreement for supply of uranium ore concentrate** to India in 2015-2020.
- Recently (March 2026), India and Canada signed **a $2.6 billion uranium supply deal** as part of long-term civil nuclear energy cooperation.
- Both sides also agreed to work together on **Small Modular Reactors (SMRs) and advanced reactors**, indicating cooperation beyond fuel supply into next-generation nuclear technology.

- **Space:**
  - ISRO and Canadian Space Agency have signed MOUs in the field of exploration and utilisation of outer space.
  - ISRO and ANTRIX, the Commercial arm of ISRO, have launched several Canadian satellites. Eg: Canada's first LEO satellite was launched by the PSLV from Sriharikota in 2018.
- **Arctic research:** Department of Earth Science and Polar Canada have started a programme for exchange of knowledge and scientific research on Cold Climate (Arctic) Studies.
- **Critical Minerals Cooperation:** India and Canada signed an agreement on critical minerals cooperation, **aligning Canada's resource strengths with India's EV, battery, and manufacturing supply-chain requirements.**

- **Agriculture:**
  - The **bilateral MoU** on agriculture cooperation was signed at the federal level in 2009. A **Joint Working Group for Pulses** has been set up separately.
- **Energy Cooperation:**
  - In February 2018, the scope of the Energy Dialogue was expanded to additionally include electricity, energy efficiency and renewable energy.
  - **India Oil Corporation has a 10% participating interest** in a Liquid Natural Gas project in British Columbia.
  - Both sides have **emphasised broader clean-energy collaboration**; Canada's March 2026 announcements include stronger clean-energy engagement and parallel initiatives in allied clean domains.
- **Capacity building:**
  - **Education** is a key area of mutual interest. Recently, **India became the top source of foreign students studying in Canada**.
  - **Every 7th Indian student studying abroad is in Canada** according to data maintained by the Ministry of External Affairs.
  - **Canada's Foreign Service Institute (CFSI) has undertaken training initiatives to Indian diplomats** at FSI, New Delhi on Bilateral & Multilateral Negotiation and Diplomacy and Global Affairs including Canada's Foreign Policy Approach.
- **Cultural:**
  - Canada is home to **5.26% of overseas Indians** according to the data available from the Ministry of External Affairs

- Canada is home to one of the largest communities of Indian origin, with approximately **4% of Canadians being of Indian heritage**.
- Canada was the first western democratic nation to **celebrate Diwali officially in Parliament**. Diwali has been celebrated on the Parliament Hill since 1997.
- There are institutions like the **Shastri Indo-Canadian Institute (SICI)** for fostering education and cultural cooperation and collaboration between India and Canada.

- **Diplomatic**:
  - In India, **Canada is represented by the High Commission of Canada in New Delhi** beside Consulates General in Bengaluru, Chandigarh and Mumbai.
  - India is represented in Canada by a **High Commission in Ottawa and by consulates in Toronto and Vancouver**.
- **Connectivity**:
  - There are direct flights between Indian and Canadian cities. Indian and Canadian carriers have also expressed interest in expanding their business in the other country.
  - **India and Canada have recently finalised an expanded air transport agreement**. This could further boost connectivity between the two nations.

AREAS OF CONCERN:

- **Canadian tolerance for separatists:**
  - India has repeatedly flagged the operating space available to **pro-Khalistan elements in Canada** and views Canada's perceived tolerance of separatist activism as a challenge to India's sovereignty and national integrity.
  - India has also raised concerns about limited progress on action against individuals accused of extremism/terror financing.
- **Rising violence and hate incidents:**
  - India has expressed concern over **vandalism of temples, hate crimes, and sectarian violence** affecting Indian nationals and the Indian-origin community in Canada, which adds to trust deficits and public pressure on both governments.
- **Diplomatic trust deficit:**
  - Bilateral trust has been strained by repeated political flare-ups and weak crisis-management coordination.
  - For example, **2018 Trudeau India visit** became diplomatically awkward after an invitation to **Jaspal Atwal** (a convicted Khalistani extremist) surfaced, reinforcing India's perception of Ottawa's poor political judgement on sensitive issues.
- **Lack of concern for Indian sensitivities / interference in internal affairs:**
  - India has objected to Canadian leaders commenting on India's internal matters, seeing it as interference.
  - For example, in **December 2020**, Trudeau's remarks on the farmers' protests were termed by India as **"unacceptable interference in our internal affairs,"** and the Canadian High Commissioner was summoned.

- **Diplomatic crisis of 2023 and continuing security shadow:**
  - Relations hit a low in **September 2023** after Canada's allegations linked to the **Nijjar killing**, triggering a sharp diplomatic chill and making security issues a persistent shadow even when economic engagement resumes.
- **Suspended / stalled trade negotiations:**
  - The **CEPA/FTA track** has stalled multiple times due to political tensions; in **September 2023**, India froze trade talks and Canada later confirmed the pause, including cancelling a planned trade mission to India.
  - Even when negotiations restart, friction points remain: India seeks greater flexibility on **movement of professionals**, while Canada seeks deeper concessions in **agri-market access** (notably fruits/vegetables), which India resists due to farm-sector vulnerability.
- **Low levels of trade and under-realised potential:**
  - Despite strong complementarity, Canada remains a relatively **smaller economic partner for India compared to other North American economies**; overall trade and investment flows remain below potential and are often disrupted by politics.
  - Even where trade touched about **~$9 billion (2022–23)**, the relationship has not achieved strategic economic alignment at the level seen in India's ties with the US or EU.
- **Lack of extradition and legal cooperation:**
  - India has repeatedly raised concerns over limited progress on **extradition requests** and legal cooperation regarding **individuals it identifies as criminals/extremists residing in Canada**, contributing to persistent security mistrust.
- **Student and visa disruptions:**
  - Political tensions have spilled into mobility and education: in late **2023**, visa delays and uncertainty affected Indian students, and India's brief suspension of visa services in Canada created concern among the large Indian student population there.
- **Limited strategic and defence cooperation :**
  - Unlike India's deepening strategic partnerships with the US, France, Japan or Australia, **India–Canada cooperation has lacked comparable defence depth**. No strong institutionalised **2+2** type mechanism and limited joint strategic signalling.
  - Divergences on global alignments (including China and other geopolitical issues) have also constrained security cooperation.
- **China factor:**
  - India has perceived an inconsistency where Canada criticises some Indian positions while maintaining functional engagement with China due to trade and other pragmatic considerations, complicating strategic trust-building with India.

WAY FORWARD:

- **Ring-fence security issues, but institutionalise solutions:**
  - Operationalise a **dedicated India–Canada security track** with clear deliverables on **terror financing, violent extremism, radicalisation, and organised crime** (separate from trade track, but time-bound reviews).

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- Create **real-time law-enforcement coordination** (liaison officers / joint tasking / faster MLAT processing) for cases involving extremist violence, hate crimes, and transnational networks.

- **Build a credible framework on Khalistan-linked violence without politicisation**
  - Canada should apply **consistent domestic law** against incitement, threats, and violence (not speech policing), while India shares **actionable, prosecutable evidence** rather than broad dossiers.
  - Jointly protect community harmony: coordinated steps on **temple security, hate-crime monitoring, and diaspora outreach** to prevent polarisation.
- **Fast-track CEPA with "early harvest" modules**
  - Use the **Terms of Reference finalised in March 2026** to push a **phased CEPA**:
    - Early harvest on **trade facilitation, mutual recognition of standards, services, digital trade, and mobility pathways**.
    - Later phase on the most contentious items (agri market access, sensitive tariffs).
  - Address the key deadlock via **calibrated mobility for professionals** (India) and **selective, safeguarded agri concessions** (Canada) using TRQs/safeguards to protect Indian farmers.
- **Convert the nuclear package into a long-term energy partnership**
  - Implement the **long-term uranium supply agreement** quickly with predictable logistics and safeguards.
  - Launch a joint roadmap on **SMRs and advanced reactors**: research tie-ups, regulatory learning, and supply-chain collaboration (materials, safety systems, skilled workforce).
- **Anchor critical minerals cooperation to manufacturing outcomes**
  - Move from MoUs to outcomes: joint projects in **lithium/cobalt/copper value chains**, processing/refining collaboration, and assured offtake for India's **EV and clean-tech** supply chains.
  - Build resilience via **supply-chain transparency, ESG standards, and strategic stockpiles**.
- **Deepen defence and maritime cooperation in practical formats**
  - Start with deliverables: **maritime domain awareness information-sharing**, coast guard coordination, anti-piracy cooperation, and regular port calls.
  - Create a structured mechanism (even if not a full 2+2 immediately): **annual defence–security dialogue** + industry linkage for niche areas (drones, surveillance, cyber).
- **Stabilise students, visas, and people-to-people ties**
  - Set up a **mobility stability protocol**: minimum service assurance for visas/consular needs during political stress.
  - Expand university–industry pipelines and skill partnerships so education remains a **strategic bridge**, not a collateral damage zone.
- **Maintain "mutual respect + non-interference" guardrails**
  - Adopt a clear public-diplomacy code: sensitive domestic issues handled through **quiet channels**, avoiding headline diplomacy that triggers backlash on either side.
  - Regular leader-level contact to prevent crises from spiralling (hotline/rapid consultations).

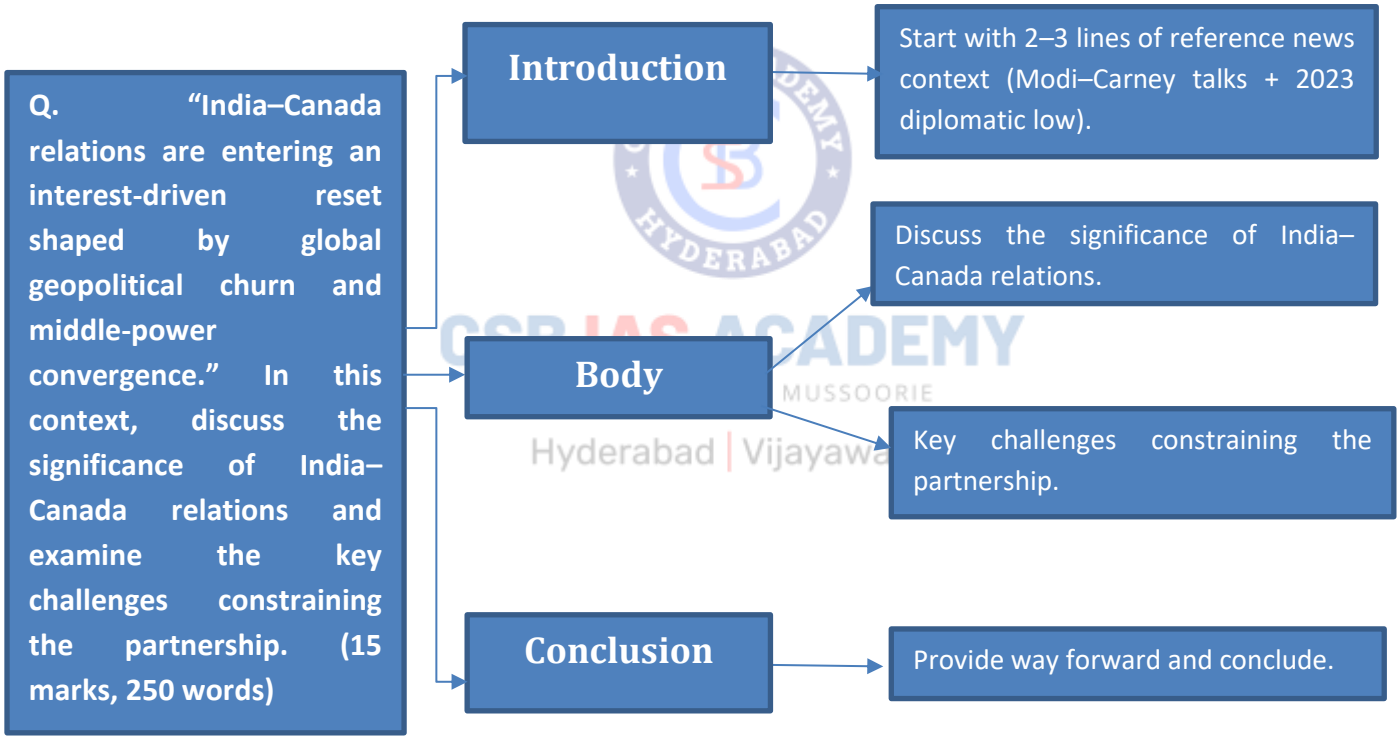
CONCLUSION:

- The March 2026 Modi–Carney reset opens a pragmatic pathway where **security concerns are managed in parallel**, while the partnership is rebuilt on hard interests, **CEPA-led trade expansion, civil nuclear cooperation, critical minerals, and people-to-people ties**. The durability of India–Canada relations will depend on whether both sides can **restore trust** through consistent action on extremism, predictable economic engagement, and diplomatic restraint.

PRACTICE QUESTION

Q. "India–Canada relations are entering an interest-driven reset shaped by global geopolitical churn and middle-power convergence." In this context, discuss the significance of India–Canada relations and examine the key challenges constraining the partnership. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Prime Minister Narendra Modi and Canadian Prime Minister Mark Carney held bilateral talks in New Delhi in March 2026 to **strengthen the India–Canada Strategic Partnership**, including cooperation on **long-term uranium supply, critical minerals and the CEPA roadmap.** Coming after the **September 2023 diplomatic low over the Nijjar killing** allegations, this reset reflects middle-power convergence in a volatile global order and a shared push to diversify partnerships.

Significance of India–Canada Relations:

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1) Strategic and Indo-Pacific value

- Canada's Indo-Pacific Strategy (2022) identifies India as a crucial partner for regional stability and resilient supply chains.
- Maritime cooperation and Maritime Domain Awareness (MDA) support secure sea lanes and Indo-Pacific presence.

2) Energy security and clean transition

- Long-term uranium supply strengthens India's civil nuclear expansion and clean baseload capacity.
- Cooperation on SMRs and advanced reactors opens next-gen nuclear technology collaboration.

3) Critical minerals and manufacturing ecosystem

- Critical minerals cooperation helps India's EV/battery/clean-tech manufacturing by diversifying inputs and lowering supply risks.
- Canada gains strategic leverage by moving from "raw resource supplier" to "reliable partner" in value chains.

4) Trade, investment and growth complementarity

- CEPA Terms of Reference (March 2026) and the goal of doubling two-way trade by 2030 signal intent to unlock under-traded potential.
- Canadian pension funds and institutional capital can support India's infrastructure, energy and manufacturing scale-up.

5) People-to-people depth

- Strong diaspora and large student flows create societal ballast, sustaining ties even when politics turns volatile.
- Education and skilled mobility expand services trade and innovation linkages.

6) Multilateral convergence

- Cooperation in UN, G20 and Commonwealth strengthens rule-making coordination on climate, development, digital governance and reforms.

Key Challenges Constraining the Partnership:

1) Khalistan extremism and sovereignty concerns

- India views permissive space for pro-Khalistan elements as a threat to national integrity and internal security.
- Limited progress on action against individuals accused of extremism/terror financing sustains mistrust.

2) Diplomatic trust deficit and crisis spirals

- Repeated political flare-ups and weak crisis-management coordination destabilise ties (2018 Atwal episode; 2023 crisis).

3) Sensitivity gap and perceived interference

- Canadian political statements on India's domestic issues (e.g., farmers' protests in 2020) are seen as interference.

4) Trade held hostage by politics

- CEPA/FTA talks have stalled repeatedly; India froze trade talks in September 2023 amid tensions.

- Negotiation deadlocks persist: mobility of professionals (India) vs agri market access demands (Canada).

5) Hate incidents and safety concerns

- Vandalism of temples, hate crimes and sectarian incidents raise public pressure and worsen political optics.

6) Limited strategic/defence institutionalisation

- Compared to India's major strategic partners, India–Canada lacks robust defence frameworks and regular high-end exercises.

7) Divergence on China and global alignments

- Differing approaches to China and broader geopolitics complicate trust and security coordination.

Way Forward:

- **Ring-fence security:** run a dedicated security track with timelines on terror financing, extremism and organised crime.
- **Evidence-led cooperation**: faster MLAT processes, liaison channels, and prosecutable information-sharing on violent networks.
- **Protect diaspora harmony:** coordinated action on hate crimes, temple security and community outreach.
- **Implement March 2026 deliverables:** fast execution of uranium supply + joint roadmap on SMRs/advanced reactors.
- **Make critical minerals outcome-based:** joint projects, processing/refining collaboration, assured offtake for India's EV supply chain.
- **Upgrade defence cooperation:** annual defence–security dialogue + MDA information-sharing, coast guard and anti-piracy cooperation.
- **Stabilise visas/students:** minimum consular service assurance during political stress; predictable student mobility rules.

The March 2026 Modi–Carney engagement signals a pragmatic middle-power reset driven by converging interests in energy, critical minerals, trade and Indo-Pacific stability. Its success will depend on **rebuilding trust through consistent action on extremism, insulating economic cooperation from political shocks, and sustaining people-to-people ties as the long-term anchor.**

GENERAL STUDIES-III

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19. INDIA'S REVISED GDP ESTIMATES AND THE NEW MEASUREMENT FRAMEWORK

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Basic Economics

REFERENCE NEWS:

India has introduced a **revised GDP series with base year 2022–23**, replacing the earlier **2011–12 base year**, to better reflect the structural changes in the economy and improve the accuracy of national income estimates. The revision integrates **new data sources, improved methodologies, and modern statistical frameworks**, strengthening the credibility of India's economic statistics.

Growth Trends and Economic Performance

- **Real GDP growth for FY 2025–26 is estimated at 7.6%**, higher than **7.1% in FY 2024–25**.
- **Nominal GDP is projected to grow by 8.6% in FY 2025–26**.
- Manufacturing has recorded **double-digit growth** in FY 2023–24 and FY 2025–26.
- Secondary and tertiary sectors have grown **above 9%**.
- The **trade, repair, hotels, transport, communication and broadcasting sector** recorded **10.1% growth**.
- Quarterly GDP in **Q3 FY 2025–26 reached ₹84.54 lakh crore**, growing **7.8%**.

These trends indicate the **resilience and sustained momentum of the Indian economy**.

Revision of GDP Base Year

- The base year has been updated from **2011–12 to 2022–23**.
- **Reasons for Rebasing:**
  - To reflect **structural changes in the economy**, including digital services and renewable energy.
  - To incorporate **better and more recent data sources**.
  - To exclude **pandemic-distorted years (2019–2021)** and use a normal reference year.
  - To align with **international statistical standards**.
  - Rebasing helps ensure **more accurate measurement of real economic growth**.

New Data Sources Used in GDP Estimation: The revised GDP series incorporates improved and real-time data sources:

- **ASUSE (Annual Survey of Unincorporated Sector Enterprises)**
- **PLFS (Periodic Labour Force Survey)**
- **GST data** for manufacturing and services sector estimation
- **e-Vahan database** for road transport consumption
- **Public Financial Management System (PFMS)** for government expenditure
- These sources improve **coverage of informal, services, and digital sectors**.

Methodological Improvements

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- Several methodological refinements enhance the reliability of GDP estimates.
- **Benchmark-Indicator Method** for quarterly GDP estimation using high-frequency data.
- **Double deflation technique** in manufacturing and agriculture.
- **Granular deflators** using over **260 item-level CPI indices**.
- **Integration of Supply and Use Tables (SUT)** to reconcile production and expenditure estimates.
- **Better classification of multi-activity companies** using MCA filings
- These reforms improve **consistency, transparency, and sectoral representation**.

Improved Coverage of Emerging Economic Activities: The revised framework better captures **new and previously under-measured sectors**.

- Inclusion of **gig economy, digital platforms, and informal enterprises**.
- Coverage of **hired domestic workers** under household services.
- Improved estimation of **Private Final Consumption Expenditure (PFCE)** using updated surveys.

Improvements in State-Level Economic Measurement

- The **NSO provides guidelines for Gross State Domestic Product (GSDP)** estimation.
- States will revise their GSDP series to align with the **new base year and methodology**.
- Improvements include **greater use of state-level data and reduced reliance on proxy indicators**.

Strengthening India's Statistical System: The revision forms part of broader statistical modernization, including:

- **CPI base year revision to 2024**
- **IIP base year revision to 2022–23**
- Planned introduction of **Producer Price Index (PPI)**
- Alignment with **System of National Accounts (SNA 2008)** and future **SNA 2025 standards**
- Compliance with the **IMF's Special Data Dissemination Standard (SDDS)**.

SIGNIFICANCE OF REVISING INDIA'S GDP BASE YEAR TO 2022–23:

- **Better Reflection of Structural Changes in the Economy:** India's economy has undergone significant transformation over the last decade, including the expansion of **digital services, renewable energy, gig economy, and platform-based activities**.

  - The new GDP series captures **digital and platform economy activities**, including unincorporated enterprises and gig workers.
  - Emerging sectors such as **renewable energy and technology services** are better represented.
  - Manufacturing recorded **double-digit growth in FY 2023–24 and FY 2025–26**, highlighting structural shifts in the economy.

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- **Improved Accuracy through Updated Data Sources:** The revised series integrates **new surveys and administrative datasets**, reducing dependence on proxy indicators. Key data sources include
  - **Annual Survey of Unincorporated Sector Enterprises (ASUSE), Periodic Labour Force Survey (PLFS), GST network data, Public Financial Management System (PFMS), e-Vahan vehicle database**
  - These sources improve **measurement of the informal sector, services sector, and household consumption**.
- **Strengthening Measurement of Informal and Household Sector:** Earlier GDP estimates relied heavily on proxies for the informal sector. The new series uses **actual survey-based estimates**.
  - ASUSE and PLFS provide **direct annual data on unincorporated enterprises and employment**.
  - This improves estimation of **household production and informal economic activity**, which forms a significant part of India's economy.
- **Improved Methodological Rigor and Internal Consistency:** The new GDP framework introduces **advanced statistical techniques**. Key improvements include:
  - **Double deflation method** in manufacturing and agriculture.
  - Integration of **Supply and Use Tables (SUT)** to reconcile production and expenditure estimates.
  - More granular deflators using **260+ CPI item indices**.
  - These changes reduce **statistical discrepancies and improve reliability of national accounts**.
- **Enhanced Policy Planning and Evidence-Based Decision Making:** Accurate GDP measurement is essential for **economic planning, fiscal policy, and investment decisions**.
  - Real GDP growth for **FY 2025–26 is estimated at 7.6%**, compared with **7.1% in FY 2024–25**, indicating strong economic momentum.
  - Policymakers rely on GDP trends for **budget planning, sectoral investments, and macroeconomic policy formulation**.
- **Improved Global Comparability and Statistical Credibility:** The revised GDP series aligns with **international statistical standards**, enhancing credibility of India's data.
  - Follows the **System of National Accounts (SNA) 2008**.
  - Consistent with the **IMF's Quarterly National Accounts Manual (2017)**.
  - India adheres to the **IMF's Special Data Dissemination Standard (SDDS)**
  - This improves **global investor confidence and comparability with other economies**.
- **Better Estimation of State Economies (GSDP):** The revision also improves **Gross State Domestic Product (GSDP)** estimation.
  - Greater use of **state-level economic data**.
  - Reduced reliance on proxy indicators and allocation methods.
  - Improved consistency between **national and state accounts**.
  - This strengthens **fiscal planning and regional economic analysis**.

HOW GDP ESTIMATES IMPACT COMMON CITIZENS?

- **Employment Opportunities and Job Creation:** Higher GDP growth usually signals expanding economic activity, which generates employment opportunities. When sectors like **manufacturing, trade, and services grow**, businesses expand and hire more workers.
    - For instance, strong growth in the **manufacturing sector and services sector (above 9% growth in FY 2025–26)** indicates potential job creation in industries such as logistics, retail, and tourism. Thus, GDP growth can translate into **better employment prospects for citizens**.
- **Income Levels and Living Standards:** GDP growth is often associated with **higher incomes and improved living standards**. As economic output increases, wages and profits tend to rise. Higher incomes allow households to spend more on **healthcare, education, housing, and consumption goods**.
- **Government Revenue and Welfare Spending:** GDP estimates affect government **tax revenues and fiscal planning**. Higher GDP leads to higher **tax collections (income tax, GST, corporate tax)**. This enables governments to spend more on **welfare schemes, infrastructure, healthcare, and education**.
    - For instance, schemes such as **PMAY, PM-KISAN, and MGNREGA** depend partly on the fiscal capacity generated by economic growth.
- **Inflation and Cost of Living:** GDP estimates influence **monetary policy decisions** by the Reserve Bank of India (RBI). If the economy grows too rapidly, it may create **inflationary pressures**. The RBI may adjust **interest rates** to control inflation. Thus, GDP growth indirectly affects **prices of goods and services and the cost of living**.
- **Infrastructure Development and Public Services:** A growing economy provides more resources for **infrastructure investment**. Governments invest in **roads, railways, digital infrastructure, healthcare, and education**. Infrastructure development improves **connectivity, productivity, and quality of life** for citizens.
    - For example, sustained economic growth has enabled large-scale investments in **transport corridors, digital connectivity, and renewable energy**.
- **Investment and Business Opportunities:** GDP growth influences **domestic and foreign investment decisions**. Strong growth signals a **stable and expanding market**, attracting investors. Increased investment creates **new businesses, startups, and employment opportunities**.
    - India's strong GDP growth trajectory has helped attract **foreign direct investment (FDI) and private sector expansion**.
- **Fiscal Indicators Affect Public Borrowing and Taxes:** GDP size is used to calculate **fiscal deficit and debt-to-GDP ratios**. If GDP estimates change, the **fiscal deficit ratio and debt ratios may change**, influencing government borrowing and taxation policies. This can indirectly affect **tax burdens and public expenditure on welfare programs**.

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CHALLENGES OF THE NEW GDP SERIES (BASE YEAR 2022–23):

- **Measurement Challenges in the Informal Sector:** India's economy still has a **large informal and unorganised sector**, which is difficult to capture accurately. Many informal enterprises do not maintain proper accounts or report data regularly.
  - The informal sector contributes **around 45–50% of India's GDP and nearly 80–85% of employment**, making precise estimation difficult.
- **Methodological Complexity:** The revised GDP series introduces advanced statistical techniques such as **double deflation, Supply and Use Tables (SUT) framework,** use of **multiple high-frequency administrative datasets.**
  - While these improve accuracy, they also increase **technical complexity in compilation and interpretation**. Integrating over **260 item-level CPI deflators** and multiple datasets requires sophisticated statistical capacity.
- **Data Quality and Reliability Issues:** The new series relies heavily on **administrative data sources** such as **GST network, PFMS, e-Vahan database, MCA-21 corporate filings.** However, administrative data may suffer from **reporting errors, delays, or inconsistencies**, affecting GDP estimates. GST data may fluctuate due to compliance issues, tax evasion, or policy changes.
- **Limited Statistical Capacity at State Level:** Accurate estimation of **Gross State Domestic Product (GSDP)** depends on state statistical systems. Many states have **limited technical capacity and outdated statistical infrastructure**. Differences in methodologies across states may affect comparability. State **Directorates of Economics and Statistics** often face shortages of trained statisticians and modern data systems.
- **Back-Series Data and Historical Comparability Issues:** After revising the base year, historical GDP data must be recalculated to maintain comparability. Preparing **back-series data** requires re-estimating GDP using new methodologies. Delays in back-series publication make **long-term economic analysis difficult**. Back-series data for the revised GDP framework are expected only by **December 2026**.
- **Impact on Fiscal Indicators and Policy Target:** The revised series has reduced nominal GDP estimates by about **3–4% for recent years**. This affects key macroeconomic indicators such as **Fiscal deficit-to-GDP ratio, Debt-to-GDP ratio, borrowing requirements.**
  - The fiscal deficit target of **4.4% for FY 2025–26 rises to about 4.5%** under the new series.
- **Underrepresentation of Emerging and Digital Activities:** Although the new series improves coverage of the **digital and gig economy**, measurement challenges remain. Many digital services operate through **cross-border platforms or informal online activities**. Data availability on digital transactions and platform workers remains limited.
- **Transition to Future Global Accounting Standards:** The global statistical framework is moving towards **System of National Accounts (SNA) 2025**, expected to be adopted around **2029–30**. India will need another major revision of its GDP framework to align with these updated global standards. This will require **significant statistical and institutional upgrades**.

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MEASURES TO IMPROVE AND ADVANCE INDIA'S GDP MEASUREMENT FRAMEWORK:

- **Introduce Producer Price Index (PPI) for Better Price Measurement:** India currently relies primarily on **Consumer Price Index (CPI)** and **Wholesale Price Index (WPI)** for deflation.
  - A **Producer Price Index (PPI)** would better capture price changes faced by producers and improve real GDP estimation.
  - The **Working Group on PPI chaired by Prof. B. N. Goldar (2014)** recommended introducing PPI to align India with international statistical practices.
  - Countries like the **USA, UK, and Japan** use PPI alongside CPI for national income calculations.
- **Strengthen Measurement of the Informal Sector:** Expand surveys such as **Annual Survey of Unincorporated Sector Enterprises (ASUSE)** and **Periodic Labour Force Survey (PLFS)**. Integrate **GST, EPFO, digital payments, and administrative databases** to capture informal economic activities.
  - The **Rangarajan Committee on National Statistical Commission (2001)** emphasised improving measurement of informal sector output.
- **Improve Real-Time Data Integration:** Greater use of **administrative and digital data systems** can improve timeliness and accuracy. Advanced economies use **real-time economic indicators and big data analytics** to produce high-frequency national accounts.
- **Strengthen State-Level Statistical Capacity:** Variation in statistical capacity across states affects **Gross State Domestic Product (GSDP)** estimation. The **National Statistical Commission (NSC)** has repeatedly emphasised strengthening state statistical systems.
- **Expand Coverage of Emerging Economic Activities:** GDP estimates must better capture new economic sectors such as **Digital economy, platform and gig economy, green and renewable energy sectors.** Countries following the **OECD digital economy framework** incorporate digital services and platform activities into national accounts.
- **Adopt Advanced Statistical Frameworks and Global Standards:** India currently follows the **System of National Accounts (SNA) 2008**. The **UN Statistical Commission** recommends regular updates of national accounting frameworks to maintain comparability.
- **Improve Transparency and Documentation of Methods:** Transparency strengthens public trust in official statistics. Publish detailed **"Sources and Methods" documentation** for GDP estimation. Countries such as **Canada and Australia** regularly release detailed statistical methodologies and revisions.
- **Reduce Large-Firm Bias in Data Sources:** Heavy reliance on **corporate filings (MCA-21 data)** may overstate the performance of large firms while underrepresenting MSMEs.

PRACTICE QUESTION

Q. India has revised the base year of its GDP series from 2011–12 to 2022–23. Discuss the implications. (10 marks, 150 words)

APPROACH

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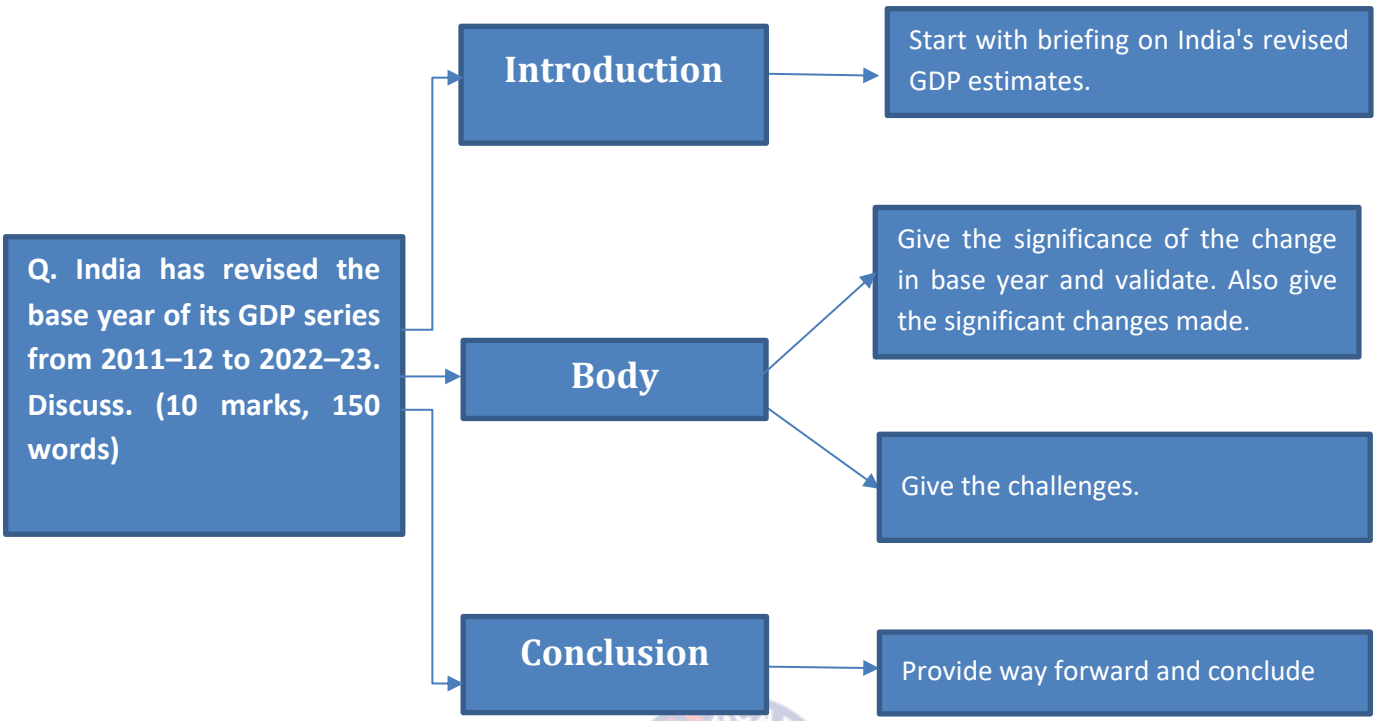

MODEL ANSWER

India has revised the base year of its **Gross Domestic Product (GDP)** estimates from **2011–12 to 2022–23** to better reflect structural changes in the economy and improve the accuracy of national income estimates. Under the revised framework, **real GDP growth for FY 2025–26 is estimated at about 7.6%, compared with 7.1% in FY 2024–25**, reflecting sustained economic momentum.

Significant Changes Introduced in the New GDP Series

- **Use of Improved Data Sources** such as ASUSE, PLFS, GST network and PFMS.
- **Adoption of Double Deflation** in manufacturing and agriculture to improve real value-added estimates.
- **Integration of Supply and Use Tables (SUT)** to reconcile production and expenditure estimates.
- **Granular Deflation Techniques** using more than **260 CPI item-level indices**.
- **Better Classification of Multi-Activity Companies** using MCA filings for accurate sectoral allocation.
- **Improved Estimation of Household Consumption (PFCE)** through updated surveys and administrative datasets.

Significance of the Change in Base Year

- **Reflects Structural Transformation of the Economy**: The revision captures emerging sectors such as **digital services, renewable energy, and the gig economy**, which were inadequately represented earlier.
- **Improved Data Sources and Coverage**: The revised series integrates datasets such as **ASUSE, PLFS, GST network, PFMS and e-Vahan**, improving measurement of services and informal sectors.

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- **Better Measurement of Informal Sector**: Direct survey-based estimation improves coverage of **unincorporated enterprises and household sector activities**, which form a large part of India's economy.
- **Improved Policy Formulation and Fiscal Planning**: Accurate GDP estimates support **evidence-based policymaking, investment planning and fiscal management**.
- **Greater Global Comparability and Credibility**: The revised series aligns with the **System of National Accounts (SNA) 2008** and international statistical standards, strengthening investor confidence.
- **Improved State-Level Economic Measurement**: The revision improves **Gross State Domestic Product (GSDP)** estimation through greater use of state-level data and reduced reliance on proxy indicators.

Challenges in the New GDP Series

- **Measurement Difficulties in Informal Sector**, which contributes nearly **45–50% of GDP and around 80–85% of employment**.
- **Methodological Complexity** due to techniques like double deflation and Supply-Use Tables.
- **Reliance on Administrative Data Sources** such as GST and MCA filings that may contain reporting inconsistencies.
- **Limited Statistical Capacity at State Level**, affecting GSDP estimation.
- **Delay in Back-Series Data**, making long-term comparisons difficult.
- **Impact on Fiscal Indicators**, as revised GDP changes fiscal deficit-to-GDP and debt-to-GDP ratios.

Way Forward

- Introduce **Producer Price Index (PPI)** for better price measurement.
- Strengthen **state statistical systems and data capacity**.
- Expand surveys such as **ASUSE and PLFS** to capture informal sector activity.
- Improve **integration of real-time administrative data** like GST, EPFO and digital payments.
- Align with **future SNA 2025 standards** and expand measurement of digital economy activities.

The revision of India's GDP base year to **2022–23** represents a major step toward modernising the country's statistical system. By incorporating improved datasets and advanced methodologies, the new GDP series provides a **more accurate and credible reflection of India's evolving economy**, strengthening the foundation for evidence-based policymaking and long-term economic planning.

20. FISCAL HEALTH INDEX 2026

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

NITI Aayog released the **second edition of the Fiscal Health Index (FHI) 2026**, launched by Vice-Chairman **Suman Bery** and CEO **Nidhi Chhibber**.

The **Fiscal Health Index** is a **data-driven framework to assess and compare the fiscal performance of Indian states**, aiming to promote **fiscal discipline, reforms, and evidence-based policymaking**.

- **Expanded Coverage:** The first edition evaluated **18 major states**. The **2026 edition includes 10 North-Eastern and Himalayan states**, making the index more representative. These states are **evaluated separately** due to structural differences.
- **Key Findings**
  - Significant **variation in fiscal performance across states**.
  - Many major states recorded **moderated fiscal scores in 2023–24**, indicating increasing fiscal pressures.
- **Key Policy Recommendations:**
  - Strengthen **revenue mobilisation and state own-tax capacity**.
  - **Rationalise committed expenditures** to increase fiscal flexibility.
  - Improve the **quality and composition of capital expenditure**.
  - Adopt **medium-term fiscal planning** to manage debt and deficits.
  - Enhance **public financial management systems and transparency**.
  - Monitor **off-budget borrowings** more closely.
- **Significance**
  - The index provides **benchmarking of state finances**, helping states identify fiscal challenges and implement reforms.
  - It aims to **strengthen fiscal governance, reduce regional disparities, and support sustainable economic growth in India**.

FISCAL HEALTH OF INDIA:

- **Fiscal health of India is closely tied to state finances:** India's fiscal position depends heavily on state governments because they undertake major development expenditure and welfare spending.
  - States account for **about one-third of India's general government debt**, making their fiscal management crucial for **macroeconomic stability and long-term development**.
  - Therefore, NITI Aayog created the **Fiscal Health Index (FHI)** to systematically evaluate the fiscal performance of states. The index assesses fiscal health through **five pillars** which collectively reflect how effectively states generate revenue, control deficits, manage debt, and spend on development.

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- Quality of expenditure
- Revenue mobilisation
- Fiscal prudence
- Debt index
- Debt sustainability

- **Evidence of Strong Fiscal Health in Some States:** The report shows that several states demonstrate **sound fiscal management and sustainable public finances**.
  - **Odisha – Fiscal leader:** Odisha continues to **lead the Fiscal Health Index rankings**. Its strong position is attributed to **controlled fiscal deficits, stable revenue streams** and better expenditure management.
  - **Jharkhand and Gujarat – Stable debt and revenue:** Both states improved their ranking due to **stable debt levels** and consistent revenue inflows.
  - Among the NE and Himalayan states: **Arunachal Pradesh** performed strongly due to **prudent debt management and quality expenditure**. **Uttarakhand** performed well because of **higher own-revenue mobilisation**.
- **Evidence of Fiscal Stress in Several States:** Despite some success stories, the report highlights **serious fiscal vulnerabilities in multiple states**.
  - **High debt and persistent deficits:** States such as **Punjab, Andhra Pradesh, West Bengal, Kerala** face **persistent fiscal stress** due to rising public debt, sustained fiscal deficits, slow revenue growth.
  - **High committed expenditure:** Some states struggle with **high committed expenditure**, such as salaries, pensions and interest payments. States like **Bihar, Madhya Pradesh** face fiscal constraints because large portions of their budgets are pre-committed, limiting developmental spending.
  - **Hidden fiscal risks:** The report also highlights **off-budget borrowings** by state public sector enterprises.
    - Extra-budget borrowings by state PSUs reached **₹38,464 crore**, creating **hidden fiscal liabilities** not fully reflected in official debt figures.
- **Revenue Trends and Fiscal Indicators:** The report provides several macro-fiscal trends that reflect the fiscal health of states.
  - **Revenue growth improving:** Revenue receipts grew by **11.64% in 2023-24**.
  - Drivers of revenue growth: **Central GST transfers increased by 27.75%. Income tax transfers increased by 25.97%. State own tax revenue increased by about 11%**.
  - However, heavy reliance on **central transfers (55% of revenue receipts)** shows limited fiscal autonomy of states.
  - **Fiscal deficit management:** Many states kept deficits within fiscal rules. Fiscal deficit maintained around **3.17% of GSDP**, within FRBM limits. This indicates some improvement in fiscal discipline.
  - **Debt burden remains high:** Despite improvements, debt levels remain a concern. Outstanding public liabilities reached **29.58% of GSDP** (against 20% recommended by FRBM) in some states. High debt reduces fiscal space for welfare and development spending.

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- **Structural Fiscal Challenges in India:** The Fiscal Health Index reveals deeper structural issues in India's fiscal architecture.
    - **Uneven fiscal capacity across states:** The report highlights **wide regional disparities** in fiscal capacity and revenue mobilisation. This reflects differences in economic structure, tax base, administrative capacity.
    - **Dependence on central transfers:** Many states rely heavily on **tax devolution and grants from the Union government**, indicating limited internal revenue generation.
    - **Rising debt pressures:** Globally, public debt has reached **USD 102 trillion**, and similar pressures are visible in developing economies including India.
- **Overall Assessment of India's Fiscal Health:** The Fiscal Health Index suggests that India's fiscal health is **moderately stable but uneven across states**. Positive trends include improving revenue mobilisation, controlled fiscal deficits, increasing capital expenditure.

SIGNIFICANCE OF FISCAL HEALTH FOR STATES IN THE PRESENT ECONOMIC SITUATION AND WEST ASIA GEOPOLITICAL RISKS:

In the present global environment—characterised by **rising public debt, inflationary pressures, and geopolitical tensions such as the West Asia conflict affecting energy supply**—sound fiscal health at the state level becomes even more critical.

- **Ensuring Macroeconomic Stability:** Healthy state finances help maintain overall macroeconomic stability in India. States undertake **large public expenditure on infrastructure, health, education, and welfare**.
    - If states run persistent deficits or accumulate excessive debt, it can **destabilize national public finances**. The Fiscal Health Index notes that **states now contribute about one-third of India's total public debt**, making their fiscal trajectory central to macroeconomic stability.
- **Cushioning External Economic Shocks:** Geopolitical conflicts such as the **West Asia crisis affecting oil supply routes like the Strait of Hormuz** can trigger oil price spikes, inflation, fiscal pressures through subsidies and welfare spending. States with sound fiscal health can absorb **higher fuel costs,** manage **inflation-driven welfare expenditures,** sustain development spending during crises.
    - Energy price shocks increase transport and fertilizer costs, forcing governments to **expand subsidies or social protection schemes**, which requires fiscal space.
- **Maintaining Public Service Delivery:** States are responsible for key welfare programmes such as healthcare, education, agriculture support, infrastructure. Weak fiscal health limits states' ability to provide these services.
    - States with **high committed expenditure (salaries, pensions, interest payments)** such as Punjab and Kerala face limited fiscal space for development spending.
- **Enabling Development and Capital Investment:** Sound fiscal health allows states to invest in infrastructure, industrial corridors, energy transition, digital governance. The Fiscal Health Index emphasises **quality of expenditure and capital outlay** as key determinants of fiscal performance.
- **Strengthening Economic Resilience in Federal Governance:** India's economic growth depends heavily on the **fiscal capacity of states** because states implement most public development programmes, they are responsible for regional economic growth.

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- A fiscally strong state can attract investment, maintain stable business conditions, reduce regional disparities.

- **Managing Debt Sustainability:** High debt burdens increase interest payments and reduce fiscal space. The Fiscal Health Index highlights the importance of indicators such as **interest payments to revenue receipts, debt to GSDP ratio, growth–interest differential (Domar gap)**.
- **Improving Crisis Response Capacity:** Fiscal resilience enables states to respond quickly to emergencies such as energy shortages, natural disasters, food inflation, supply chain disruptions. During geopolitical crises like the West Asia conflict, states may need to support vulnerable populations, subsidize essential commodities, manage economic disruptions.

MEASURES TO IMPROVE THE FISCAL HEALTH OF INDIA:

- **Strengthen Revenue Mobilisation:** India must enhance the capacity of both the Union and state governments to generate stable and sustainable revenues.
  - Expand the **GST base** by reducing exemptions and improving compliance.
  - Strengthen **state own-tax revenues** such as property tax, vehicle tax, and stamp duties.
  - Improve tax administration through **digital monitoring and data analytics**.
  - **Best practices: GST e-invoicing and data analytics** have significantly improved tax compliance. **OECD countries** use real-time tax data systems to curb tax evasion.
- **Improve Quality of Public Expenditure:** Fiscal health depends not just on the level of expenditure but also on how effectively resources are spent.
  - Shift spending from **revenue expenditure to productive capital expenditure**.
  - Prioritise infrastructure, education, healthcare, and digital connectivity.
  - Conduct **outcome-based budgeting**.
  - **Best practices: New Zealand's Wellbeing Budget** links public spending with measurable outcomes.
- **Rationalise Committed Expenditure:** A large portion of state budgets is locked in **salaries, pensions, and interest payments**, reducing fiscal flexibility.
  - Pension reforms and expansion of **National Pension System (NPS)**.
  - Digitisation and automation to reduce administrative costs.
  - Performance-linked incentives for public sector employees.
- **Strengthen Debt Management and Fiscal Prudence:** Maintaining sustainable debt levels is critical for long-term fiscal stability.
  - Strict adherence to **Fiscal Responsibility and Budget Management (FRBM) targets**.
  - Improve transparency in **off-budget borrowings**.
  - Create medium-term fiscal frameworks.
  - **Best practices: European Union fiscal rules** maintain deficit and debt limits to ensure sustainability.
- **Enhance Transparency and Fiscal Accountability:** Transparent fiscal systems build investor confidence and improve public finance management.
  - Use **CAG-verified fiscal data and digital public finance dashboards**.
  - Strengthen parliamentary oversight of public spending.

- Publish **comprehensive debt and liability reports**.
- **Best practices:** Countries like **Canada and Australia** maintain transparent fiscal reporting systems.

○ **Promote Fiscal Federalism and Cooperative Governance:** Balanced fiscal relations between the Union and states are essential for fiscal sustainability.

- Ensure predictable **Finance Commission transfers and grants**.
- Encourage states to improve **own-revenue capacity**.
- Promote inter-state benchmarking through indices such as the **Fiscal Health Index**.
- **Competitive federalism** encourages states to adopt efficient fiscal policies.

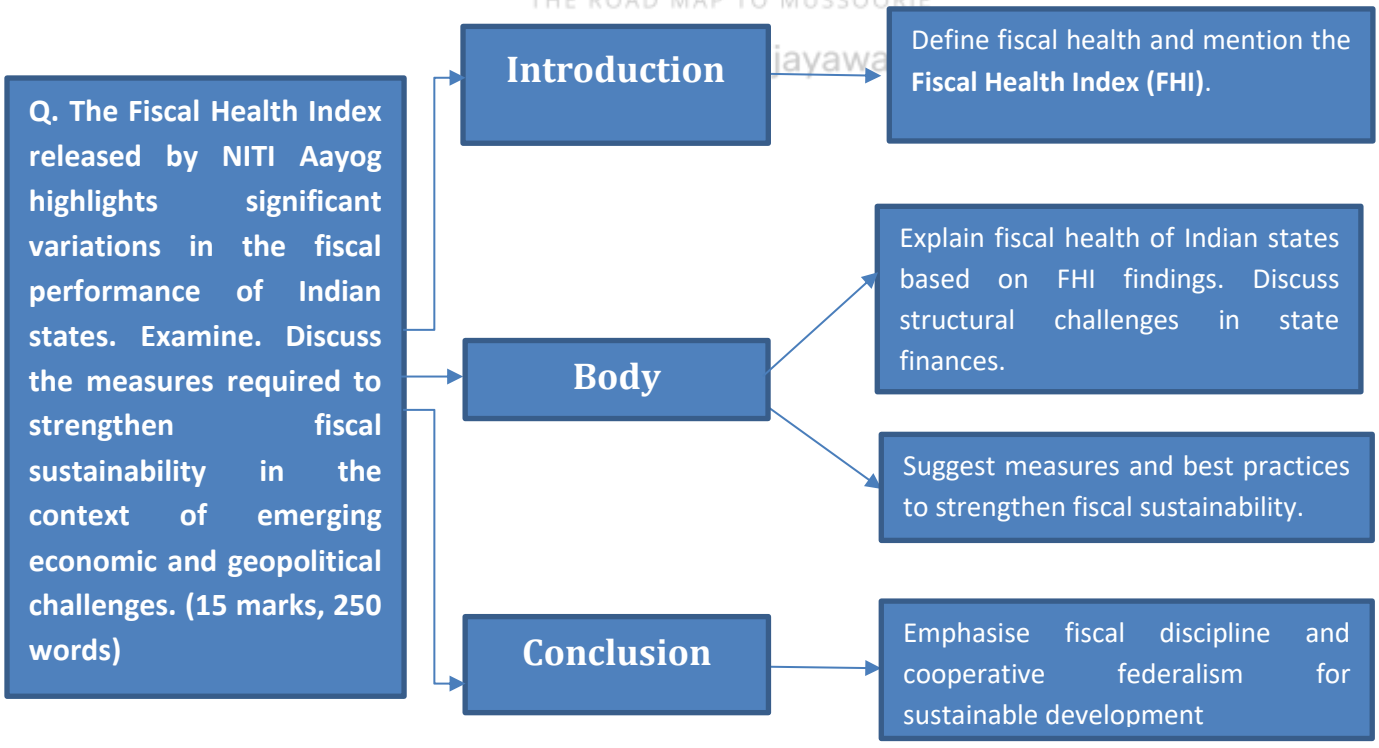
○ **Diversify Revenue Sources and Strengthen Non-Tax Revenue:** Non-tax revenue remains relatively low in many states.

- Monetisation of public assets.
- Public-private partnerships (PPP) in infrastructure.
- Efficient management of state-owned enterprises.
- Undertake **strategic disinvestment and asset monetisation programmes**.

PRACTICE QUESTION

Q. The Fiscal Health Index (FHI) released by NITI Aayog highlights significant variations in the fiscal performance of Indian states. Examine. Discuss the measures required to strengthen fiscal sustainability in the context of emerging economic and geopolitical challenges. (15 marks, 250 words)

APPROACH



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MODEL ANSWER

Fiscal health refers to the ability of governments to maintain sustainable revenue, expenditure, debt, and deficit levels while ensuring economic development. In this context, NITI Aayog released the **Fiscal Health Index (FHI) 2026**, a data-driven framework that assesses the fiscal performance of states based on indicators such as **quality of expenditure, revenue mobilisation, fiscal prudence, debt index, and debt sustainability**.

Fiscal Health of Indian States

- **Variation in fiscal performance:** The FHI highlights **significant inter-state variations** in fiscal outcomes due to differences in economic capacity, governance, and revenue mobilisation.
- **States demonstrating strong fiscal management:** Some states exhibit better fiscal discipline and sustainability.
    - **Odisha** leads the index due to controlled deficits and stable revenues. **Jharkhand and Gujarat** improved rankings due to stable debt levels and consistent revenue flows.
    - Among NE and Himalayan states, **Arunachal Pradesh** performed well due to prudent debt management, while **Uttarakhand** benefited from strong own-revenue mobilisation.
- **Evidence of fiscal stress in several states:** Despite improvements, many states face fiscal challenges.
    - **High debt and persistent deficits** in states such as Punjab, Andhra Pradesh, West Bengal and Kerala.
    - **High committed expenditure** on salaries, pensions, and interest payments in states like Bihar and Madhya Pradesh, reducing developmental spending.
    - **Hidden fiscal liabilities** due to off-budget borrowings by state public sector enterprises.
    - **Revenue and fiscal indicators:** Recent trends indicate both progress and concerns. Revenue receipts grew by **11.64% in 2023-24**.
    - Central GST transfers increased by **27.75%**, and income tax transfers by **25.97%**.
    - State own tax revenue rose by about **11%**.
- **Structural Fiscal Challenges:** The Fiscal Health Index reveals deeper structural issues in India's fiscal system.
    - **Uneven fiscal capacity across states** due to differences in tax bases and economic structures.
    - **Dependence on Union transfers**, reducing fiscal autonomy.
    - **Rising public debt**, reflecting global trends of increasing public borrowing.
    - **Limited fiscal space for development spending** due to high committed expenditure.

Significance in the Context of Emerging Economic and Geopolitical Challenges

- **Global economic uncertainty:** Rising global debt, inflationary pressures, and financial instability require stronger fiscal buffers for states to maintain economic stability.
- **Energy and commodity shocks:** Geopolitical tensions such as conflicts in **West Asia affecting oil supply routes like the Strait of Hormuz** can lead to rising oil prices, inflation, higher subsidy

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burdens. States with strong fiscal health can absorb such shocks without reducing development spending.

- **Increased welfare and social protection demand:** Economic shocks often increase the need for food subsidies, employment schemes, social welfare programs. Fiscal resilience allows states to maintain these programmes during crises.
- **Infrastructure and growth imperatives:** India's long-term economic growth requires sustained investment in infrastructure, energy transition, and digital governance. Strong fiscal health ensures adequate fiscal space for such investments.

Measures to Improve Fiscal Health

- **Strengthen revenue mobilisation:** Broaden the **GST base** and improve compliance. Enhance **state own tax revenues** such as property tax and vehicle tax. Use digital tools and analytics for tax administration.
- **Improve quality of public expenditure:** Increase **capital expenditure** in infrastructure and productive sectors. Adopt **outcome-based budgeting** to improve efficiency.
- **Rationalise committed expenditure:** Expand **National Pension System (NPS)** coverage. Reduce administrative costs through digital governance.
- **Strengthen debt management:** Adhere strictly to **FRBM targets**. Improve transparency of **off-budget borrowings**. Introduce **medium-term fiscal frameworks**.
- **Enhance fiscal transparency:** Use **CAG-verified fiscal data** and digital fiscal dashboards. Publish comprehensive debt and liability reports.
- **Promote cooperative fiscal federalism:** Strengthen **Finance Commission transfers** and predictable fiscal frameworks. Encourage inter-state benchmarking using tools like the **Fiscal Health Index**.
- **Diversify revenue sources:** Monetise public assets and expand **public-private partnerships**. Improve efficiency of state-owned enterprises.

The Fiscal Health Index demonstrates that while India's fiscal system remains broadly stable, significant disparities persist across states. Strengthening **revenue capacity, fiscal discipline, debt management, and cooperative federalism** will be essential to enhance fiscal resilience and sustain India's economic growth in an increasingly uncertain global environment.

21. GREAT NICOBAR PROJECT

iMPACT ANALYSIS

SYLLABUS

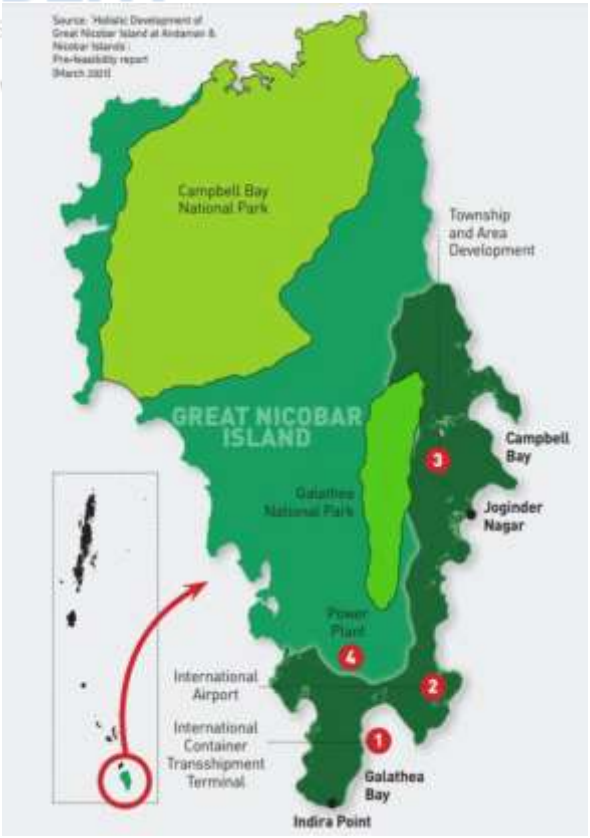
GS 3 > Economic Development > Infrastructure

REFERENCE NEWS

- Recently, the **National Green Tribunal (NGT)** upheld the environmental clearances granted to the **Great Nicobar Project**, allowing key components such as the **trans-shipment port, airport expansion, township development, and allied infrastructure** to move forward.
- However, the ruling has revived an important constitutional and environmental debate: whether such large-scale development can be justified in a **fragile island ecosystem** without first determining its **ecological and anthropological carrying capacity**.

MORE ON NEWS:

- Great Nicobar is one of India's most **ecologically sensitive and culturally significant regions**. It is home to species such as the **leatherback sea turtle, Nicobar megapode, saltwater crocodile, robber crab, and Nicobar macaque**. The island is also inhabited by the **Shompen PVTG** and the **Nicobarese community**, whose lives are closely tied to the forests and coasts.
- Thus, the issue is not just about environmental clearance, but about balancing strategic development with **ecological sustainability, tribal protection, and constitutional principles.**



ABOUT THE GREAT NICOBAR PROJECT

- The **₹81,000-crore** mega project involves a **comprehensive infrastructure upgrade** on Great Nicobar Island and is being implemented by the Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO).
  - It includes:
    1. **An international container transshipment terminal**
    2. **A greenfield airport (civil and military dual-use)**
    3. **A new township**
    4. **A 450 MVA gas and solar-based**

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power plant

- **Spatial footprint:** 166 sq km
  - Requires diversion of **130.75 sq km of pristine tropical forest**
  - Will involve **felling of over 1 million trees**, per official estimates
- Located near the **Malacca Strait**, one of the world's busiest maritime trade routes, the project holds immense **strategic significance** for India's maritime security and regional connectivity.
- This is part of India's strategic vision to establish **Great Nicobar as a logistical, commercial, and strategic hub in the Indo-Pacific.**
- The project has received necessary clearances, including environmental and forest clearances, and is **expected to be developed over 30 years in a phased manner.**

- Promoted by **NITI Aayog** as a **'mega-infrastructure project'** and a **'strategic masterstroke,'** the ambitious 'Great Nicobar Island Development Project' **faces protests and appeals** to halt it on environmental grounds by conservationists, naturalists, political parties, and civil society groups.

SIGNIFICANCE OF THE GREAT NICOBAR PROJECT:

- **Economic Development:**
  - The centerpiece of this project is the **International Container Transshipment Terminal (ICTT)** at Galathea Bay, which aims to transform Great Nicobar into a critical hub for cargo transshipment.
  - By **reducing India's dependence on foreign ports** like Colombo and Singapore, this terminal is expected to boost trade, streamline shipping routes, and invigorate regional economic activity.
- **Strategic Advantage:**
  - Great Nicobar's location near the **Malacca Strait**, a vital maritime chokepoint through which a significant portion of global trade flows, gives India a unique strategic edge. This project strengthens India's role in global maritime commerce, allowing it to better influence critical sea lanes.
  - For instance, as China's **"String of Pearls" strategy** builds ports across the Indian Ocean, this development becomes even more crucial to maintaining India's dominance in the region.
- **Security Considerations:**
  - The Bay of Bengal and the Indian Ocean are not just economic zones—they're **strategic frontlines**. As naval activities from countries like China expand, India needs a stronger foothold in these waters. This project enhances India's maritime security by solidifying its presence and acting as a **deterrent against external threats.**
- **Military Infrastructure Enhancement:**
  - The island's defense capabilities are set to receive a significant upgrade. Existing military facilities, like the **INS Baaz naval base** at Campbell Bay, will benefit from new airstrips, jetties, and advanced surveillance systems. These improvements will enhance India's ability to monitor its waters, respond quickly to threats, and protect vital shipping lanes.
- **Local Employment Generation:**

- One of the most immediate benefits of this project is the job creation it brings. From construction to operations, the development of ports, airports, and other infrastructure is expected to create substantial employment opportunities for the local population**, raising living standards and supporting economic upliftment.**

- **Tourism Promotion:**
  - The plan also focuses on developing **eco-tourism and coastal tourism** to showcase the island's natural beauty and biodiversity. By drawing both domestic and international visitors, this initiative aims to diversify the economy while providing additional income streams for local communities.
- **Social Development:**
  - This project isn't just about trade and defense—it's about people. Plans include state-of-the-art healthcare and education facilities, improved air and sea connectivity, and robust digital infrastructure. E-governance initiatives like **telemedicine** and **tele-education**, aligned with the **Digital India initiative**, will ensure that residents have better access to essential services.

CONCERNS ASSOCIATED WITH THE GREAT NICOBAR PROJECT

- **Indigenous Rights Violations:**
  - The project threatens the rights of the **Shompen and Nicobarese tribes**, violating the **Forest Rights Act (2006)**, which grants the Shompen exclusive authority to manage and protect the tribal reserve. Increased contact with outsiders also raises concerns about the **spread of diseases to which the tribes have no immunity.**
  - Also, the threat is not limited to direct displacement; even without formal eviction, **roads, labour camps, administrative expansion, and resource extraction may irreversibly alter traditional ways of life.**
- **Biodiversity Threats:**
  - Environmental groups highlight the risks of deforestation, with nearly **a million trees slated for removal**, potentially devastating the island's fragile ecosystem.
  - Species such as the **leatherback sea turtle, Nicobar megapode, saltwater crocodile, robber crab, and Nicobar macaque** face serious risks.
  - Dredging, artificial lighting, shipping traffic, and habitat fragmentation may affect nesting, breeding, and long-term population viability.
  - The concern is not just species presence, **but crossing irreversible ecological thresholds.**
- **Insufficient Stakeholder Consultation:**
  - The **Andaman and Nicobar Administration** and **ANIIDCO** raised concerns about the project's feasibility, suggesting the need for a **techno-economic feasibility study**.
  - Stakeholder consultations with the Tribal Council and local communities have been inadequate.
  - The **National Green Tribunal's high-powered committee report** on environmental clearances remains unpublished, raising transparency issues.
  - **Ecological and indigenous issues are structurally linked** and cannot be treated separately.
- **Seismic Risks:**

- Great Nicobar Island lies in a **seismically volatile zone** that experienced significant subsidence during the **2004 tsunami**. This raises safety concerns regarding large-scale infrastructure development in a high-risk area.
- Loss of mangroves and coastal disturbance may **further reduce resilience in a disaster-prone region.**

- **International Obligation Breaches:**
  - The **Galathea Bay Wildlife Sanctuary**, part of a **UNESCO World Heritage Site**, is located within the project area.
  - Developing the island could breach India's international obligations to preserve biodiversity and protect pristine ecosystems.
- **Security and Strategic Concerns:**
  - **RTI Denials**: Requests for project details have been denied under **Section 8(1)(a) of the RTI Act**, citing sovereignty and strategic concerns.
  - Critics argue that only information related to the **dual-use military-civil airport**, controlled by the **Indian Navy**, should remain classified, not the broader aspects of tourism and shipping facilities.
  - Contradictions in Policy: The Ministry of Home Affairs' stance on maintaining the island's isolation contrasts with the Shipping Ministry's proposals for cruise terminals and shipbreaking facilities, which could increase exposure to foreign vessels and international tourists.
  - Critics argue that **strategic importance cannot override ecological limits, tribal protection, and constitutional safeguards.**
- **Environmental and Legal Challenges:**
  - **Policy Inconsistencies**: Critics highlight contradictions in the project's stated strategic goals and the proposed infrastructure, such as shipbreaking yards and high-end tourism.
  - **Lack of Transparency**: Activists like **Debi Goenka** have raised alarms about the lack of clarity in environmental clearances and the potential for irreversible ecological damage.
  - Principles such as the **precautionary principle, sustainable development, and inter-generational equity** require proof of environmental safety where irreversible harm is possible.
  - The major unresolved issue is whether the **island's ecological and anthropological carrying capacity was established before approval**.
- **Economic Viability Issues:**
  - Replicating the success of duty-free ports like Singapore or Hong Kong on the remote **Great Nicobar Island** is considered economically unrealistic due to its lack of hinterland, industrial support, and resource availability.
- **Administrative Pushback:**
  - **ANIIDCO** and local authorities argue that proposed ship repair facilities conflict with the envisioned greenfield township and waterfront tourism activities.
  - Coastal areas fall under **CRZ 1a regulations**, protecting coral reefs and restricting incompatible developments.

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- The broader concern is the absence of a **holistic planning framework for a fragile island ecosystem.**
- What is needed is a **cumulative impact assessment** integrating ecological, seismic, hydrological, and anthropological factors

WAY FORWARD:

- **Scientific Carrying Capacity Assessment:**
  - Before proceeding further, a comprehensive study must establish the island's **ecological, anthropological, and disaster-bearing limits**, so that development remains within sustainable thresholds.
- **Cumulative Impact Assessment:**
  - Instead of evaluating the port, airport, township, and power plant separately, authorities should undertake an integrated assessment covering **ecological, seismic, hydrological, coastal, and social impacts**.
- **Strengthening Tribal Safeguards:**
  - The rights and survival of the **Shompen and Nicobarese** must be treated as central, not peripheral. Consultation should ensure **meaningful prior and informed participation**, not mere procedural compliance.
- **Biodiversity-Centred Planning:**
  - Critical habitats of the **leatherback turtle, Nicobar megapode, mangroves, coral reefs, and rainforest systems** must be identified as no-go or highly regulated zones for development.
- **Reassessing Project Design and Scale:**
  - Strategic infrastructure may be necessary, but its scale, location, and design should be revisited to reduce forest diversion, demographic pressure, and long-term ecological damage.
- **Disaster-Resilient Island Planning:**
  - Given the island's **high seismicity and tsunami history**, all infrastructure planning must follow a far more cautious island-specific approach rather than mainland development models.
- **Transparency and Public Accountability:**
  - Key reports, expert studies, and environmental assessments should be placed in the public domain to enable informed scrutiny and build trust.
- **Separation of Strategic and Commercial Components:**
  - Purely strategic infrastructure should be clearly distinguished from tourism, township, and commercial proposals so that national security reasoning is not used to dilute environmental scrutiny.
- **Phased and Adaptive Development:**
  - Any implementation should proceed in carefully monitored phases, with periodic review based on environmental indicators, tribal impacts, and disaster vulnerability.
- **Constitutionally Grounded Decision-Making:**

- Future decisions should be guided by the **precautionary principle, sustainable development, inter-generational equity, Article 21, and the public trust doctrine**.

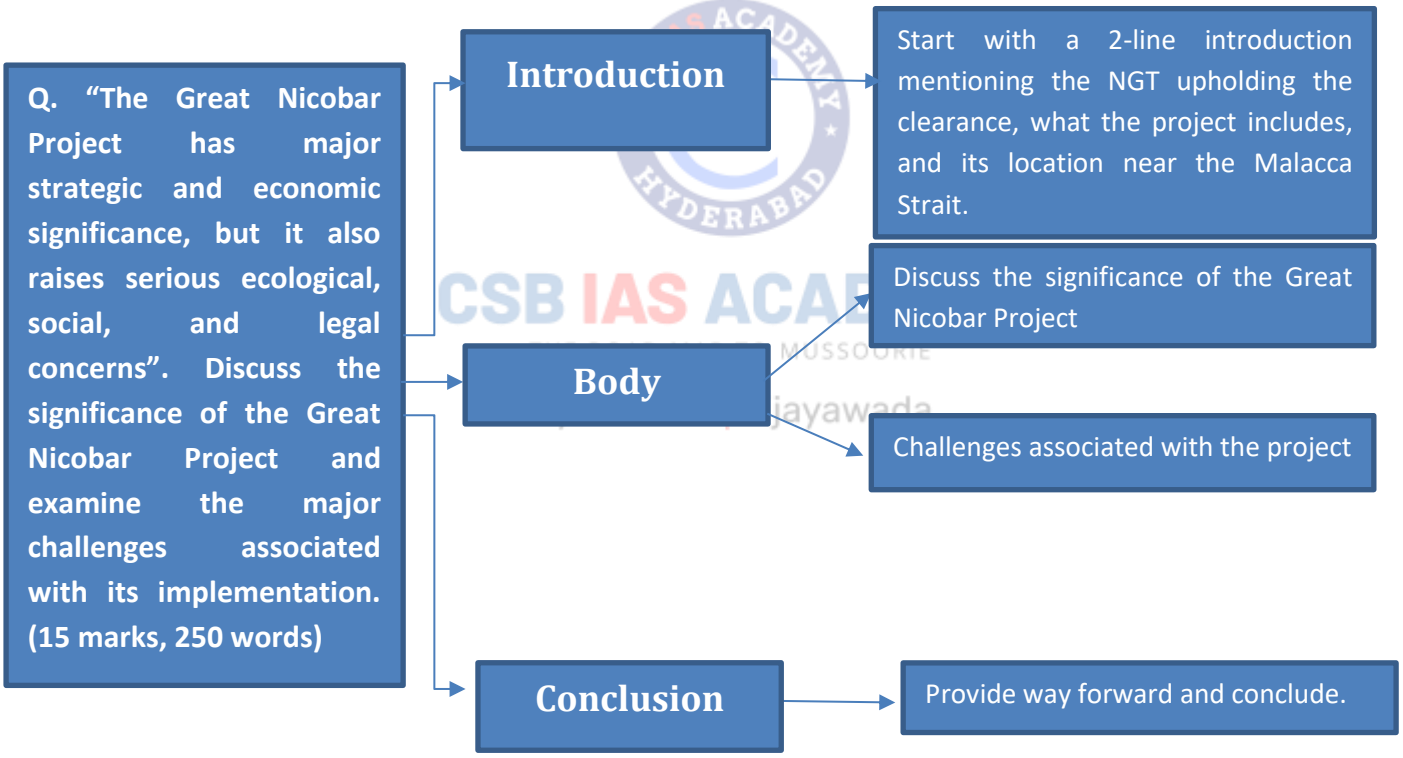
CONCLUSION:

- The Great Nicobar Project can succeed only if strategic development is aligned with **ecological sustainability and tribal protection**. The real issue is not mere clearance, but whether development respects the island's **carrying capacity and constitutional limits**.Only a transparent, science-based, and socially just approach can make it a credible model of island development.

PRACTICE QUESTION

Q. "The Great Nicobar Project has major strategic and economic significance, but it also raises serious ecological, social, and legal concerns". Discuss the significance of the Great Nicobar Project and examine the major challenges associated with its implementation. (15 marks, 250 words)

APPROACH



MODEL ANSWER

Recently, the **National Green Tribunal (NGT)** upheld the environmental clearances granted to the **Great Nicobar Project**, a ₹81,000-crore infrastructure initiative involving a **trans-shipment port, dual-use airport, township, and power plant**. Located near the **Malacca Strait**, the project aims to transform Great Nicobar into a strategic and commercial hub in the **Indo-Pacific**, but it has sparked debate on ecological sustainability and tribal protection.

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Significance of the Great Nicobar Project:

- **Economic Development:**
  - The **International Container Transshipment Terminal (ICTT)** at Galathea Bay can reduce India's dependence on foreign ports like **Colombo and Singapore**.
  - It can strengthen India's role in global shipping networks and enhance regional trade connectivity.
- **Strategic and Maritime Advantage:**
  - Proximity to the **Malacca Strait**, one of the busiest maritime chokepoints, gives India greater influence over global sea lanes.
  - Helps counter strategic competition in the Indian Ocean, including China's **"String of Pearls"** strategy.
- **Security and Defence Strengthening:**
  - Expansion of facilities near **INS Baaz** improves maritime surveillance, naval logistics, and rapid response capability in the Bay of Bengal.
- **Regional Development:**
  - Infrastructure expansion may generate **employment, tourism opportunities, improved connectivity, healthcare, and digital services** for local communities.

Challenges Associated with the Project:

- **Ecological Concerns**
  - Diversion of **130.75 sq km of tropical forest** and large-scale tree felling threaten fragile island ecosystems.
  - Species such as the **leatherback turtle and Nicobar megapode** face risks from dredging, habitat loss, and increased shipping.
- **Indigenous Rights Issues**
  - The **Shompen (PVTG)** and **Nicobarese** communities may face cultural disruption, disease exposure, and loss of traditional livelihoods.
- **Seismic and Environmental Risks**
  - The island lies in a **high seismic zone** and was significantly affected during the **2004 tsunami**, raising concerns about large-scale infrastructure.
- **Governance and Legal Issues**
  - Questions remain about **transparency, stakeholder consultation, and ecological carrying capacity assessment** before approval.
- **Economic and Policy Concerns**
  - Replicating global transshipment hubs in a remote island with limited hinterland may face economic viability challenges.

Way Forward:

- Conduct **scientific carrying-capacity and cumulative impact assessments** for ecological and social sustainability.

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- Ensure **meaningful consultation and safeguards** for the Shompen and Nicobarese communities.
- Adopt **biodiversity-sensitive planning**, protecting critical habitats and coastal ecosystems.
- Separate **strategic infrastructure** from commercial tourism projects to avoid policy contradictions.
- Implement **phased, disaster-resilient, and transparent development** guided by environmental principles and constitutional safeguards.

The Great Nicobar Project reflects India's strategic ambitions in the Indo-Pacific. However, its success depends on balancing **economic and security goals with ecological sustainability, tribal rights, and responsible governance**, ensuring development remains within the island's environmental limits.

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22. PERIODIC LABOUR FORCE SURVEY (PLFS) ANNUAL REPORT, 2025

iMPACT ANALYSIS

SYLLABUS:

GS 3> Economic Development

REFERENCE NEWS:

- Recently, the Ministry of Statistics and Programme Implementation (MoSPI) released the Periodic Labour Force Survey (PLFS) Annual Report for 2025.

WHAT IS PLFS?

- The **Periodic Labour Force Survey (PLFS)** is India's main official labour market survey used to estimate:
  - Labour Force Participation Rate (LFPR)
  - Worker Population Ratio (WPR)
  - Unemployment Rate (UR)
  - Employment composition by sector and status
  - Education, vocational training, wages, and labour-market characteristics
- It was introduced to provide **more frequent and more reliable employment–unemployment data** than the earlier large-interval NSS employment surveys.
- PLFS is conducted by the **National Statistical Office (NSO)** under the **Ministry of Statistics and Programme Implementation (MoSPI), Government of India**.
- The **first PLFS Annual Report** covered **July 2017 – June 2018**.
- **PLFS 2025 is the first comprehensive annual** report based on the **calendar year January–December 2025**.

  - **Labour Force Participation Rate (LFPR):** LFPR is defined as the percentage of persons in labour force (i.e. working or seeking or available for work) in the population. (i.e **labour force = no of employed persons + no of unemployed persons**)
    - **Labour Force Participation Rate (LFPR**) = (Labour Force ÷ Total Population) × 100
  - **Worker Population Ratio (WPR):** WPR is defined as the percentage of employed persons in the population.
    - **Worker Population Ratio (WPR**) = (Number of Employed Persons ÷ Total Population) × 100
  - **Unemployment Rate (UR):** UR is defined as the percentage of persons unemployed among the persons in the labour force.
    - **Unemployment Rate (UR)** = (Number of Unemployed Persons ÷ Labour Force) × 100

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MAIN OBJECTIVES OF PLFS:

- **To measure employment and unemployment in India:** PLFS provides national estimates of how many people are working, seeking work, or outside the labour force.
- **To provide frequent labour market indicators:** Earlier surveys were less frequent. PLFS gives much more regular labour market information.
- **To capture rural and urban labour trends:**
  - It helps compare labour conditions across: rural vs urban, male vs female , youth vs overall population , sectoral shifts such as agriculture to manufacturing/services
- **To support evidence-based policymaking:** It helps government design policies on:
  - employment generation
  - skilling
  - women's workforce participation
  - wage trends
  - structural transformation of the economy

IMPORTANT CONCEPTS USED IN PLFS:

- **Labour Force Participation Rate (LFPR)**
- **Worker Population Ratio (WPR)**.
- **Unemployment Rate (UR)**
- **Usual Status:** Activity status determined on the basis of the **last 365 days**.
- **Principal Status (ps):** The activity on which a person spent the **major part of time** during the last 365 days.
- **Subsidiary Status (ss):** A person may also perform some economic activity for **30 days or more** in addition to the principal activity.
- **Current Weekly Status (CWS):** Activity status determined on the basis of the **last 7 days**.

KEY FINDINGS OF PLFS ANNUAL REPORT, 2025:

- **Labour Force Participation Rate (LFPR): Stable trend:**
  - LFPR for persons aged 15 years and above stood at **59.3% in 2025**, broadly unchanged from 2024.
  - Male participation remained high at **79.1%**, while female participation was significantly lower at **40.0%**. Rural trends indicate strong participation, especially among women (45.9%), suggesting that earlier gains in rural female workforce engagement have been sustained.
  - Overall, the labour supply side of the economy remained stable without any major decline in participation.
- **Worker Population Ratio (WPR): Employment sustained**
  - The WPR was **57.4% in 2025**, almost unchanged from the previous year, indicating stable employment levels. Male WPR stood at **76.6%**, while female WPR was **38.8%**. Rural areas continued to show stronger employment, with rural male WPR at **78.4%** and rural female at **44.9%**, while urban WPR hovered around **50%**. This reflects that employment generation has broadly kept pace with labour force participation.

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- **Unemployment Rate (UR): Moderate improvement**
  - The overall unemployment rate remained low at **3.1% in 2025**, with a slight decline for males and stability for females. However, a clear rural-urban divide persists—rural unemployment is low (2.4%), whereas urban unemployment remains higher (4.8%), especially among women (6.4%). This indicates that urban labour markets continue to face greater stress, particularly for female employment.
- **Youth unemployment: Declining but still high**
  - Youth unemployment (15–29 years) declined to **9.9%**, with improvements in both rural and urban areas. However, it remains significantly higher than overall unemployment, reflecting persistent challenges in absorbing young entrants into the labour market.
- **Employment composition: Shift towards better-quality jobs**
  - A structural shift is visible in employment patterns, with the share of **regular salaried employment rising to 23.6%**, while self-employment declined to **56.2%** and casual labour remained largely stable. This shift is observed across both genders, indicating gradual movement towards more stable and formal employment opportunities.
- **Sectoral transformation: Agriculture declining**
  - There is a gradual shift away from agriculture, whose share in employment declined to **43.0%**, while manufacturing and services recorded an increase. This reflects a slow but positive structural transformation of the Indian economy towards diversified and non-farm employment.
- **Female earnings: Faster growth but persistent gap**
  - Female earnings grew faster than male earnings across categories such as self-employment, salaried jobs, and casual labour. However, despite higher growth rates, women continue to earn less in absolute terms, highlighting ongoing gender disparities in wages.
- **Education profile: Improving but unequal**
  - The average years of schooling stood at around **10 years**, with **67.8%** of the population having at least secondary education. Urban areas show significantly higher educational attainment compared to rural areas, indicating persistent regional disparities in human capital.
- **Educated unemployment: Slight improvement**
  - Unemployment among educated individuals declined to **6.5%**, showing some improvement. However, it remains higher than overall unemployment, indicating a mismatch between education and employment opportunities.
- **Vocational training: Major gap**
  - Only a small proportion of the population (around **4–5%**) has received formal vocational or technical training. Although trained individuals show higher workforce participation, the overall penetration of skill development remains very low, posing a key policy challenge.
- **NEET population: A concern**
  - A significant proportion of youth—about **25% in the 15–29 age group**—are not in employment, education, or training. This reflects underutilised demographic potential and highlights the need for targeted interventions.
- **Scale of employment**

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- India had approximately **61.6 crore workers in 2025**, of which **41.6 crore were male and 20 crore female**, indicating both the size of the labour market and the gender gap in workforce participation.

- **Reasons for low participation**
  - A large proportion of males outside the labour force cited education, while females primarily cited household responsibilities. This reflects structural and socio-cultural constraints affecting women's participation.
- **Gender gap in work intensity**
  - Men consistently work more hours than women across all employment categories, indicating unequal labour burdens and continued gender disparities in economic participation.

POSITIVE TRENDS IN PLFS 2025:

- **Labour market remained stable:**
  - The labour market remained broadly stable in 2025, with **LFPR at 59.3%** and **WPR at 57.4%**, both almost unchanged from 2024. Rural participation also remained strong, with **rural male LFPR at 80.5%** and **rural female LFPR at 45.9%**, showing that earlier gains were sustained.
- **Unemployment improved slightly:**
  - The **overall UR** for persons aged 15 years and above stood at **3.1%** in 2025. Youth unemployment also declined from **10.3% to 9.9%**, with **rural youth UR** falling from **8.7% to 8.3%** and **urban youth UR** from **14.3% to 13.6%**. This shows modest improvement in labour absorption.
- **Regular salaried jobs increased:**
  - The share of **regular wage/salaried employment** increased from **22.4% in 2024 to 23.6% in 2025**. At the same time, **self-employment declined from 57.5% to 56.2%**, while **casual labour remained around 20.2%**. This suggests a slight shift toward more stable forms of work.
- **Manufacturing and services gained share:**
  - The sectoral composition of employment showed gradual change. **Agriculture's share declined from 44.8% to 43.0%**, while **manufacturing rose from 11.6% to 12.1%** and **other services increased from 12.2% to 13.1%**. This indicates slow structural transformation of the workforce.
- **Female earnings rose faster:**
  - Women's earnings grew faster than men's in multiple categories. Female earnings rose by **8.8% in self-employment**, **7.2% in regular salaried work**, and **5.4% in casual labour** from 2024 to 2025. This is positive, even though women still earn less in absolute terms.

CONTINUING CONCERNS IN PLFS 2025:

- **Female LFPR remains low:**

- Female LFPR stood at only **40.0%**, far below the **male LFPR of 79.1%**. This shows that a large share of women is still outside the labour force despite some improvement in participation over time.

- **Urban female unemployment remains high:**
  - Urban female unemployment remained high at **6.4%** in 2025, compared to **urban male UR of 4.2%** and **overall urban UR of 4.8%**. This shows that urban women continue to face greater barriers in finding work.
- **Vocational training penetration is weak:**
  - Only **4.2%** of persons aged **15–59 years** had received formal vocational/technical training. Even among the **15–29 age group**, the figure was only **5.0%**, indicating a serious skilling gap.
- **NEET levels remain high:**
  - A substantial section of youth remains outside both work and education. The report estimates **21.0%** of persons aged **15–24 years** and **25.0%** of those aged **15–29 years** as **NEET**. This reflects underutilised demographic potential.

NEET: Refers to individuals who are Not in Employment, Education or Training. In simple terms, it includes people (usually youth) who are:
- **not working**
- **not studying**
- **not undergoing any skill training**

It is used as an indicator of underutilised human potential in the economy.

- **Gender gaps persist:**
  - Gender disparities continue across the labour market. Women have lower participation, lower absolute earnings, and lower labour-market intensity. Men also work more hours across categories, including **17.5 hours more per week in urban self-employment**, **12.3 hours more in rural self-employment**, **7.9 hours more in regular salaried work**, and **6.9 hours more in casual labour**.

WAY FORWARD:

- **Raise female labour force participation:**
  - Expand affordable childcare and crèche facilities to reduce the care burden on women.
  - Improve safety, transport, and workplace conditions, especially in urban areas.
  - Promote flexible, part-time, and home-linked work opportunities where feasible.
  - Increase women's access to jobs in manufacturing, services, and the care economy.
  - Strengthen measures to reduce gender discrimination in hiring, wages, and retention.
- **Focus on urban employment challenges**
  - Create more jobs for educated youth and women in urban areas.
  - Promote labour-intensive sectors such as textiles, food processing, tourism, logistics, and retail.
  - Support urban MSMEs and start-ups that can absorb first-time job seekers.
  - Improve job-matching systems and employment exchanges in cities.
- **Strengthen skilling and vocational training**

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- Expand formal vocational and technical training, which currently covers only **4.2% of persons aged 15–59** and **5.0% of those aged 15–29**.
- Align skilling programmes with actual local and sectoral labour demand.
- Strengthen apprenticeship-based learning and industry partnerships.
- Improve quality, certification, and employability outcomes of training programmes.

- **Address high NEET levels**
  - Target youth who are **not in employment, education or training**, estimated at **21.0% in the 15–24 group** and **25.0% in the 15–29 group**.
  - Build stronger school-to-work transition programmes.
  - Provide career counselling, placement support, and re-entry pathways into education or training.
  - Focus especially on vulnerable youth, including young women.
- **Accelerate structural transformation**
  - Reduce excessive dependence on agriculture by promoting rural non-farm employment.
  - Support MSMEs, labour-intensive manufacturing, and local value chains.
  - Expand employment opportunities in manufacturing and services, whose shares are already rising.
  - Link industrial policy with employment generation, not just output growth.
- **Improve quality of employment**
  - Build on the rise in regular salaried jobs from **22.4% to 23.6%**.
  - Focus on stable, productive, and better-paid jobs rather than mere employment numbers.
  - Reduce informality and improve working conditions.
  - Address gender gaps in earnings and hours worked through targeted labour-market reforms.

CONCLUSION:

- The PLFS 2025 report shows a labour market that is broadly stable, modestly improving in unemployment and job quality, and gradually shifting from agriculture toward manufacturing and services, but still marked by low female participation, high youth vulnerability, and weak skilling penetration.

PRACTICE QUESTION

Q. "While the PLFS 2025 reflects improvements in employment indicators, structural challenges persist". Critically examine the trends in India's labour market based on the report. (15 marks, 250 words)

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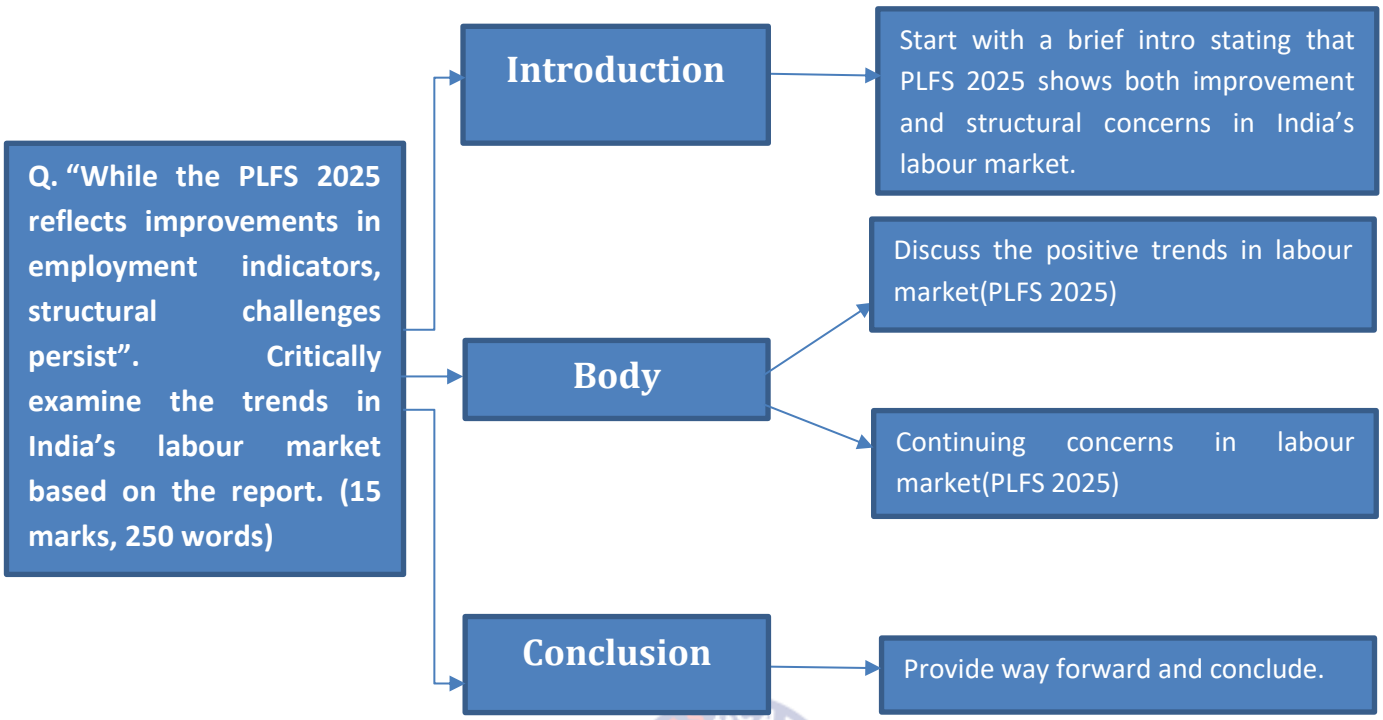

MODEL ANSWER

The PLFS 2025 presents a mixed picture of India's labour market, while headline indicators **show stability, modest decline in unemployment, and a gradual shift towards better-quality and non-farm jobs**, the report also highlights persistent concerns such **as low female participation, high urban female unemployment, weak skilling, and sizeable NEET levels.**

Positive trends in labour market (PLFS 2025):

1. **Stability in labour market indicators:** The labour market remained stable with **LFPR at 59.3%** and **WPR at 57.4%**, indicating no major decline in participation or employment. Rural participation, especially among women (**45.9%**), also remained strong.
2. **Improvement in unemployment:** The **overall unemployment rate** remained low at **3.1%**, while **youth unemployment declined to 9.9%**. Both rural and urban youth unemployment showed improvement, reflecting better labour absorption.
3. **Rise in better-quality jobs:** The share of **regular salaried employment increased to 23.6%**, while self-employment declined to **56.2%**. This indicates a gradual shift toward more stable and formal employment.
4. **Structural transformation of employment:** Employment is slowly shifting away from agriculture (**43.0%**) towards **manufacturing (12.1%)** and **services (13.1%)**, reflecting diversification of the economy.
5. **Faster growth in female earnings:** Women's earnings grew faster across categories—**8.8% in self-employment**, **7.2% in salaried work**, and **5.4% in casual labour**, indicating some improvement in economic participation.

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Continuing concerns in labour market (PLFS 2025):

1. **Low female labour force participation:** Female LFPR remains low at **40.0%**, far below the male LFPR of **79.1%**, reflecting structural and socio-cultural barriers.
2. **High urban female unemployment:** Urban female unemployment remains elevated at **6.4%**, higher than male and overall urban unemployment, indicating limited employment opportunities for women.
3. **Skilling deficit:** Only **4.2%** of persons aged **15–59** and **5.0%** of youth have received formal vocational training, pointing to a major skill gap.
4. **High NEET population:** Around **21% (15–24 years)** and **25% (15–29 years)** are **NEET**, indicating underutilised youth potential and weak school-to-work transition.
5. **Persistent gender gaps:** Women continue to lag in participation, earnings, and work intensity, with men working significantly more hours across employment categories.

Way Forward:

- **Enhancing female participation:**
  - Expand childcare, improve safety, and promote flexible work opportunities.
  - Increase women's access to manufacturing and service sector jobs.
- **Addressing urban employment challenges:**
  - Promote labour-intensive sectors like textiles, tourism, and logistics.
  - Strengthen MSMEs and job-matching systems in urban areas.
- **Strengthening skilling ecosystem:**
  - Expand vocational training beyond the current **4–5% coverage**.
  - Align training with industry needs and promote apprenticeships.
- **Reducing NEET levels:**
  - Develop school-to-work transition systems and career counselling.
  - Provide targeted support to vulnerable youth, especially women.
- **Accelerating structural transformation:**
  - Promote rural non-farm employment and labour-intensive manufacturing.
  - Link industrial policy with employment generation.
- **Improving job quality:**
  - Increase formalisation and build on rising salaried employment.
  - Reduce gender gaps in wages and working conditions.

The PLFS 2025 report shows a labour market that is broadly stable, modestly improving in unemployment and job quality, and gradually shifting from agriculture toward manufacturing and services, but still marked by low female participation, high youth vulnerability, and weak skilling penetration.

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23. INDIA'S 7TH NATIONAL REPORT TO THE CONVENTION ON BIOLOGICAL DIVERSITY

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment and Ecology

REFERENCE NEWS:

India has submitted its **7th National Report to the Convention on Biological Diversity (CBD)**, assessing the country's progress toward the **2030 biodiversity targets under the Kunming–Montreal Global Biodiversity Framework (KMGBF)** adopted in 2022.

Key Findings

- The KMGBF sets **23 global biodiversity targets for 2030** such as conserving **30% of land and seas**, restoring degraded ecosystems, reducing pollution, and preventing species extinction.
- India aligned its **National Biodiversity Strategy and Action Plan (NBSAP)** with these global goals and created **23 national biodiversity targets with 142 indicators** to monitor progress.

However, the report finds that **only 2 out of the 23 targets are clearly on track for 2030**.

Progress Achieved

- **Forest Cover and Ecosystem Planning:**
  - India's **forest and tree cover is 827,357 sq km (25.17% of geographical area)**.
  - Between **2021–2023, forest and tree cover increased by 1,445 sq km**.
  - Wetland inventories have been completed nationwide and **Integrated Coastal Zone Management plans** are being implemented.
- **Ecosystem Restoration**
  - **29.77% of India's land (about 97 million hectares)** is degraded.
  - Under the **Bonn Challenge**, India aims to restore **26 million hectares of degraded land by 2030**.
  - **24.1 million hectares have already been restored or are under restoration**.
  - Forest carbon stock increased to **7,285.5 million tonnes**.
  - Mangrove cover and bamboo area have expanded.
- **Species Conservation:** The report highlights success in protecting flagship species:
  - **Tiger population: 3,167 (Tiger Census 2022)**
  - Increase in **Asiatic lions (16th Lion Census in May 2025, marking a 32.2% increase)**
  - Stable or rising **one-horned rhinoceroses' populations**
  - National **snow leopard population assessment completed**
  - **Vulture conservation breeding programmes ongoing**
- **Conservation Coverage**

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- India's **protected areas cover slightly over 5% of its geographical area**.
- Marine protected areas are increasing and **Other Effective Area-Based Conservation Measures (OECMs)** are being explored.
- However, the report does **not clearly indicate whether India can achieve the global "30×30" goal** of conserving 30% of land and sea by 2030.

○ **Integration of Biodiversity in Agriculture**

- **Agroforestry covers about 8.65% of India's geographical area**.
- Trees outside forests (TOF) contribute significantly to total tree cover.
- Mangrove expansion and increased forest carbon stocks support climate mitigation.
- But data on **pesticide reduction, nutrient runoff, and agricultural biodiversity loss** remains limited.

SIGNIFICANCE OF THE CBD AND INDIA'S 7TH NATIONAL BIODIVERSITY REPORT FOR INDIA:

○ **Strengthens India's Global Environmental Leadership:** India is one of the **17 megadiverse countries**, hosting nearly **7–8% of global biodiversity**. Participation in the CBD enables India to shape global biodiversity governance.

- India hosted **COP 11 in Hyderabad (2012)**, influencing global biodiversity policies.
- The **7th National Report** feeds into global progress assessment of **23 biodiversity targets under KMGBF**.

○ **Provides a National Framework for Biodiversity Conservation:** CBD commitments require countries to prepare **National Biodiversity Strategy and Action Plans (NBSAP)** and periodic progress reports.

- India updated its **NBSAP aligned with KMGBF**, creating **23 national biodiversity targets and 142 indicators**.
- Institutions involved: **MoEFCC, National Biodiversity Authority, Wildlife Institute of India, and UNDP support**. This creates a **structured monitoring system for biodiversity conservation in India**.

○ **Helps Track Ecological Health and Conservation Outcomes:** The **7th National Report acts as a biodiversity "report card"**, evaluating ecosystem health and policy effectiveness.

- **Forest and tree cover had an** increase of **1,445 sq km between 2021–2023**.
- **Forest carbon stock** increased by **81.5 million tonnes.**
- These indicators show the **link between biodiversity conservation and climate mitigation**.

○ **Supports Ecosystem Restoration and Climate Goals:** CBD commitments complement **climate action and land restoration initiatives**.

- Under the **Bonn Challenge**, India pledged to restore **26 million hectares of degraded land by 2030**. **24.1 million hectares already restored or under restoration**.
- Restoration helps **carbon sequestration, soil conservation, and climate resilience**.

○ **Promotes Species Conservation and Wildlife Recovery:** The CBD framework encourages protection of threatened species and ecosystems.

- **Tiger population increased to 3,167**. Growth in **Asiatic lion populations**. Stable **one-horned rhinoceroses' populations**. First national **snow leopard population assessment** (**Snow Leopard Population Assessment in India (SPAI)**, released in January 2024)

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- Such results demonstrate the effectiveness of conservation programs like **Project Tiger and Project Lion**.

- **Encourages Ecosystem-based Land and Marine Governance:** CBD promotes biodiversity-inclusive spatial planning and marine conservation.
  - **Wetland inventories completed nationwide**. **Integrated Coastal Zone Management Plans** implemented. Identification of **Other Effective Area-Based Conservation Measures (OECMs)** beyond protected areas.
  - Digital environmental clearance platform **PARIVESH 2.0** integrates biodiversity data in development decisions.
- **Mobilizes International Cooperation and Funding:** The CBD provides access to international financial and technical assistance. India's report preparation supported under **Global Environment Facility (GEF-8)** and **UNDP**. Global initiatives like the **Kunming Biodiversity Fund** aim to finance biodiversity conservation.

CHALLENGES IN MEETING INDIA'S BIODIVERSITY TARGETS BY 2030:

India's **7th National Report to the Convention on Biological Diversity (CBD)** indicates that **only 2 of the 23 National Biodiversity Targets (NBTs) are currently on track**, highlighting several structural and ecological challenges that could hinder the achievement of the **Kunming–Montreal Global Biodiversity Framework (KMGBF) targets by 2030**.

- **Persistent Land Degradation:** Large-scale land degradation continues to threaten ecosystems despite restoration efforts.
  - According to the **Desertification and Land Degradation Atlas**, **29.77% of India's geographical area (about 97 million hectares)** is undergoing degradation. (According to the Desertification & Land Degradation Atlas of India 2021)
  - Arid regions of **Rajasthan and Gujarat** continue to experience desertification despite afforestation and watershed programmes.
- **Limited Protected Area Coverage:** India's conservation coverage remains far below global targets.
  - **Protected Areas cover only slightly above 5% of India's geographical area.**
  - The **KMGBF "30×30 target"** requires conserving **30% of land and sea by 2030**.
  - Expansion of **marine protected areas in the Andaman and Nicobar Islands** faces constraints due to security concerns, fishing livelihoods, and infrastructure development.
- **Bias Toward Flagship Species Conservation:** Conservation efforts are heavily focused on well-known species.
  - The report highlights successes for **tigers (3,167 individuals)**, **Asiatic lions**, and **one-horned rhinoceros**.
  - However, there is **limited data on lesser-known taxa such as insects, fungi, amphibians, and reptiles**.
  - Species like the **Great Indian Bustard** remain critically endangered despite protection efforts.

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- **Fragmented Biodiversity Data and Monitoring Systems:** Effective biodiversity monitoring is hampered by data fragmentation.
    - Biodiversity data is **scattered across ministries and institutions**, and **several of the 142 indicators lack standardised monitoring protocols**.
    - Data collection occurs at **different time intervals**, making long-term comparisons difficult. Rapid changes in **satellite monitoring technologies** complicate comparison of ecological datasets over time.
- **Agricultural Practices Driving Biodiversity Loss:** Unsustainable agriculture continues to impact ecosystems.
    - Although **agroforestry covers about 8.65% of India's geographical area**, the report highlights limited quantitative analysis on **pesticide use, nutrient runoff, and soil degradation**.
    - Excessive fertiliser and pesticide use in **Punjab and Haryana** has contributed to biodiversity decline in agricultural ecosystems.
- **Invasive Alien Species:** Invasive species threaten native biodiversity and ecosystem balance.
    - Monitoring protocols for invasive species are **not yet standardised nationwide**.
    - The invasive plant **Lantana camara** has spread across large areas of forests such as **Bandipur and Nagarhole**, suppressing native vegetation and affecting wildlife habitats.
- **Climate Change Impacts:** Climate change is increasingly undermining biodiversity conservation gains.
    - Rising frequency of **floods, droughts, heat waves, and forest fires** is affecting ecosystems across India.
    - Recent **forest fires in Uttarakhand and Odisha** have destroyed restored habitats and disrupted wildlife corridors.
- **Institutional and Financial Constraints:** Biodiversity conservation requires large financial and technical resources.
    - The report highlights **limited financial and technical capacity** for monitoring biodiversity indicators and implementing conservation programmes.
    - Many **Biodiversity Management Committees (BMCs)** at the local level lack adequate funds and technical support to maintain **People's Biodiversity Registers (PBRs)**.

WAY FORWARD:

- **Establishing Legally Binding Targets and Enforcement Mechanisms**: Countries could report on national biodiversity action plans and submit progress reports, with potential sanctions or penalties for significant non-compliance.
- **Increasing Financial Resources for Biodiversity:** The funding gap for biodiversity can be addressed through increased contributions from developed countries, innovative financing mechanisms, and incentives for private-sector investments.
    - **Costa Rica's Debt-for-Nature swap agreements** help alleviate national debt in exchange for conservation efforts. A similar model could be adopted under the UNCBD to help biodiversity-rich developing nations.
- **Strengthening Data Collection and Monitoring:** Utilizing satellite imagery and AI-powered data analytics could help track deforestation rates, species populations, and habitat health. Developing a biodiversity equivalent of the Global Carbon Atlas would allow easy access to reliable data.
    - The **UN Biodiversity Lab provides data and geospatial analysis tools** for countries to monitor biodiversity indicators, which could be expanded and made mandatory for all signatories.
- **Integrating Biodiversity into National Policy and Development Plans:** Countries could establish "No Net Loss" policies, ensuring any development project offsets its biodiversity impact by investing in conservation or restoration elsewhere.
    - **In the European Union, the Green Infrastructure Strategy** requires that biodiversity considerations are integrated into regional development, transport, and energy policies, creating a framework for balancing growth and conservation.
- **Promoting Indigenous and Local Community Participation**: Expanding the scope of the Nagoya Protocol on Access and Benefit Sharing to include indigenous rights protection can encourage communities to participate in conservation efforts and ensure fair compensation for their knowledge and resources.
    - **In Canada, the Indigenous Guardians Program** allows indigenous communities to oversee conservation areas, blending traditional knowledge with modern science for effective biodiversity management.
- **Strengthening Coordination Across Environmental Agreements:** Coordination between the UNCBD, UNFCCC (climate), and UNCCD (desertification) can maximize collective impact. For example, biodiversity protection, climate adaptation, and land restoration are interconnected goals, so aligning these agreements can enhance efficiency and outcomes.
    - **The Great Green Wall Initiative in Africa,** aimed at combating desertification, is a cross-agency project that addresses climate resilience, biodiversity, and land restoration goals simultaneously.
- **Promoting Sustainable Agriculture and Reducing Harmful Subsidies:** Reforms to agricultural subsidies and incentives for sustainable practices can reduce habitat degradation. Subsidies that encourage overuse of fertilizers or unsustainable land use should be reallocated to support practices like organic farming and agroforestry.

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- **The EU's Common Agricultural Policy (CAP)** is transitioning to link farm subsidies with sustainable practices, an approach that could serve as a model for biodiversity-sensitive agricultural policies globally.

- **Adopting a Rights-Based Approach to Conservation**: A rights-based approach ensures that biodiversity conservation respects the rights of indigenous and local communities. This includes recognizing land rights and providing legal support to prevent encroachments on conservation lands.
    - In **Ecuador**, the Constitution grants rights to nature, recognizing ecosystems as subjects of rights. Such approaches can reinforce biodiversity protection while protecting communities dependent on these ecosystems.
- **Developing Biodiversity Education and Public Awareness**: Annual biodiversity education programs in schools and community-based initiatives can enhance awareness and community involvement in biodiversity-friendly practices.
    - **Japan's Satoyama Initiative** integrates local communities in ecosystem conservation through education and community management, building local stewardship for biodiversity.
- **Building a Resilient, Inclusive Global Biodiversity Framework:** The UNCBD could form a collaborative platform for public-private partnerships, offering incentives for businesses that contribute to biodiversity-positive outcomes.
    - The Business for Nature Coalition partners with companies to integrate biodiversity into corporate sustainability practices, demonstrating the role of private sectors in biodiversity goals.

PRACTICE QUESTION

Q. India's 7th National Report to the Convention on Biological Diversity highlights progress in ecosystem restoration and species conservation, yet warns that most biodiversity targets remain off track. Examine. (15 marks, 250 words)

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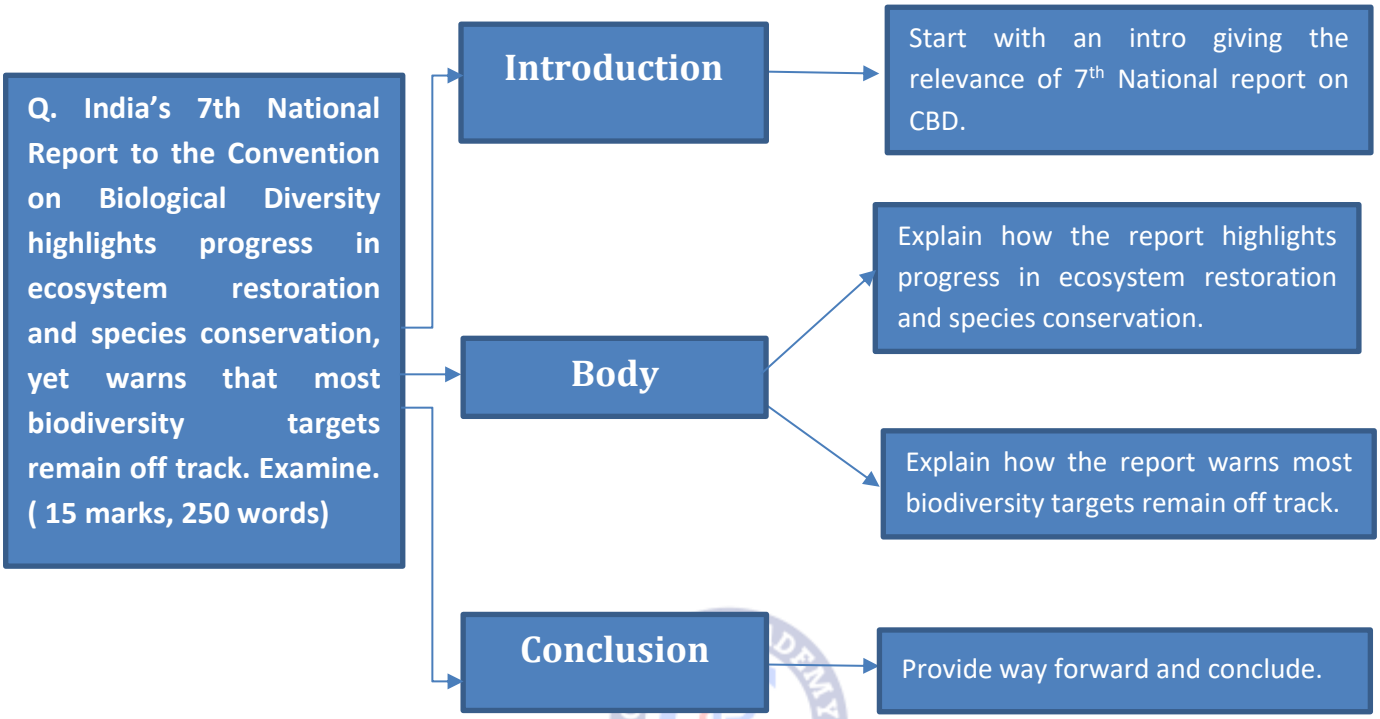

MODEL ANSWER

India submitted its **7th National Report to the Convention on Biological Diversity (CBD)** as part of its obligation to monitor progress toward the **23 National Biodiversity Targets aligned with the Kunming–Montreal Global Biodiversity Framework (KMGBF) for 2030**. The report acts as a national biodiversity "report card", showing measurable progress in restoration and species recovery but indicates that **only two targets are currently on track for 2030**.

Progress in Ecosystem Restoration and Species Conservation

- **Increase in forest and tree cover**: Forest and tree cover has reached **827,357 sq km (25.17% of India's geographical area)** with an increase of **1,445 sq km between 2021–2023**.
- **Advances in ecosystem restoration**: India has restored or placed under restoration **24.1 million hectares of degraded land** against its **Bonn Challenge target of 26 million hectares by 2030**.
- **Increase in forest carbon stock**: Forest carbon stock has risen to **7,285.5 million tonnes**, supporting climate mitigation efforts.
- **Mangrove and bamboo expansion**: Mangrove cover has increased and **bamboo area expanded by about 1,540 sq km**, strengthening ecosystem resilience.
- **Flagship species recovery**: India's **tiger population reached 3,167**, with growth in **Asiatic lions and stable one-horned rhinoceros populations**.
- **Improved biodiversity planning**: **Wetland inventories**, **eco-sensitive zones**, and **Integrated Coastal Zone Management plans** strengthen ecosystem-based governance.
- **Marine and landscape conservation efforts**: Expansion of **marine protected areas** and identification of **Other Effective Area-Based Conservation Measures (OECMs)**.

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Warnings showing why Biodiversity Targets Still Off Track

- **Persistent land degradation**: Around **29.77% of India's land (97 million hectares)** continues to experience degradation. (According to the Desertification & Land Degradation Atlas of India 2021)
- **Low conservation coverage**: Protected areas cover **just over 5% of India's geographical area**, far below the **30×30 conservation target**.
- **Bias towards flagship species**: Conservation data focuses mainly on tigers, lions, and rhinos, with **limited monitoring of lesser-known species**.
- **Fragmented biodiversity monitoring systems**: Biodiversity data remains **scattered across ministries and institutions**, with several indicators lacking standardized protocols.
- **Agricultural pressures on ecosystems**: Excessive fertiliser and pesticide use contributes to biodiversity loss in agricultural landscapes.
- **Invasive alien species threats**: Species such as **Lantana camara** are spreading across forests and disrupting native ecosystems.
- **Climate change impacts**: Rising **forest fires, floods, droughts, and heatwaves** threaten habitats and wildlife populations.

Way Forward

- Expand **protected areas and OECMs** to approach the **30×30 conservation goal**.
- Strengthen **national biodiversity monitoring using satellite and digital platforms**.
- Promote **sustainable agriculture and agroforestry practices**.
- Enhance **community participation through Biodiversity Management Committees and People's Biodiversity Registers**.
- Increase **financial resources and international cooperation** for biodiversity conservation.

India's 7th National Biodiversity Report demonstrates progress in ecosystem restoration and flagship species conservation but highlights significant ecological and governance gaps. Achieving the **2030 biodiversity targets will require stronger implementation, improved monitoring systems, and deeper integration of biodiversity considerations into development planning.**

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24. INDIA'S VULNERABILITY TO A MIDDLE EAST OIL CRISIS

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development

REFERENCE NEWS:

The escalating geopolitical tensions in **West Asia**, particularly the risk of disruption in the **Strait of Hormuz**, pose a major threat to India's macroeconomic stability due to its heavy dependence on imported crude oil. The **Strait of Hormuz**, which carries **about 20% of global oil supply (around 20 million barrels per day)**, remains a critical chokepoint. Any blockade would severely affect India because of its dependence on Gulf suppliers.

INDIA'S HIGH DEPENDENCE ON IMPORTED OIL:

- **Why the Current Crisis Is Different from Past Oil Shocks:** Despite risks, the current situation differs from earlier crises:
  - **Oil prices (~$80 per barrel)** remain far below the **$130 levels during the 2022 Russia–Ukraine energy crisis**.
  - The shock is **limited mainly to oil and LNG**, unlike earlier crises where **coal, electricity, and gas prices surged simultaneously**.
  - Oil now accounts for **less than 3% of global electricity generation**, compared to **25% during the 1970s oil crisis**.
- **High Import Dependence for Energy Needs:** India is among the **largest energy importers in the world**.
  - India imports **around 85–88% of its crude oil requirements**.
  - Nearly **50% of natural gas demand is met through LNG imports**.
  - India is the **second-largest LPG importer and the fourth-largest LNG importer globally**.
  - A **$10 rise in crude oil prices can widen India's Current Account Deficit (CAD) by 0.3–0.4% of GDP**, increasing import expenditure by **over $10 billion**.
- **Major Sources of India's Crude Oil Imports:** India imports crude oil from **over 40 countries** to diversify supply risks.

Key Suppliers (2026 estimates)

Country	Approximate Supply
Russia	~1.04 million barrels/day
Saudi Arabia	~1.01 million barrels/day

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Country	Approximate Supply
Iraq	~0.98 million barrels/day
UAE	~0.55 million barrels/day
USA	~0.22 million barrels/day

- Other suppliers include **Nigeria, Angola, Brazil, Mexico, and Guyana**.
- After Western sanctions on Russia, **discounted Russian Urals crude became India's largest import source**. In 2025, India purchased nearly 263 million tonnes of crude of which 85 million tonnes or 32.3% came from Russia.
- India has diversified its portfolio and added **West Africa, US, Latin America to its supplier list.**

- **Types of Crude Oil Imported:** India imports multiple crude grades depending on refining capabilities.
  - **Light sweet crude**: Brent (North Sea), WTI (USA)
  - **Medium sour crude**: Russian Urals, Middle Eastern grades
  - **Heavy sour crude**: Mexico's Maya crude
  - India's **advanced refineries such as Jamnagar (Reliance) and Visakhapatnam (HPCL)** can process high-sulphur crude efficiently.
- **Natural Gas Imports (LNG):** Natural gas imports mainly occur in the form of **Liquefied Natural Gas (LNG)**. **Major LNG Suppliers**
  - **Qatar**: accounts for nearly **50% of India's LNG imports**
  - **United States, Australia, UAE, Oman, Nigeria**
  - LNG is widely used in **fertiliser plants, electricity generation, and city gas networks (CNG/PNG)**.
  - India's total gas demand is about **190 million standard cubic metres per day (mscmd)**, of which **around half is imported LNG**.
- **LPG Imports:** Liquefied Petroleum Gas (LPG) is essential for household cooking fuel. India has **over 33 crore LPG connections**. Annual consumption is about **31 million tonnes**. **About 58–65% of LPG demand is met through imports**.
  - Major LPG suppliers: **Saudi Arabia, UAE, Qatar, Kuwait**
  - India signed an agreement with the **United States to import 2.2 million tonnes of LPG annually**.
- **Strategic Maritime Routes for Energy Imports:** Energy imports largely depend on critical global shipping routes.
  - **Strait of Hormuz:** Handles **about 20% of global petroleum trade**. Around **50% of India's crude oil imports and over 60% of LNG/LPG shipments pass through it**. The West Asia conflict has already disrupted **one-third of India's natural gas imports** due to shipping restrictions.

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- **Domestic Production (Limited but Important):** Despite high imports, India has some domestic production sources. Major oil & gas fields:
  - **Mumbai High (Arabian Sea)** – largest oil field
  - **Krishna-Godavari Basin** – major gas production hub
  - **Barmer Basin (Rajasthan)** – Mangala, Bhagyam, Aishwarya fields
  - **Assam fields (Naharkatiya, Moran), Cambay Basin (Gujarat)**
  - Domestic production supplies: **12–15% of crude oil, around 50% of natural gas**
- **Strategic Energy Security Measures:** India has adopted several strategies to manage import dependence.
  - **Strategic Petroleum Reserves:** Underground reserves located at **Visakhapatnam, Mangaluru, Padur.**
  - These reserves cover around **9.5 days of consumption**, while commercial stocks provide **about 65 days**, giving a total buffer of **around 74 days**.

HOW OIL PRICE SHOCKS AFFECT THE INDIAN ECONOMY?

Because of this high dependence, fluctuations in global oil prices transmit quickly into India's macroeconomic system.

- **Widening of Current Account Deficit (CAD):** Higher oil prices increase India's import bill, worsening the balance of payments.
  - Estimates show that **every $10 increase in Brent crude widens India's CAD by about 0.3–0.4% of GDP**, adding **over $10 billion to import expenditure**.
  - During the **2022 Russia–Ukraine energy crisis**, India's oil import bill surged sharply, widening the trade deficit.
- **Inflationary Pressures:** Oil is a key input across sectors such as transport, manufacturing, and agriculture. Higher fuel prices increase **transportation costs, logistics expenses, and fertilizer prices**.
  - A **$10–15 per barrel increase can add about 30 basis points to CPI inflation**.
  - Diesel price increases raise **freight charges**, which eventually increase food prices.
- **Slower Economic Growth:** Higher energy costs increase production costs and reduce consumption. Studies suggest oil shocks may **reduce GDP growth by around 0.2 percentage points**.
  - Industries such as **aviation, transportation, and petrochemicals** face rising input costs during oil price spikes.
- **Currency Depreciation:** Higher import bills increase demand for foreign currency. This puts downward pressure on the **Indian Rupee**.
  - When oil prices rise sharply, the **RBI often intervenes in forex markets using reserves to stabilise the rupee**.
- **Monetary Policy Tightening:** Oil-driven inflation complicates the Reserve Bank of India's monetary policy. To control inflation, the **RBI may raise interest rates or tighten liquidity**.
  - Higher interest rates increase **borrowing costs for businesses and households**, slowing credit growth.

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- **Fiscal Pressure on Government:** The government often absorbs part of the oil price increase through subsidies.
    - **LPG subsidy and fuel tax adjustments** increase fiscal burdens. During crises the government may reduce **excise duty on petrol and diesel**, lowering tax revenue.
- **Impact on Household Welfare:** Higher fuel costs reduce disposable income and purchasing power. Rising LPG and petrol prices increase **household expenditure**, particularly affecting middle- and low-income groups.
    - Inflation reduces disposable income, forcing households to dip into savings, which lowers **investment capital availability**.
- **Sectoral Impacts:** Certain sectors are highly sensitive to fuel costs. Major affected **sectors transport and logistics, aviation, fertilizer industry, power generation, petrochemicals.**
    - Airlines often raise **airfares** when aviation turbine fuel (ATF) prices rise.

MEASURES AVAILABLE FOR INDIA TO MANAGE AN OIL PRICE–DRIVEN ECONOMIC CRISIS:

- **Diversification of Energy Import Sources:** India can reduce dependence on West Asian suppliers by expanding imports from other regions.
    - India already imports crude from **Russia (≈1.04 million barrels/day), Saudi Arabia (≈1.01 mbpd), Iraq (≈0.98 mbpd), UAE, and the USA**. Emerging suppliers include **Brazil, Guyana, Nigeria, and Mexico**.
    - India has **increased purchases of discounted Russian crude** after the Ukraine war to cushion price shocks.
- **Expansion of Strategic Petroleum Reserves (SPR):** Strategic reserves act as emergency buffers during supply disruptions.
    - India maintains reserves at **Visakhapatnam, Mangaluru, and Padur**, covering about **9.5 days of consumption**. Combined with refinery stocks, India has **about 74 days of crude reserves**.
- **Increasing Domestic Oil and Gas Production:** Boosting domestic exploration can reduce import dependence. Government initiatives like **Mission Anveshan** aim to explore new offshore basins such as the **Mahanadi Basin**.
- **Diversifying LNG and LPG Supply Chains:** India is increasingly sourcing LNG from multiple countries. **Qatar supplies about half of India's LNG imports**, but India is also importing from **United States, Australia, Nigeria, Oman.** India signed a **2.2 million tonnes annual LPG import agreement with the United States** to reduce West Asian dependence.
- **Strengthening Energy Efficiency and Demand Management:** Reducing consumption during crises helps manage supply shortages. Promote **energy-efficient transport and industries.** Encourage **public transport and fuel conservation.** Governments can adopt emergency measures similar to **energy conservation campaigns during oil crises**.
- **Accelerating Renewable Energy Transition:** Reducing fossil fuel dependence is critical for long-term resilience. India targets **500 GW of non-fossil fuel capacity by 2030.** National initiatives like **National Green Hydrogen Mission** aim to reduce fossil fuel imports.
- **Strengthening Maritime and Strategic Partnerships:** Energy imports rely heavily on secure shipping routes. The **Strait of Hormuz handles around 20% of global petroleum trade** and carries about **half**

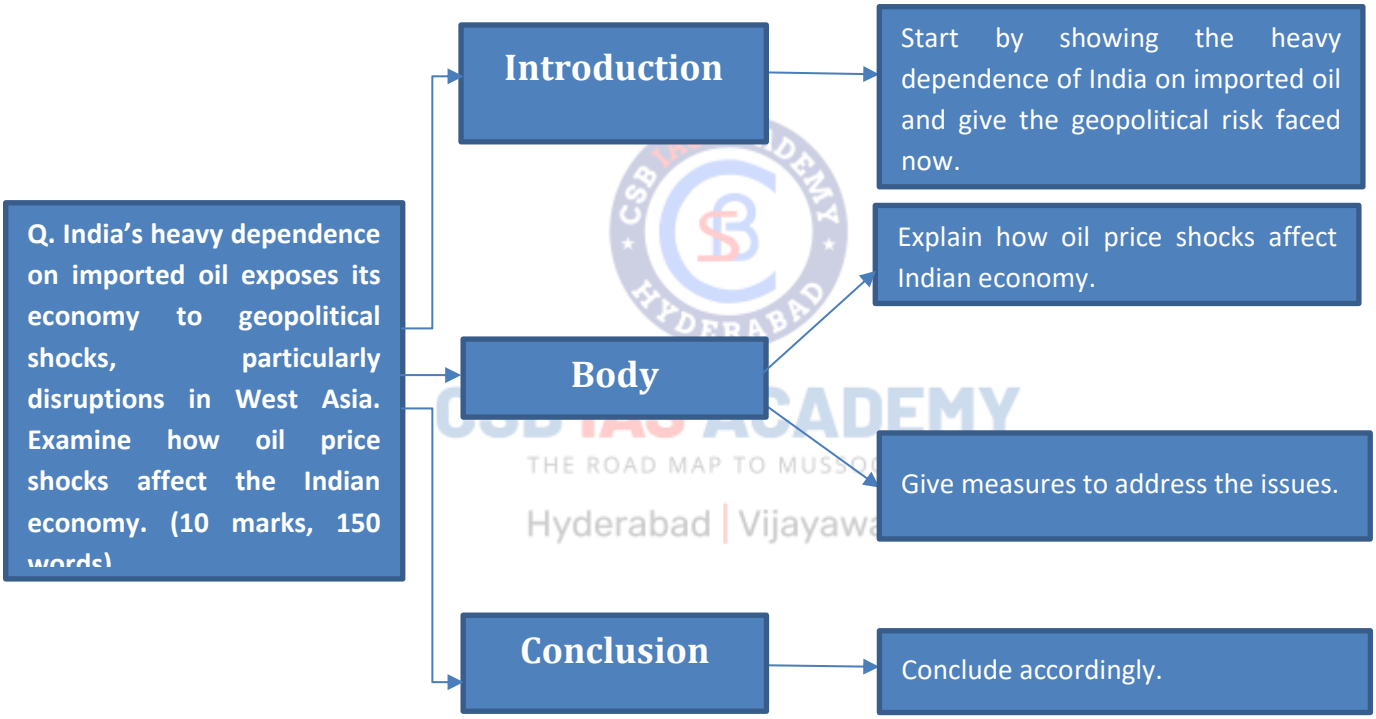
of India's crude imports. Strengthen **naval cooperation with Gulf countries.** Develop **alternative shipping routes and energy corridors**.

- **Fiscal and Monetary Policy Management:** Economic tools can cushion the domestic impact of oil shocks. **Reduce excise duties on fuel** during price spikes. Provide **targeted subsidies for LPG and fertilizers.** During previous oil shocks, India **cut fuel taxes and released reserves to control inflation**.

PRACTICE QUESTION

Q. India's heavy dependence on imported oil exposes its economy to geopolitical shocks, particularly disruptions in West Asia. Examine how oil price shocks affect the Indian economy. (10 marks, 150 words)

APPROACH



MODEL ANSWER

India is one of the largest energy-importing economies, importing **around 85–88% of its crude oil and nearly 50% of natural gas requirements**. Geopolitical disruptions in West Asia, especially around the **Strait of Hormuz—which carries about 20% of global petroleum trade—pose serious risks to India's energy security and macroeconomic stability**.

How Oil Price Shocks Affect the Indian Economy

- **Widening Current Account Deficit (CAD)**: Higher crude prices raise the import bill; a **$10 increase in oil prices can widen CAD by 0.3–0.4% of GDP (over $10 billion)**.
- **Inflationary pressures**: Higher fuel prices raise **transport, logistics, and fertilizer costs**, adding nearly **30 basis points to CPI inflation**.

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- **Slower economic growth**: Rising energy costs increase production costs and reduce demand, potentially **reducing GDP growth by around 0.2 percentage points**.
- **Currency depreciation**: Higher imports increase demand for foreign currency, putting **downward pressure on the rupee**.
- **Monetary policy tightening**: Inflationary pressures may compel the **RBI to raise interest rates or tighten liquidity**, increasing borrowing costs.
- **Fiscal stress**: Fuel subsidies and reductions in excise duties during crises increase **fiscal burdens on the government**.
- **Sectoral impacts**: Energy-intensive sectors such as **transport, aviation, fertilizer, power, and petrochemicals** face rising costs.

Measures to Strengthen India's Energy Security

- **Diversification of crude imports**: India imports oil from **Russia, Saudi Arabia, Iraq, UAE, and the USA**, and is expanding sourcing from **Africa and Latin America**.
- **Expansion of Strategic Petroleum Reserves (SPR)**: India maintains reserves at **Visakhapatnam, Mangaluru, and Padur**, covering **about 74 days of consumption when combined with refinery stocks**.
- **Increasing domestic production**: Enhance exploration in **Mumbai High, Krishna-Godavari Basin, and Mahanadi offshore regions**.
- **Diversifying LNG and LPG supplies**: India imports LNG from **Qatar, USA, Australia, and Nigeria**, and signed a **2.2 million tonnes annual LPG agreement with the United States**.
- **Accelerating renewable energy transition**: India aims to achieve **500 GW of non-fossil fuel capacity by 2030**, reducing dependence on fossil fuels.
- **Strengthening maritime security**: Enhancing cooperation with Gulf nations to secure **Sea Lines of Communication (SLOCs)**.

India's high dependence on imported energy makes it vulnerable to geopolitical disruptions and oil price volatility. Strengthening energy diversification, expanding strategic reserves, boosting domestic production, and accelerating the transition to renewable energy are essential for enhancing India's long-term economic and energy security.

25. URBAN FLOODING

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Disaster Management

REFERENCE NEWS:

Flooding in Indian cities cannot be understood only as a result of heavy rainfall or poor drainage systems. Instead, **hydrological hysteresis**, the tendency of landscapes to retain a "memory" of past rainfall, plays an important role in how floods develop and persist.

Concept of Hydrological Hysteresis

Hydrological hysteresis refers to the **path-dependent response of landscapes to rainfall**, meaning that the impact of rain depends not only on the current rainfall but also on **previous rainfall and existing moisture conditions**.

- Water accumulates in **soils, wetlands, aquifers, and floodplains** over time.
- As the monsoon continues, these storage spaces become **saturated**, reducing infiltration.
- Additional rainfall then turns into **surface runoff**, increasing flood risk even if rainfall intensity does not increase.

River and Floodplain Dynamics

Rivers respond differently during the **rising and falling phases of floods**.

- When rainfall increases, rivers first remain confined within their channels.
- Once banks are exceeded, water spreads into **floodplains, wetlands, and low-lying land**, slowing the flow.
- Even after rainfall reduces, the **stored water drains slowly**, causing flooding to persist for weeks.

Thus, a river at the same water level during the **receding stage behaves differently** from when it first reached that level because the surrounding landscape has already been altered by stored water.

URBAN FLOODING IN INDIA:

Urban flooding refers to the **temporary inundation of land, streets, or built-up areas in cities due to intense rainfall, overflowing water bodies, or inadequate drainage systems**. Unlike rural floods, urban floods occur **rapidly and with greater intensity** because urbanisation replaces permeable land with concrete surfaces, increasing surface runoff.

Urban flooding in India has intensified in recent decades.

- **Flood peaks in urban areas can be 1.8–8 times higher than rural areas**, while **flood volumes can increase up to 6 times** due to developed catchments.
- **More than 70% of Indian urban areas lack scientifically designed stormwater drainage systems.**
- According to the **NDMA**, urban flooding incidents have increased significantly since the early 2000s.

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- **Government Initiatives to Address Urban Flooding**
  - **NDMA Guidelines on Urban Flooding:** Recognises urban floods as a **separate disaster category**. Emphasises improved drainage planning, flood mapping, and early warning systems.
  - **AMRUT 2.0:** Focus on **stormwater drainage networks, rainwater harvesting, and rejuvenation of water bodies**.
  - **Model Building Bye-Laws (2016):** Mandates **rainwater harvesting for plots above 100 m²**.
  - **Amrit Sarovar Mission:** Restoration of water bodies to enhance **rainwater storage capacity**.
  - **GIS-Based Drainage Mapping:** Cities such as **Delhi and Bengaluru** are mapping drainage networks to redesign systems.

CAUSES OF URBAN FLOODING IN INDIA:

Urban flooding in India results from a combination of **natural factors and anthropogenic pressures**, particularly rapid urbanisation and climate-induced extreme rainfall. These factors increase surface runoff, overwhelm drainage infrastructure, and obstruct natural water channels.

- **Intensifying Rainfall and Climate Change:** Climate change has increased the **frequency of short-duration, high-intensity rainfall events**, which exceed the capacity of urban drainage systems.
  - India has witnessed a **threefold increase in extreme rainfall events since the 1950s** (IMD data).
  - **Delhi (2023):** Recorded **185.9 mm rainfall in a day**, causing the Yamuna to overflow and inundate large parts of the city.
  - **Chennai floods (2015):** Triggered by record monsoon rainfall exceeding **490 mm in 24 hours** in some areas.
- **Rapid and Unplanned Urbanisation:** Urban expansion replaces permeable land surfaces with **concrete buildings, roads, and pavements**, drastically reducing natural infiltration.
  - Developed urban catchments can increase **flood peaks by 1.8–8 times and flood volumes by up to 6 times** compared to rural areas.
  - **Bengaluru:** Nearly **80% of its lakes and wetlands have been encroached or degraded**, reducing natural rainwater storage.
  - **Gurugram:** Rapid real estate development on natural drainage channels frequently causes severe waterlogging during monsoon rains.
- **Encroachment of Floodplains, Wetlands, and Water Bodies:** Urban development has increasingly occupied **natural floodplains, lakes, and wetlands**, which traditionally acted as flood buffers.
  - **Mumbai:** Large-scale encroachment along the **Mithi River floodplain** worsened the **2005 floods**, which caused over **500 deaths**.
  - **Hyderabad:** Encroachments around **Musi River and urban lakes** contributed to severe flooding in **2020**.
  - **Bengaluru:** Loss of interlinked lakes has disrupted natural drainage pathways.
- **Inadequate and Outdated Stormwater Drainage Systems:** Most Indian cities have drainage systems designed decades ago for **lower rainfall intensities**, which are now frequently exceeded.

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- Mumbai's drainage network, built during the **British period**, was designed for **25 mm rainfall per hour**, while recent storms often exceed **100 mm per hour**.
- **Delhi:** Drainage planning is based on the **1976 Master Plan**, which assumed rainfall of **50 mm/day**, far lower than current extreme events.

- **Poor Solid Waste Management:** Improper disposal of solid waste and construction debris often **clogs stormwater drains and natural waterways**.
  - Plastic waste blocked drainage channels during the **2015 Chennai floods**, aggravating waterlogging.
  - Several cities including **Patna, Bhopal, and Guwahati** frequently face urban flooding due to blocked drains.
- **Loss of Green Cover and Wetlands:** Deforestation and the disappearance of urban green spaces reduce the land's ability to **absorb and store rainwater**. Wetlands act as **natural sponges** that absorb excess rainfall.
  - **Guwahati:** Hill deforestation and wetland loss in the **Deepor Beel ecosystem** have increased urban flooding.
  - **Kolkata:** Wetlands in the **East Kolkata Wetlands** serve as natural flood buffers, highlighting their importance.
- **Topography and Coastal Vulnerability:** Several Indian cities are naturally located in **low-lying or coastal regions**, making them more prone to flooding.
  - **Mumbai and Kolkata** lie in low-lying coastal zones affected by **tidal influences and storm surges**.
  - **Chennai** is located on a flat coastal plain, slowing drainage into the sea.
- **Hydrological Changes in Urban Landscapes:** Urban development alters natural hydrological systems, increasing runoff and delaying drainage.
  - Research on **hydrological hysteresis** shows that saturated soils, lakes, and floodplains retain water and release it slowly.
  - In **Bengaluru (2024 floods)**, lakes such as **Kogilu and Doddabommasandra** overflowed after sustained rainfall, causing flooding even after rainfall intensity reduced.

CHALLENGES OF URBAN FLOODING:

- **Infrastructure and Urban Services Disruption:** Urban floods severely damage **critical infrastructure such as roads, bridges, transport networks, power supply, and drainage systems**.
  - The **Mumbai floods (2005)** caused massive disruption of suburban railways and road transport, paralysing the city for several days.
  - The **Chennai floods (2015)** submerged Chennai airport and large sections of highways, disrupting connectivity.
  - Damage to infrastructure also affects **electricity, telecommunications, and water supply**, resulting in cascading failures in urban services.
- **Economic and Industrial Losses:** Urban areas are centres of **finance, trade, manufacturing, and IT services**, so flooding results in major economic losses.

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- The **Mumbai floods (2005)** resulted in economic losses exceeding **$1 billion**, affecting financial markets and industries.
- The **Chennai floods (2015)** caused losses of around **₹15,000–20,000 crore**, impacting automobile and electronics industries.
- Business shutdowns, damaged supply chains, and loss of productivity significantly affect local and national economies.

- **Public Health and Disease Burden:** Flooding often leads to **public health emergencies** due to contamination of water sources and proliferation of disease vectors. Stagnant water becomes breeding grounds for mosquitoes, increasing diseases such as **dengue, malaria, and chikungunya**. Floodwaters mixed with sewage lead to outbreaks of **cholera, typhoid, and leptospirosis**.
  - After the **2018 Kerala floods**, there was a significant rise in **leptospirosis cases**.
- **Social Inequality and Vulnerability:** Urban floods disproportionately affect **poor and marginalised communities**, especially those living in informal settlements located in low-lying areas.
  - According to UN estimates, **India has one of the largest numbers of slum settlements located in flood-prone zones**.
  - During the **Mumbai floods (2005)** and **Chennai floods (2015)**, slum dwellers suffered the most severe losses due to weak housing and limited access to relief.
- **Environmental Degradation:** Urban flooding contributes to **pollution and ecological damage**. Floodwaters carry **industrial waste, sewage, plastics, and debris** into rivers and lakes.
  - In **Bengaluru**, floods have worsened pollution in urban lakes already contaminated by untreated sewage. Soil erosion and loss of vegetation also occur due to strong runoff.
- **Governance and Urban Planning Challenges:** Urban flooding exposes **institutional weaknesses in city planning, infrastructure management, and disaster preparedness**.
  - Many cities operate with **outdated drainage plans**; for example, Delhi's drainage planning is based on a **1976 master plan**.
  - Lack of coordination between **municipal bodies, urban development authorities, and disaster management agencies** delays response efforts.
- **Water Quality and Urban Water Security:** Flooding deteriorates water quality by contaminating **lakes, rivers, and groundwater sources**. Floodwaters often mix with untreated sewage due to **combined sewer and stormwater systems** in cities like Patna and Bhopal. Polluted water bodies reduce **urban water security and groundwater recharge capacity**.
- **Transportation and Mobility Disruptions:** Urban flooding severely disrupts **transport networks and mobility**. Waterlogging leads to **traffic congestion, road damage, and suspension of public transport services**.
  - In **Gurugram and Bengaluru**, heavy rainfall regularly causes severe traffic jams lasting several hours.

WAY FORWARD:

- **Climate-Resilient Urban Planning:** Urban master plans should incorporate **flood risk assessments and hydrological data** to guide land-use decisions. Restrict construction in **floodplains, wetlands, and natural drainage channels**. Integrate **urban flood risk maps** into city planning.

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- **Modernisation of Stormwater Drainage Systems:** Cities need **scientifically designed and well-maintained drainage networks** capable of handling extreme rainfall. Upgrade drainage systems to accommodate **1-in-10 or 1-in-25 years rainfall events**. Use **GIS-based mapping and modelling** to redesign urban drainage networks.
- **Restoration of Urban Water Bodies and Wetlands:** Urban lakes, wetlands, and floodplains act as **natural sponges that store excess rainwater**. Rejuvenate degraded lakes and restore their **interconnected drainage networks**. Protect wetlands through **strict land-use regulations**. Restoration of **Jakkur Lake in Bengaluru** has improved flood management and groundwater recharge.
- **Adoption of Nature-Based Solutions (Sponge City Approach):** Cities should adopt **Sustainable Urban Drainage Systems (SUDS)** that mimic natural hydrological processes. The **Sponge City initiative in China** demonstrates how urban landscapes can absorb and reuse rainwater effectively.
- **Integrated Watershed and Basin Management:** Urban flooding should be managed at the **watershed level rather than only within city boundaries**. Coordinate planning between **upstream and downstream regions**.
- **Strengthening Urban Governance and Institutional Coordination:** Urban flood management requires better coordination between multiple agencies. Implement **NDMA guidelines on urban flooding** effectively. Establish **dedicated urban flood management cells** in municipal bodies. Improve coordination among **municipal corporations, disaster management authorities, and urban planning agencies**.
- **Improved Early Warning Systems and Technology Use:** Technology can significantly improve preparedness and response. Use **remote sensors, real-time rainfall monitoring, and flood forecasting systems**. Deploy **GIS and satellite-based monitoring** for flood-prone zones. Develop **mobile-based early warning systems** to alert citizens. Singapore's **Smart Water Assessment Network (SWAN)** provides real-time monitoring of urban flooding.
- **Community Participation and Awareness:** Local communities play a critical role in flood mitigation. Promote awareness about **proper waste disposal and flood preparedness**. Encourage **community-based monitoring of drainage systems and water bodies**. Conduct **regular disaster preparedness drills** in flood-prone areas.

PRACTICE QUESTION

Q. Urban flooding has emerged as a major disaster management challenge in India due to rapid urbanisation and climate change. Discuss. (15 marks, 250 words)

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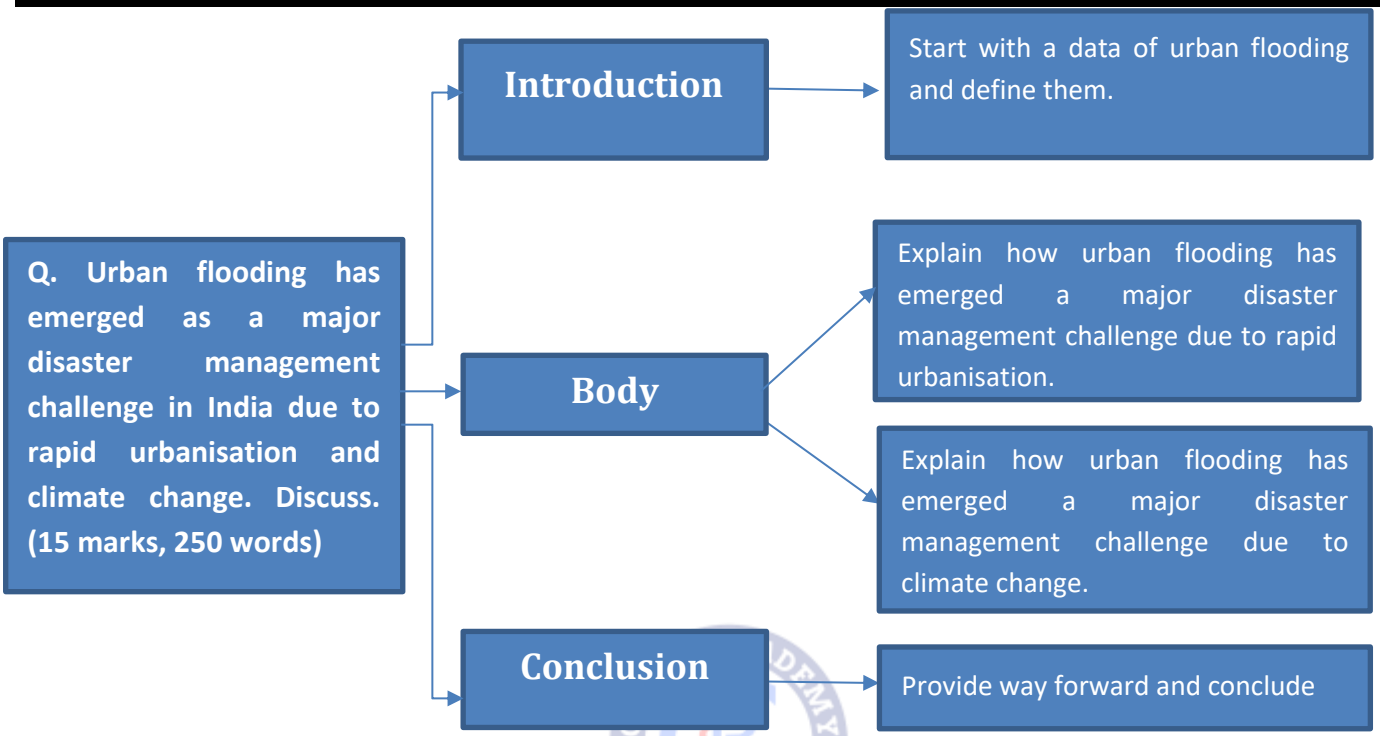
APPROACH



MODEL ANSWER

Urban flooding refers to the **temporary inundation of land, streets, and built-up areas in cities due to intense rainfall, overflowing water bodies, or inadequate drainage systems**. It occurs more rapidly than rural floods because urbanisation replaces permeable surfaces with concrete, increasing surface runoff. Flood peaks in urban areas can be **1.8–8 times higher and flood volumes up to 6 times greater than rural areas**, highlighting the increasing vulnerability of Indian cities.

Urban Flooding as a Disaster Management Challenge due to Rapid Urbanisation

- **Encroachment of Floodplains and Wetlands**: Urban expansion has led to construction on natural drainage systems and water bodies that previously absorbed excess rainfall. Encroachment along the **Mithi River floodplain** worsened the **Mumbai floods (2005)**, which caused over **500 deaths**.
- **Loss of Urban Lakes and Water Bodies**: Urban lakes act as natural storage systems that regulate stormwater flow. Their disappearance reduces water retention capacity. **Bengaluru has lost nearly 80% of its lakes and wetlands**, contributing to recurrent flooding in 2022–24.
- **Increased Impervious Surfaces**: Concrete roads, buildings, and pavements reduce infiltration and increase runoff, leading to flash floods.
- **Inadequate and Outdated Stormwater Drainage Systems**: Many drainage networks were designed decades ago for lower rainfall intensities. Mumbai's drainage system was designed for **25 mm/hour rainfall**, while current storms exceed **100 mm/hour**.
- **Poor Solid Waste Management**: Improper disposal of plastic waste and construction debris clogs stormwater drains. Blocked drainage channels aggravated waterlogging during the **2015 Chennai floods**.

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- **Unplanned Urban Growth in Flood-Prone Areas**: Rapid real estate development on natural drainage channels increases vulnerability. **Gurugram frequently experiences severe waterlogging** due to construction on natural drains.

Urban Flooding as a Disaster Management Challenge due to Climate Change

- **Increase in Extreme Rainfall Events**: Climate change has increased the frequency of **short-duration, high-intensity rainfall events**. India has witnessed a **threefold increase in extreme rainfall events since the 1950s** (IMD).
- **Short Duration High Intensity Downpours**: Heavy rainfall within a few hours overwhelms urban drainage infrastructure. **Delhi recorded 185.9 mm rainfall in a day in 2023**, causing severe flooding.
- **Rising Sea Levels in Coastal Cities**: Coastal cities face flooding due to storm surges and sea-level rise. Cities like **Mumbai, Chennai, and Kolkata** are vulnerable due to low-lying coastal geography.
- **Urban Heat Island Effect**: Urban heat islands intensify convection, leading to heavier local rainfall in cities.
- **Cyclones and Extreme Weather Events**: Climate change has increased the intensity of cyclones affecting coastal cities. Cyclonic rainfall contributed to the **Chennai floods (2015)**.
- **Hydrological Saturation and Hysteresis Effects**: Sustained rainfall saturates soils and wetlands, reducing infiltration and prolonging floods. **Bengaluru floods (2024)** occurred after lakes such as **Kogilu and Doddabommasandra** overflowed following continuous rainfall.

Way Forward

- **Climate-resilient urban planning** with restrictions on construction in floodplains and wetlands.
- **Modernisation of stormwater drainage systems** using GIS-based hydrological modelling.
- **Restoration of urban lakes and wetlands** to enhance natural water storage capacity.
- **Adoption of nature-based solutions** such as permeable pavements, green roofs, and sponge city models.
- **Improved early warning systems and disaster preparedness** through real-time rainfall monitoring.
- **Effective solid waste management and enforcement of land-use regulations**.

Urban flooding in India reflects the **combined impact of rapid urbanisation and climate-induced extreme rainfall**. Addressing this challenge requires **integrated urban planning, ecosystem restoration, and climate-resilient infrastructure** to ensure sustainable and flood-resilient cities.

26. ARTIFICIAL INTELLIGENCE IN EDUCATION

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Science and Technology >> Artificial intelligence

REFERENCE NEWS:

India is positioning itself as a **global AI powerhouse** by integrating Artificial Intelligence into its education system, research ecosystem, and skill development programs. The strategy aligns with **National Education Policy (NEP) 2020** and the **IndiaAI Mission (2024)** to develop a strong AI talent base and support economic growth.

ARTIFICIAL INTELLIGENCE (AI) ECOSYSTEM IN INDIA:

- In **2024**, about **89% of new startups in India were AI-powered**, and **87% of enterprises use AI technologies**.
- India had an **AI talent pool of 6–6.5 lakh professionals in 2024**, but will require **over 12.5 lakh AI professionals by 2027** (NASSCOM).
- The **AI market in India is expected to grow at 25–35% annually** until 2027.
- **Policy Framework and Vision: NEP 2020** recognises AI, big data, and machine learning as key drivers of future economic growth and innovation.
    - The **IndiaAI Mission (₹10,371.92 crore)** supports AI infrastructure, datasets, and application development across sectors such as education, agriculture, healthcare, and smart cities.
    - The approach focuses on **democratising AI access**, especially for rural, tribal, and aspirational districts.
- **AI Integration in School Education**
    - **CBSE introduced AI modules from Class VI onwards**, with AI as an optional subject for Classes IX–XII.
    - **NCERT textbooks** include AI-related content in computer science courses.
    - Initiatives such as **SOAR (Skilling for AI Readiness)** provide AI awareness, technical skills, and ethical understanding for students and teachers.
- **Digital Learning Platforms**
    - **DIKSHA Platform:** Uses AI features such as keyword search and accessibility tools for visually impaired learners.
    - **SWAYAM Platform:** Offers **110+ AI courses** from IITs and IISc with **over 41 lakh enrollments**.
- **AI in Higher Education**
    - **UGC curriculum** includes AI, big data analytics, machine learning, drones, and deep learning
    - **AICTE** integrates AI modules in engineering courses and conducts hackathons, faculty training, and scholarships.

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- Partnerships such as **Perplexity with AICTE** support AI-based research and innovation across institutions.

- **AI Infrastructure and Innovation Ecosystem:** Establishment of **Centres of Excellence in AI** across sectors like health, agriculture, sustainable cities, and education.
  - **Atal Innovation Mission (AIM)** operates **10,000 Atal Tinkering Labs across 722 districts**, promoting hands-on learning in AI, robotics, IoT, and cybersecurity.
  - AI labs have also been established in **NIELIT centres and ITIs across 27 states and UTs**.
- **Research and Responsible AI:** Government-funded AI research projects are underway at institutions like **IIT Delhi, IIT Roorkee, and IIT Jodhpur**.
  - Research areas include **flood detection (DeepFlood), bias mitigation, machine unlearning, explainable AI, and privacy-preserving AI**.
- **AI Skill Development Programs:** Major initiatives include:
  - **PMKVY 4.0:** AI training for youth (36,000+ trained).
  - **FutureSkills PRIME (with NASSCOM):** Over **16 lakh learners trained in emerging technologies**.
  - **SkillSaksham:** AI training in **200 ITIs**.
  - **YUVA AI for All:** AI literacy program targeting **1 crore citizens**.
- **Infrastructure for Digital Education**
  - Under **Samagra Shiksha**, **1.79 lakh ICT labs** have been approved with **₹7,634 crore investment**.
  - Current ICT infrastructure includes: **9.33 lakh schools with internet access, 4.5 lakh smart classrooms, 5.13 lakh schools with desktops, 3.82 lakh schools with tablets.**

SIGNIFICANCE OF AI IN EDUCATION SYSTEM IN INDIA:

- **Personalised and Adaptive Learning:** AI enables **customised learning pathways** based on the pace and capability of individual students. Adaptive learning systems analyse student performance and adjust the difficulty level accordingly, improving learning outcomes.
  - Platforms such as **Byju's, Vedantu, Embibe, and Toppr** use AI algorithms to provide personalised lessons, quizzes, and real-time feedback.
  - Studies show that AI-driven learning tools significantly enhance **student engagement and conceptual understanding**.
- **Improving Teaching Efficiency and Reducing Administrative Burden:** AI helps teachers by automating routine tasks, enabling them to focus more on teaching and mentoring. AI tools can assist in **grading assignments, attendance tracking, timetable scheduling, and performance analytics**.
  - According to **EY (2023)**, AI-based educational tools significantly reduce teachers' administrative workload.
  - Smart learning systems also provide **data-driven insights about student progress**, helping teachers design targeted interventions.
- **Bridging Rural–Urban and Social Inequalities in Education:** AI has the potential to **democratise access to quality education across regions and socio-economic groups**.

- A **Karnataka study (2023)** found that rural and urban students using AI-based mathematics tools showed **significant improvement in performance and engagement (p < 0.001)**.
- Initiatives such as **MindCraft** provide personalised mentorship to students in underserved schools.
- AI-based translation technologies are helping expand educational content into **regional languages**, improving inclusivity.

- **Enhancing Digital Learning Platforms and Online Education:** AI strengthens large-scale digital learning systems.
  - The **SWAYAM platform** offers multiple AI-based courses, enabling free access to higher education content.
  - The **DIKSHA platform** uses AI-based keyword search and accessibility tools such as **read-aloud features for visually impaired learners**.
  - AI-powered chatbots such as **Ferby** are already supporting **over 5 million Indian students** through multilingual tutoring.
- **Promoting Innovation and Research in Higher Education:** AI is transforming universities into centres of **innovation, research, and interdisciplinary learning**.
  - **Lovely Professional University (LPU)** uses AI for personalised learning systems, digital attendance, and AI research labs.
  - **Universal AI University in Maharashtra** offers specialised AI programs and uses a virtual AI assistant for student support.
  - AI-based platforms such as **EdgeUp Coaching** customise study schedules for competitive examinations like UPSC.
- **Supporting Government Education and Skill Development Initiatives:** AI is increasingly integrated into public education policies and programs.
  - **National Education Policy (NEP) 2020** recognises AI as a transformative technology and promotes AI education across all levels.
  - **CBSE introduced AI and IoT subjects from Classes VI–X** to build early digital literacy.
  - The **AI Pragya programme in Uttar Pradesh** trains teachers and students in AI with support from Microsoft, Intel, and HCL.
- **Preparing Students for Future Jobs and Digital Economy:** AI education equips students with skills required in emerging technology sectors.
  - According to **NASSCOM**, India had about **600,000–650,000 AI professionals in 2024**, but will require **over 1.25 million by 2027**.
  - Universities are offering **AI and Machine Learning programs**, hackathons, and startup incubation support.
  - AI labs and innovation hubs encourage students to develop solutions in **data science, robotics, and automation**.
- **Promoting Inclusive Education for Special Needs Students:** AI tools are helping students with learning disabilities and special educational needs.
  - Applications such as **Readabled** support children with dyslexia through interactive phonetic training.

- AI-based tools can detect **specific learning disorders such as dyslexia, dysgraphia, and dyscalculia**, enabling early intervention.

CHALLENGES OF INTEGRATION OF AI TO EDUCATION IN INDIA:

- **Digital Divide and Infrastructure Deficit:** Large disparities in digital infrastructure between urban and rural areas restrict AI adoption. Many government schools lack **reliable internet connectivity, devices, and digital labs**.
  - Affordable devices used in rural schools often lack **high processing power required for AI applications**.
  - Although over **9.33 lakh schools have internet connectivity**, a significant number still face issues of unstable networks and limited digital resources.
- **Shortage of Skilled Teachers and Capacity Gaps:** Many teachers lack adequate training to integrate AI tools effectively into teaching.
  - Studies indicate that **faculty readiness and digital literacy are key factors influencing AI adoption in universities**. Teachers often view AI as a complex "black box" technology and may resist its adoption due to lack of familiarity.
- **Overdependence on AI and Decline in Critical Thinking:** Excessive reliance on AI tools may reduce students' analytical and problem-solving abilities.
  - A **2023 U.S. survey found that about 30% of college students used AI to complete assignments they did not fully understand**, indicating the risk of academic shortcuts.
  - If AI is used as an "answer engine," students may rely on automated responses instead of developing conceptual understanding.
- **Data Privacy and Security Concerns:** AI systems collect large amounts of sensitive student data such as learning patterns, behaviour, and personal information. Without robust safeguards, this raises concerns about **data misuse, surveillance, and cyber threats**.
  - India's **Digital Personal Data Protection Act (2023)** highlights risks related to EdTech platforms storing and processing student data.
- **Algorithmic Bias and Cultural Limitations:** AI models may reflect biases present in training datasets. Many AI models are trained primarily on **Western datasets**, which may lead to culturally irrelevant or biased responses in Indian contexts. This can disadvantage students from **marginalised linguistic or socio-economic groups**.
- **High Cost of AI Infrastructure and Technology:** AI implementation requires substantial investment in **computing infrastructure, software, and training programs**. Advanced AI systems often require **high-performance computing infrastructure and specialised hardware**, which many educational institutions cannot afford.
- **Evaluation and Assessment Challenges:** Traditional examination systems focus on **memorisation and output-based evaluation**, whereas AI tools can easily generate answers. This creates difficulties in assessing **students' originality, reasoning ability, and conceptual understanding**. Educational institutions need to shift towards **process-based assessments such as projects, presentations, and problem-solving tasks**.

- **Ethical and Pedagogical Concerns:** AI cannot replace the **human aspects of teaching such as empathy, mentorship, and moral guidance**. Chatbots and AI tutors can provide information but cannot address **emotional, psychological, or motivational needs of students**.

WAY FORWARD:

- **Strengthen Digital Infrastructure:** Expand internet connectivity and provide affordable devices in rural areas. Public-private partnerships can help bridge the digital divide.
- **Teacher Training and Capacity Building:** Large-scale AI training workshops for teachers to integrate AI into pedagogy. Incentivise adoption rather than creating fear of replacement.
- **Ethical AI and Data Privacy:** Strict enforcement of the Digital Personal Data Protection Act (2023) for student safety. Develop India-specific AI ethics frameworks for education.
- **Inclusive AI Models**: Promote AI tools in regional languages (like TuluAI). Ensure AI platforms account for diverse socio-economic contexts.
- **Pedagogical Alignment:** Shift focus from AI as "answer engines" to Socratic AI models that encourage critical thinking. Pilot such models in higher education institutions.
- **Scaling Innovations:** Replicate successful models like Ferby chatbot (serving 5 million+ children) and EdgeUp Coaching for UPSC aspirants across states.

PRACTICE QUESTION

Q. Artificial Intelligence (AI) is transforming the education ecosystem in India. Examine. (15 marks, 250 words)

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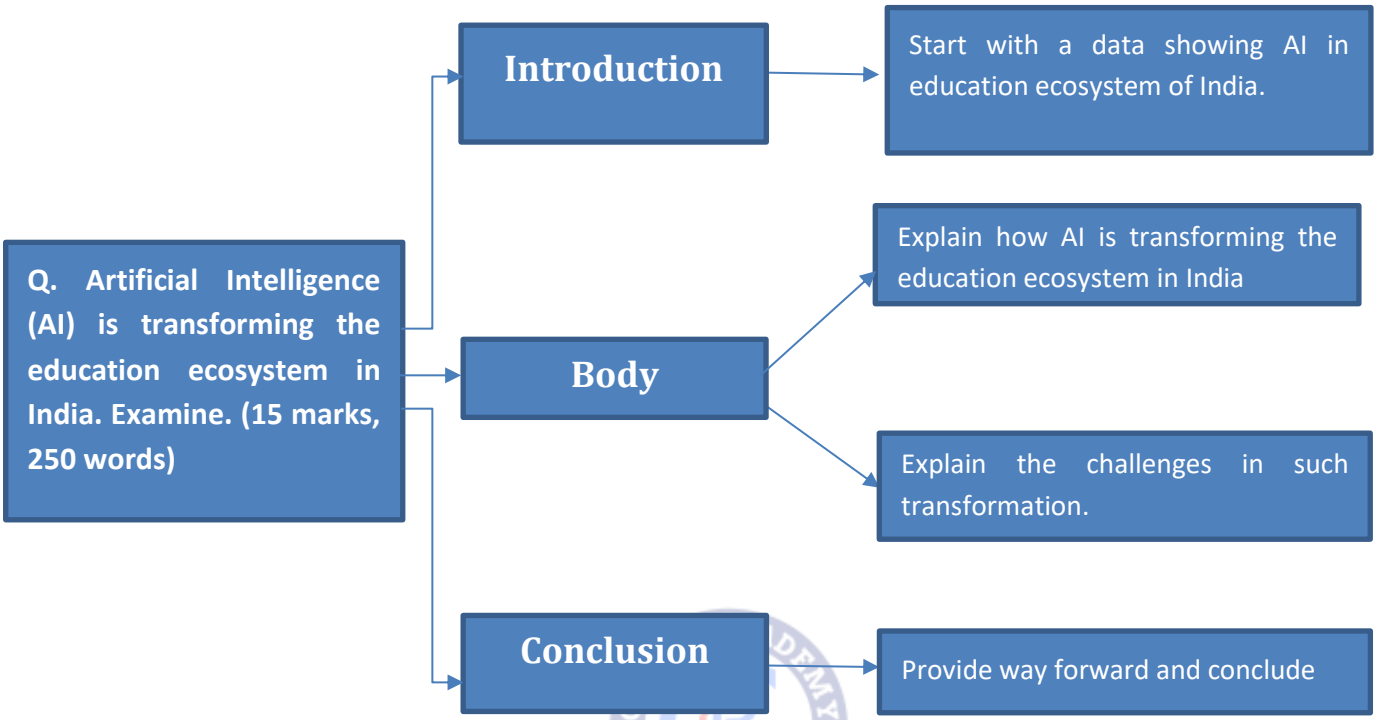
APPROACH



MODEL ANSWER

Artificial Intelligence (AI) is increasingly shaping India's education ecosystem through curriculum integration, digital platforms, and skill development initiatives. According to NASSCOM, **India had an AI talent pool of about 6–6.5 lakh professionals in 2024 and will require over 12.5 lakh AI professionals by 2027**, highlighting the growing emphasis on AI-enabled education and skilling.

How AI is Transforming the Education Ecosystem in India

- **Personalised and Adaptive Learning**: AI-driven platforms customise lessons according to students' learning pace and abilities. EdTech platforms such as **Byju's, Vedantu, Embibe, and Toppr** use AI for personalised learning pathways.
- **Improving Teaching Efficiency**: AI automates administrative tasks such as grading, attendance tracking, and performance analytics, enabling teachers to focus on pedagogy.
- **Expansion of Digital Learning Platforms**: AI strengthens large-scale learning platforms such as **SWAYAM and DIKSHA**, enabling access to courses, AI-based search tools, and accessibility features.
- **Bridging Educational Inequalities**: AI-powered tools improve access to quality education across regions. A **Karnataka study (2023)** showed improved learning outcomes among students using AI-based mathematics tools.
- **Promoting Innovation and Research in Higher Education**: Universities are establishing AI labs and interdisciplinary programmes. Institutions like **Lovely Professional University** and **Universal AI University** use AI-based learning systems.
- **Preparing Future Workforce**: AI education prepares students for emerging sectors such as data science, robotics, and machine learning through hackathons, incubators, and specialised courses.

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Challenges in AI-led Transformation

- **Digital Divide and Infrastructure Gaps** – Many rural schools lack reliable internet, devices, and digital infrastructure.
- **Teacher Skill Deficit** – Limited training among teachers in AI-based pedagogy.
- **Overdependence on AI Tools** – Excessive reliance may weaken critical thinking and independent learning.
- **Data Privacy and Security Risks** – AI platforms collect sensitive student data, raising privacy concerns.
- **Algorithmic Bias** – AI systems trained on global datasets may produce culturally biased outputs.
- **High Cost of AI Infrastructure** – Implementation requires significant investment in computing infrastructure and training.

Way Forward

- Strengthen **digital infrastructure and connectivity** in rural areas.
- Implement **large-scale teacher training programmes** for AI-based pedagogy.
- Develop **India-specific ethical AI frameworks and ensure data protection**.
- Promote **inclusive AI tools in regional languages**.
- Shift towards **process-based assessments and Socratic AI models** to promote critical thinking.

AI has the potential to **revolutionise India's education system by enabling personalised learning, improving efficiency, and preparing students for the digital economy**. Ensuring **ethical, inclusive, and well-regulated AI adoption** will be critical to harness its full transformative potential.

27. HEAT WAVES

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Disaster Management > Disaster mitigation

REFERENCE NEWS:

- Several parts of India, **especially north and west India**, saw an abrupt shift from relatively cool February winter conditions to unusually high temperatures in early March. **Temperatures were 8 to 13 degrees Celsius above normal**, which can be classified as heat-wave conditions. While a similar situation was witnessed in February three years ago, such an early arrival of heat is rare.

MORE ON NEWS:

- Although a somewhat similar pattern had appeared in February around three years ago, **such an early onset of intense heat is considered rare**. This makes the present situation significant from both a **climatological and an agricultural perspective.**
- In its March forecast, the **India Meteorological Department (IMD)** had already warned that:
  - Daytime temperatures over western Himalayan regions would remain above normal.
  - Peninsular India and central India would also experience above-normal temperatures.
  - Gujarat and Andhra Pradesh were likely to witness above-normal heatwave days.
- What is notable is that these **predictions materialised within the first week of March itself.** This indicates that the warming trend was not gradual, but sharp and immediate.
- A major cause of this early heat is the unusually **dry winter experienced by India.**
- **February 2026 was the third driest February since 1901**. Across India, rainfall during January and February was **only 16 mm, which was 60% below normal**. Both rainfall and snowfall remained highly subdued.

WHY WAS WINTER SO DRY?

Two key meteorological reasons:

1. **Inadequate Western Disturbances from November 2025 onward:** Since western disturbances usually bring most of the **winter precipitation**, their weak presence caused a major rainfall deficit.

   Western Disturbances are eastward-moving **extratropical weather systems** originating near the Mediterranean region that bring winter rain and snowfall to northwestern India.

2. **Absence of wind convergence:** There was no effective convergence between **westerly and easterly winds**, which normally helps transport moisture from surrounding seas into central and northern India.

Because of these factors, winter failed to provide the usual moisture support to land and crops.

HOW DRY WINTER CAUSES EARLY HEAT?

- Low winter rainfall leaves the soil dry. When soil has moisture, part of the summer

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heat is used for evaporation, which slows temperature rise. But dry soil heats up quickly, causing land temperatures to rise faster and creating early heatwave-like conditions. Thus, the current temperature spike is also linked to land-surface heating caused by lack of winter moisture.

HEATWAVES:

- **A heat wave occurs in a region when abnormally high temperatures are recorded over a long period of time.**
- The World Meteorological Organization (WMO) has not adopted yet a standard and mathematically rigorous definition for heat waves.
- According to IMD, a heat wave is considered if **maximum temperature of a station reaches at least 40^0C or more for Plains and at least 30^0C or more for Hilly regions**.
    - **(a) Based on Departure from Normal**
        - Heat Wave : Departure from normal is 4.5^0C to 6.4^0C
        - Severe Heat Wave : Departure from normal is >6.4^0C
    - **(b) Based on Actual Maximum Temperature**
        - Heat Wave : When actual maximum temperature ≥ 45^0C
        - Severe Heat Wave : When actual maximum temperature ≥47^0C

If the above criteria are **met at least in two stations** in a meteorological sub-division for at least two consecutive days and a heat wave is declared on the second day.

Criteria for describing heat waves for coastal stations:

According to IMD, when the maximum temperature departure is **4.5°C or more** from normal, a heat wave may be described, provided the actual maximum temperature is **37 °C or more**.

Marine heatwave:

- Marine heat waves are periods of extremely high temperatures in the ocean.
- MHWs have been observed in all major ocean basins over the recent decade. These events are linked to coral bleaching, sea grass destruction, and loss of kelp forests, affecting the fisheries sector adversely.

VULNERABILITY:

- **Globally:**
    - Since the 1980s, each decade has been warmer than the previous one. The warmest seven years have all been since 2015; the **top three being 2016, 2019 and 2020.**
    - World Meteorological Organization (WMO) statements suggests that **Heat-waves are projected to increase in number, intensity and duration** over the most land area in the 21st century.

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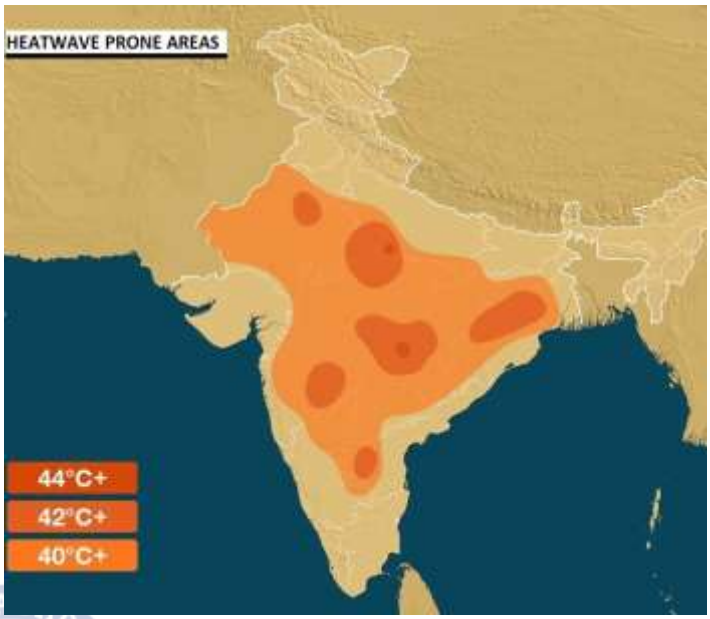
- **India**:
  - According to the latest information available from the India Meteorological Department (IMD), the five warmest years on record for India since 1901 are 2016, 2021, 2009, 2017, and 2010, in descending order. **11 out of 15 warmest years were during the recent 15 years** (2007-2021).
  - Heat waves typically **occur between March and June**, and in some rare cases even extend till July.
  - Many places in the northwest and cities along the southeastern coast report up to **eight heatwave days per season**. However, the regions in the extreme north, northeast and southwestern India are lesser prone to heatwaves.



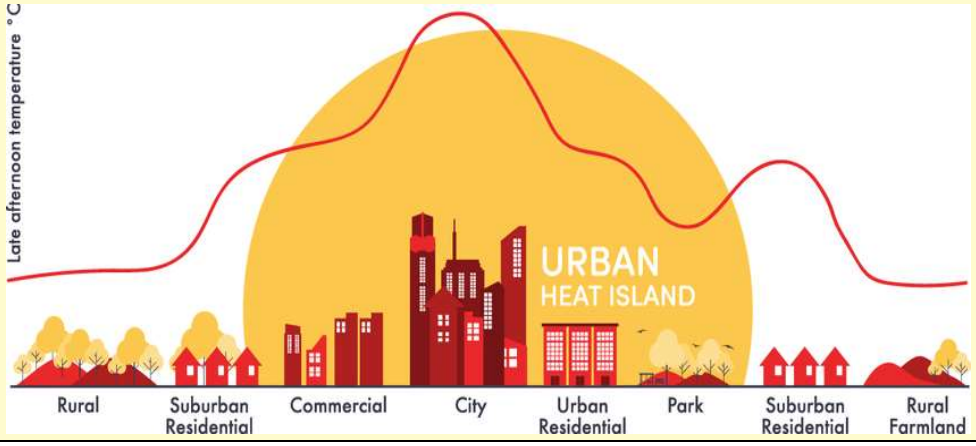
CAUSES OF HEAT WAVES:

- **Climate Change:**
  - Climate change is **driving global temperature higher and increasing the frequency and severity of heat waves.**
  - According to the **IPCC special report on global warming of 1.5°C**, the increase in global temperatures to within the range of 1.5°C to 2.5°C above pre-industrial levels will **intensify the severity of heat waves** and other extreme weather events.
  - The **recent IMD observations of temperatures rising 8°C to 13°C** above normal in parts of north and west India **in early March** show how warming is also increasing the likelihood of unusually early-season heat conditions.
- **El Nino:**
  - El Niño years are associated with a **delay in the onset of the Indian Summer Monsoon**. Because most heat waves in India occur during the pre-monsoon season, heat waves during El Niño years are longer and hotter.
  - For example, a **strong El Niño event in 2015-16** was associated with significant disruptions to monsoon patterns, contributing to prolonged heat waves in India
- **Deficiency of Western Disturbances / Dry Winter:**
  - One major cause of early heat-wave conditions is the **lack of adequate Western Disturbances from November onward.**
  - Western Disturbances normally bring winter rain and snowfall to north and northwest India. Their weak occurrence led to a severe rainfall deficit this winter.
  - For instance, January–February (2026) rainfall was only 16 mm, **around 60% below normal,** and February (2026) was the third driest since 1901.
- **Lack of wind convergence and moisture inflow:**

- Meteorologists also observed **weak convergence between westerly and easterly winds**, which usually help **bring moisture from nearby seas** into north and central India.
- This **reduced clouding, rainfall and atmospheric moderation**, thereby supporting the build-up of abnormally high temperatures.

- **Shifting jet streams:**
  - According to a recent study, the **polar jet stream is shifting north** as global temperatures rise. This would wreak havoc on weather in the northern hemisphere, bringing more extreme events like droughts and heat waves to southern Europe and the eastern US.
- **Hot local winds like Loo:**
  - **Loo is a hot wind that originates in the desert regions of Iran, Pakistan and Thar Desert** and blows eastwards into the Indian plain region in the months of May and June, usually in the afternoons.
  - Its temperature invariably ranges between 45°C and 50°C and causes severe heat waves in the plain region.
- **Anthropogenic causes:**
  - **Deforestation and increased constructed area:**
    - **Reduced level of evapotranspiration** due to rise of concrete jungles and urban sprawls leads to **Urban Heat Islands effect.**

The urban heat island (UHI) effect is a phenomenon where urban areas experience higher temperatures than their rural surroundings. This is mainly due to human activities and the concentration of buildings, roads, and other infrastructure that absorb and retain heat. The World Meteorological Organization notes that the UHI can increase temperatures by 5°C to 10°C, intensifying heatwaves in urban settings



- **Pollution:**
  - Increased greenhouse gases, aerosols, and particulate matter from activities like power generation and transportation enhance heat waves. These pollutants absorb and re-emit infrared radiation, raising atmospheric heat and intensifying the urban heat island effect in densely populated areas.

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- **Landscape alterations:**
  - Land use change, widespread installation of air conditioning, degraded agriculture practices create urban heat islands.

IMPACTS OF HEAT WAVES:

- **Ecological:**
  - **Increase the risk of disasters:**
    - Exacerbates already existing risks disasters like droughts and forest fires.
  - **Loss of biodiversity:**
    - Heat waves increases the risk of loss of wildlife habitat and loss of biodiversity.
- **Economic**:
  - **GDP loss:**
    - Heat waves resulted in a total of nearly USD 60 billion in damage globally in 2018.
  - **Threat to agricultural and allied sector:**
    - Combined heat waves and drought can lead soil to dry out and cause severe harvest failures. Heat waves also led to deaths of poultry, cattle etc.
    - **Impact on food production and food security:** Heat waves reduce crop yields and disrupt food supply chains, heightening food insecurity.
    - For instance, standing **rabi crops** such as mustard, wheat, gram, groundnut, sesame, sorghum and safflower are under immediate stress due to the **sudden rise in temperatures in March 2026**.
  - **Loss of work hours and reduction in labour productivity:**
    - India would lose 5.8% of its working hours due to heat stress, equivalent to 34 million full time jobs (ILO).
    - Also, according to an ILO study, at temperatures **of 34°C**, workers can lose up to **50% of their work capacity.**
- **Social Impact:**
  - **Called as Silent Disaster:**
    - It develops slowly and kills/injures humans and animals.
    - The health impacts of Heat Waves typically involve **dehydration, heat cramps, heat exhaustion and/or heat stroke.**
  - **Increased mortality:**
    - 24,000 deaths between from 1992-2015 (NDMA report)
    - However due to efforts from various stakeholders mortality due to heat waves reduced from **2040 in 2015 to 25 in 2018**
  - **Reduced productivity:**
    - Due to physiological stress, sometimes leading to illness & death.
  - **Resource Strain and Regional Conflicts:**
    - May create a **resource crunch** that escalates tensions over water allocation, exacerbating issues like the **Cauvery water disputes** between regions due to further strained water resources.

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- **Disruption in community infrastructure**
  - May create a resource crunch, which leads to riots and a lack of trust in government machinery.
  - For instance, **unusually early heat in hill and Himalayan regions** such **as Himachal Pradesh, Jammu & Kashmir and Ladakh** can also put pressure on local infrastructure and preparedness systems that are not normally geared for March heat conditions.

GOVERNMENT EFFORTS TO COMBAT HEATWAVES IN INDIA:

India has implemented **various policies and initiatives** to mitigate the impact of extreme heatwaves, focusing on **early warning systems, heat action plans, urban cooling strategies, and financial support mechanisms**.

- **Heat Action Plans (HAPs):**
  - India's first **Heat Action Plan (HAP)** was introduced in **Ahmedabad (2013)**, serving as a model for other cities.
  - **Over 23 cities and 13 states** now have HAPs focusing on **early warning, public awareness, and emergency response measures**.
- **Early Warning & Meteorological Forecasting:**
  - **India Meteorological Department (IMD)** issues **heatwave alerts** and provides a **color-coded warning system (Yellow, Orange, Red)** for preparedness.
  - Local authorities use IMD's forecasts to implement **preventive measures such as adjusting work hours and mobilizing medical aid**.
- **NDMA Guidelines on Heatwave Preparedness:**
  - The **National Disaster Management Authority (NDMA)** has issued national guidelines for heatwave management, which include:
- **India National Cooling Action Plan (INCAP) (2019):**
  - Focuses on **energy-efficient cooling, urban heat mitigation, and passive cooling strategies**.
  - Aims to **reduce cooling demand by 20-25% by 2037**, benefiting **urban and rural communities**.
- **Financial & Policy Support:**
  - **15th Finance Commission** has included **heatwave mitigation in the National and State Disaster Mitigation Funds**.
  - **Centrally Sponsored Schemes (CSSs)** such as **AMRUT, Smart Cities Mission, and MGNREGA** support urban heat resilience projects.
- **Urban Planning & Cooling Infrastructure:**
  - **Cool Roof Program** in Hyderabad promotes **reflective roofing to lower indoor temperatures**.
  - Several cities have introduced **green building codes, urban afforestation, and heat-resistant infrastructure**.
- **Support for Vulnerable Populations:**
  - Governments have initiated measures like **flexible working hours for outdoor laborers, community cooling centers, and subsidized cooling solutions for low-income households**.

WAY FORWARD:

- **NDMA GUIDELINES:**

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- **Early Warning System and Coordination**: Implement systems to alert residents about high and extreme temperatures and enhance preparedness for favorable weather conditions.
- **Training for Healthcare Professionals**: Develop training programs for medical and community health staff to manage heat-related illnesses effectively.
- **Public Awareness and Outreach**: Use various media to disseminate tips on protecting against heat waves and treating heat-related illnesses.
- **Collaboration with NGOs and Civil Society**: Work with these groups to enhance public facilities like bus stands and water delivery systems to better handle heat wave conditions.
- **State Nodal Agency**: Designate nodal officers at state or district levels to manage Heat Action Plans.
- **Vulnerability Assessment**: Identify vulnerable populations and establish heat-health alert thresholds.
- **City-Level Measures**: Analyze factors that cause temperature increases in cities, create heat wave risk maps, identify hot spots, and ensure adherence to building codes.

- **Enhancing Institutional Coordination and Governance**
  - Strengthen **inter-departmental coordination**, as **over 25% of local officials** cited lack of cooperation between government departments as a major barrier to effective heat action (*Source: Sustainable Futures Collaborative Study)*.
  - Improve **technical capacity** of local governments by providing **scientific training** and access to **climate projections**.

    Sustainable Futures Collaborative (SFC) Study – Analyzed heat action implementation in **nine high-risk Indian cities** using **CMIP6 climate model output** and interviews with **88 government officials** to assess preparedness for escalating heat waves.
  - Ensure that **city planners are actively involved** in designing and implementing heat mitigation strategies, as **many city planners lack a legal mandate to act on heat**.
- **Expanding the India National Cooling Action Plan:**
  - Leverage the **India National Cooling Action Plan (INCAP)** to enhance **sustainable and energy-efficient cooling solutions**.
  - Ensure **cooling strategies target the most heat-exposed populations**, such as outdoor workers and low-income communities.
  - Promote **rooftop solar programs** and **tree-planting initiatives** that are better aligned with heat-vulnerable areas.
- **Strengthening Policy and Legislation:**
  - Develop **stronger heat wave preparedness policies**, including **heat-specific labor laws** to regulate working hours and protect workers from extreme conditions.
  - Implement **legal mandates** to incorporate **Heat Action Plans (HAPs) into urban planning** and disaster management policies.
  - Utilize **National and State Disaster Mitigation Funds** to support heat adaptation projects.
  - Encourage **minor procedural tweaks in Centrally Sponsored Schemes (CSSs)** to allow funding for heat resilience programs.
- **Advancing Research and Data Collection**

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- Improve **forecasting models** and access to **localized climate projections**, as currently, **only 5% of officials have access to climate models** predicting heatwave intensity. (*Source: Sustainable Futures Collaborative Study)*.
- Conduct **assessments on the effectiveness of existing heat action plans (HAPs)** to refine and improve them.
- Study **international best practices in extreme heat governance** and adapt them to India's urban and rural settings.

- **Targeted Support for Vulnerable Populations:**
  - Develop **long-term adaptive measures**, such as **community cooling centers** and **subsidized air conditioning** for vulnerable groups.
  - Establish **insurance programs** to compensate **daily wage workers for lost work hours due to extreme heat**.
  - Retrofit **electricity grids** to **ensure stable power supply** during heatwaves, preventing blackouts and ensuring access to cooling.
  - Work closely with **civil society organizations**, as research shows **governments with strong NGO partnerships are more proactive in heat governance**.

BEST PRACTICE:

- **Heat wave Action Plan of Ahmedabad:**
  - Ahmedabad was among the **first city to prepare Heat wave Action Plan.**
  - This plan **provides a framework for other Indian cities** to emulate and help protect their citizens from the extreme heat.
  - **The key lesson learnt from Ahmedabad Heat Wave Action Plan:**
    - Recognize Heat Wave as a major Health Risk.
    - Map out the 'High Risk' Communities.
    - Setting up of 'Public Cooling Places'.
    - Issue Heat wave alerts through different media.

CONCLUSION:

- Heatwaves in India are becoming earlier, wider and more intense, as seen in the March 2026 episode. They now pose a combined **challenge for climate resilience, agriculture, water resources and public health.** Addressing this growing risk requires an integrated approach based on stronger early warning systems, local preparedness, sustainable cooling measures and protection of vulnerable populations.

PRACTICE QUESTION

Q. "Heatwaves are emerging as one of the most significant climate-related disasters in India". Discuss the major causes of heatwaves and examine their ecological, economic and social impacts. (15 marks, 250 words)

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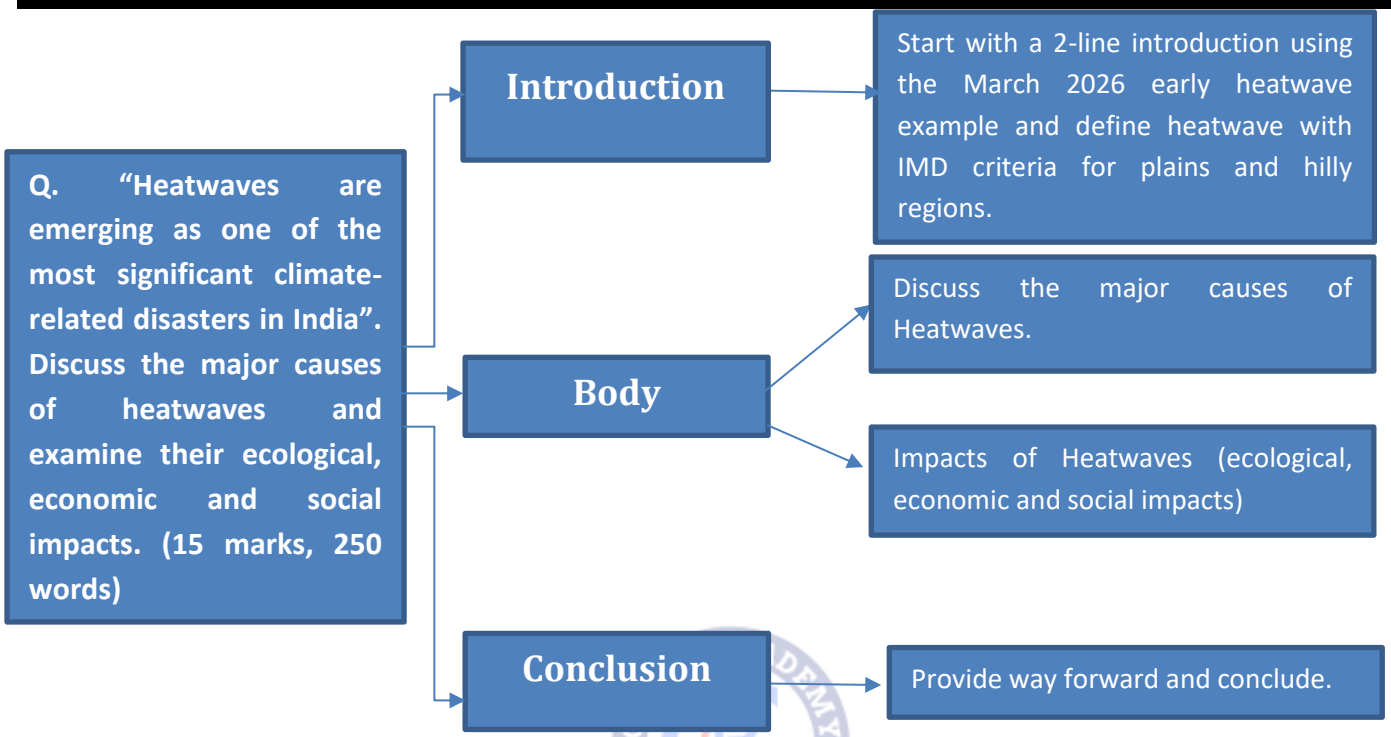
APPROACH



MODEL ANSWER

Recently, several parts of north and west India recorded temperatures **8–13°C above normal in early March**, showing the unusually early onset of heatwave conditions. A **heatwave** refers to a period of abnormally high temperatures over a region. According to the **IMD**, it is considered when maximum temperature reaches at least **40°C in plains** and **30°C in hilly regions**, along with the prescribed departure from normal. With climate change and changing seasonal patterns, heatwaves are becoming more frequent, prolonged and damaging in India.

Causes of Heatwaves:

1. **Climate change**: Rising global temperatures are increasing the frequency, duration and intensity of extreme heat events. The IPCC has warned that warming beyond 1.5°C will worsen heatwaves.
2. **El Niño effect**: El Niño delays or weakens monsoon progression, extending the pre-monsoon hot period. This makes heatwaves longer and hotter.
3. **Deficient winter rainfall**: The recent episode was linked to a very dry winter. **January–February 2026 rainfall was only 16 mm, about 60% below normal**, leaving soils dry and vulnerable to rapid heating.
4. **Weak Western Disturbances**: Western Disturbances usually bring winter rain and snowfall to northwestern India. Their weak occurrence reduced winter moisture support.
5. **Lack of wind convergence**: Weak convergence between westerly and easterly winds reduced moisture inflow, clouding and atmospheric moderation, allowing temperatures to rise sharply.
6. **Local and human-induced factors**: Hot winds like **Loo**, shifting jet streams, urban heat island effect, deforestation, pollution and concretisation further intensify heat conditions.

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Impacts of Heatwaves:

Ecological impacts:

- Increase the risk of **droughts and forest fires**.
- Cause **soil moisture depletion** and land-surface drying.
- Lead to **habitat stress** and biodiversity loss.
- Marine heatwaves trigger **coral bleaching, seagrass damage and fisheries decline**.

Economic impacts:

- Reduce crop yields and threaten **food security**.
- Standing **rabi crops like wheat, mustard, gram and safflower** face immediate stress.
- Cause livestock and poultry losses.
- Reduce labour productivity; India may lose **5.8% of working hours** due to heat stress.
- Increase irrigation demand, thereby adding pressure on water resources and farm costs.

Social impacts:

- Heatwaves act as a **silent disaster**, causing dehydration, cramps, exhaustion and heat stroke.
- Increase mortality and morbidity, especially among the elderly, children and outdoor workers.
- Strain drinking water supply and public infrastructure.
- Can trigger local tensions over scarce water and weak public services.
- Unusually early heat in hill regions like **Himachal Pradesh, J&K and Ladakh** can catch systems unprepared.

Way forward:

- **Strengthening early warning systems**: Improve IMD forecasting and ensure timely last-mile dissemination of heat alerts.
- **Effective Heat Action Plans**: Expand and strengthen Heat Action Plans with better coordination among health, disaster management and local bodies.
- **Urban heat mitigation**: Promote cool roofs, urban greening, shaded public spaces and reflective materials to reduce heat stress.
- **Climate-resilient agriculture**: Encourage micro-irrigation, soil-moisture conservation and climate-resilient cropping practices.
- **Protection of vulnerable groups**: Ensure cooling centres, drinking water access, flexible work hours and targeted support for high-risk populations.

Heatwaves in India are no longer just seasonal weather events; they are becoming a major multi-dimensional disaster affecting ecology, economy and society. Government efforts such as **Heat Action Plans, IMD warning systems, NDMA guidelines and the India Cooling Action Plan** have improved preparedness, but a stronger and more integrated response is needed to build long-term resilience.

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28. SEMICONDUCTOR MANUFACTURING IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3> Industry and infrastructure

REFERENCE NEWS:

- India's semiconductor sector is projected to expand very rapidly over the next decade. According to a recent Deloitte report, the market, currently estimated at about **$45–50 billion in FY 2024–25**, is expected to grow to **$120 billion by 2030 and further to $300 billion by 2035.**
- This growth is being driven mainly by rising **demand from AI, automobiles, data centres, and electronics manufacturing.**
- By 2035, mobile phones, automotive, computing, and data centres alone are expected to account for over 70% of total semiconductor demand in India.

HIGHLIGHTS OF REPORT:

- India **currently imports over 90% of its semiconductor needs**, but according to the Deloitte report, a major **shift is expected by 2035**, when local production could **meet more than 60% of domestic demand**, reducing import dependence and enhancing self-reliance.
- The report projects that India could **build a full semiconductor ecosystem by 2035**, including 4–5 silicon fabs, 8–10 compound fabs, 1–2 display fabs, and 20–25 OSAT (Outsourced Semiconductor Assembly and Test) facilities, driven by the India Semiconductor Mission and state incentives.
- It notes that over $19 billion has already been invested across 10 approved projects, with another $20–25 billion in proposals in the pipeline. Further investments of $50 billion in the next five years and $75–80 billion between 2030–2035 are expected.
- The Deloitte report also estimates **around 2 million jobs by 2035**, but stresses that success will depend on execution, long-term policy support, Centre–State coordination, and streamlined clearances.

SEMICONDUCTORS:

- A semiconductor material has an electrical conductivity value falling between that of a conductor, such as metallic copper, and an insulator, such as glass. Common elemental semiconductors are **silicon and germanium**.
- Chipsets are the most commonly used semiconductor component. A chipset is a **group of integrated circuits that control the flow of data** and instructions between the central processing unit (CPU) and external devices.
- Their design and development occur in various stages:
  - A **wafer** is designed and manufactured in **wafer fabrication (FAB) units, also called foundries**, by companies as per the requirements of chip manufacturers like Samsung and Qualcomm.

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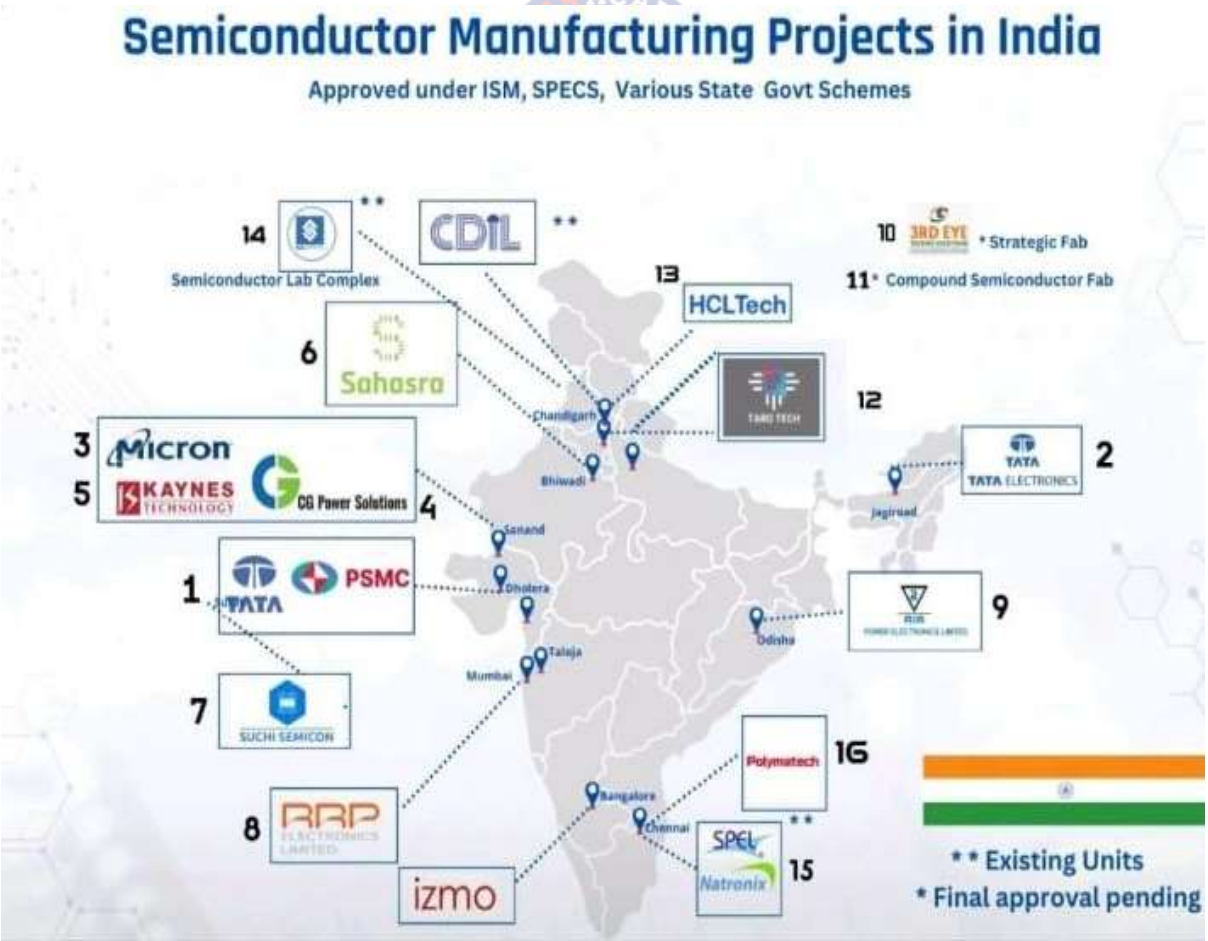
- The chipmakers then package, test and sell the chips to equipment manufacturers such as Xiaomi and Cisco.

- End-use industries that depend on semiconductors include mobile and telecommunication devices, industrial machinery, automobiles, automation (workplace, healthcare, manufacturing etc.), the Internet of Things (IoT) and other industries that have applications for computing in some form or other.

STATS:

- The current production of electronic components in India is valued at **USD 11 billion** and is expected to reach **USD 18 billion by FY 26.**(Source: Invest India)
- The **Indian semiconductor market**, which is valued at approximately **USD 23.2 billion** and is projected to reach **USD 80.3 billion by 2028**, is growing at a compound annual growth rate (CAGR) of 17.10%.(Source: Invest India)
- India has the requisite expertise in software and chip design. Yet**, India lags in the establishment of semiconductor wafer fabrication (FAB) units**.



SIGNIFICANCE OF SEMICONDUCTOR MANUFACTURING

- **Boost Domestic Manufacturing and Supply Chain Resilience:**

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- India aims to become **self-reliant** in semiconductor manufacturing under the **Atmanirbhar Bharat initiative**, with the vision to emerge as a global hub for electronic system design and semiconductor manufacturing.
- For instance, the **COVID-19 pandemic** highlighted vulnerabilities in global supply chains, especially in the semiconductor industry. By bolstering domestic manufacturing, India can reduce its dependency on international suppliers and enhance **supply chain resilience** against global disruptions.

- **Attract Investment:**
  - India has introduced a **USD10 billion incentive package** under the **Production Linked Incentive (PLI) Scheme for Semiconductors** as part of its broader strategy to establish a robust domestic semiconductor ecosystem. This package, managed by the **India Semiconductor Mission (ISM),** offers up to 50% fiscal support for semiconductor and display manufacturers.
  - The goal is to **attract global chip makers** to set up production bases in India, positioning the country as a key player in the global semiconductor market. Major companies such as **Tower Semiconductor, Foxconn, and Vedanta** have already expressed interest.
- **Employment Generation:**
  - With the advent of **Industry 4.0**, the semiconductor industry will create **highly skilled employment opportunities**. For instance, by developing a strong domestic electronics industry, India can harness its **demographic dividend**, generating jobs in advanced technological sectors.
- **Reap Benefits of the Global Chip Shortage:**
  - The global semiconductor shortage has disrupted industries worldwide, presenting India with an opportunity. By attracting fabrication units through favorable policies, India could enhance its self-reliance in semiconductor production, **meeting domestic and global demands**.
- **Strategic Significance:**
  - Manufacturing and supply of semiconductors are concentrated in countries like **Taiwan, South Korea, Japan, the U.S., and China**. Geopolitical tensions in these regions could disrupt supply chains.
  - For instance, **Taiwan, the world's leading chip producer**, faces tensions with mainland China, posing risks to India's imports. Attaining **self-sufficiency** in semiconductor production can protect India from such geopolitical risks.
- **National Security:**
  - Semiconductors are critical components in **defense technologies**. Ensuring a **domestic supply** of these components protects a nation's security apparatus from unreliable foreign sources, thereby enhancing **national security**.

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- **R&D Ecosystem Development:**
  - A robust semiconductor manufacturing sector fosters a vibrant **research and development ecosystem**. For instance, **Silicon Valley** demonstrates how a strong semiconductor industry can attract talent and investments in **cutting-edge technologies**.
- **Technological Sovereignty:**
  - Control over **semiconductor technology** is crucial for **technological sovereignty**. For example, it allows countries to set their own standards and regulations, ensuring independence from foreign entities for critical technologies.
- **Economic Diversification:**
  - Investing in **electronics and semiconductor manufacturing** helps diversify a country's economy, **reducing reliance on traditional industries**.
  - For example, **Taiwan's economy** shows how its thriving semiconductor industry has contributed to **economic growth** and diversification.
- **Promote Circular Economy:**
  - A **circular electronics system**, where resources are reused in multiple ways, fosters **sustainability** and enhances **cost-effectiveness**. For instance, building a reliable domestic semiconductor manufacturing base is essential to develop such sustainable systems.
- **Boost to Startups and SMEs:**
  - Readily available, affordable domestically made chips support local hardware start-ups and SMEs, fostering indigenous innovation and reducing barriers to entry in electronics manufacturing.
- **Regional Development and Infrastructure Growth:**
  - Semiconductor fabs drive the development of essential infrastructure (clean power, water, logistics), leading to regional economic upliftment, especially in emerging industrial zones.

CHALLENGES:

- **Capital intensive industry:**
  - A semiconductor fabrication facility can cost multiples of a billion dollars to set up even on a relatively small scale. They also have high operating costs and need frequent technology replacement. This makes it a **viable industry for only a few corporate giants**.
- **Power demand:**
  - Chip fabs require extremely stable power supply. But this is a challenge in India.
  - For instance, India recorded a power supply **shortage of 1,201 million units in October 2021** — the highest in 5.5 years — due to coal shortage in thermal plants. This example highlights **the ongoing challenges in ensuring consistent power supply,** an issue that persists even in 2024, as India continues to face coal-related shortages impacting power generation in several states.
- **Concerns over water use:**
  - Semiconductor manufacturing requires large volumes of **ultra-pure water** to avoid the contamination of electronic devices. For a **water stressed country** like India, such levels of water usage are unsustainable.

- For instance, Taiwan Semiconductor Manufacturing Company uses around **60 liters of water per layer of chip** and the recent severe drought in Taiwan has affected production.

- **Stiff competition:**
  - India has a weak ecosystem and shortage of resources as compared to more competitive bases **like China and Vietnam**. Hence, it would require immense government support to attract the industries to the country.
- **Challenges and Previous Attempts:**
  - Previous attempts to establish semiconductor fabrication facilities in India faced challenges. Notably, a **joint venture between Foxconn and Vedanta**, aimed at setting up a **USD 19.5 billion chip plant, was dissolved**.
  - Additionally, Tower Semiconductor's initial **proposal for a USD 3 billion plant in Karnataka was stalled** due to its then impending merger with Intel, which was **eventually cancelled due to regulatory hurdles.**
- **Environmental concerns:**
  - India is the **third largest producer of e-waste,** generating about 2.4 kg of e-waste per capita. The arrival of new industries would increase the amount of e waste generated in the country.
- **Supply Chain Dependence on Imports:**
  - India heavily relies on imports for critical semiconductor manufacturing materials and high-end equipment (e.g., photolithography machines, specialty gases). This creates a **strategic vulnerability**.
- **Limited Domestic R&D in Core Manufacturing Technologies**
  - While India excels in chip design, it lags in **advanced research** for fabrication processes, materials science, and chip-making equipment—hindering innovation and self-reliance in manufacturing.
- **Long Gestation Period and High Risk for Investors**
  - Semiconductor fabs take **5–10 years to become profitable**, and rapidly evolving technology makes such investments risky. This deters private sector participation without long-term state support.
- **Talent Gap in Niche Roles**
  - There's a shortage of professionals skilled in **process engineering, photonics, wafer inspection, and ATMP operations**, despite a large engineering workforce. India also faces **brain drain** in these niche areas.
- **Inadequate ATMP Ecosystem**
  - The Assembly, Testing, Marking, and Packaging segment is **underdeveloped**, leading to continued reliance on countries like Malaysia, Vietnam, and Taiwan for back-end processes.

- **Policy and Regulatory Uncertainty**
  - **Delays in approvals, land acquisition bottlenecks**, and lack of **clarity in fiscal incentives** across states lead to investor hesitation and stalled projects.

GOVERNMENT EFFORTS:

- **India Semiconductor Mission(ISM)**
  - India Semiconductor Mission (ISM) has been setup as an **Independent Business Division within Digital India Corporation.**

    Digital India Corporation has been set up by **the Ministry of Electronics & Information Technology**, Government of India, to innovate, develop and deploy ICT and other emerging technologies for the benefit of the common man. It is **a 'not for profit' Company** under Section 8 of the Companies Act 2013. The Company has been **spearheading the Digital India programme** of the Government of India, and is involved in promoting use of technology for eGovernance/ e-Health / Telemedicine, e-agriculture, e-Payments etc
  - ISM has all the **administrative and financial powers** and is tasked with the responsibility of catalysing the India Semiconductor ecosystem in manufacturing, packaging and design.
  - ISM has been working as **nodal agency** for the Schemes approved under **Semicon India Programme.** The **applications were received by ISM and are being appraised by ISM.** ISM has also been engaging with various stakeholders of Semiconductors and Display ecosystem to attract the investments in India.
- **Semicon India Programme:**
  - The government has approved the Semicon India programme with a total outlay of INR 76,000 crore for the development of semiconductor and display manufacturing ecosystems in the country.
  - The following four schemes have been introduced under the programme:
    1. **Modified Scheme for setting up of Semiconductor Fabs in India**.
    2. **Modified Scheme for setting up of Display Fabs in India**.
    3. **Modified Scheme for setting up of Compound Semiconductors / Silicon Photonics / Sensors Fab / Discrete Semiconductors Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / OSAT facilities in India**.
    4. **Semicon India Future Design: Design Linked Incentive (DLI) Scheme.**
- **National Policy on Electronics 2019 (NPE 2019):**
  - The National Policy on Electronics 2019 (NPE 2019) aims to establish **India as a global hub for Electronics System Design and Manufacturing (ESDM).**
- **PLI Scheme for Large Scale Electronics Manufacturing:**
  - Under the scheme, electronic manufacturing companies will get an **incentive of 4 to 6% on incremental sales** (over base year) of goods manufactured in India and covered under target segments, to eligible companies over a period of next 5 years.
- **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS):**
  - Under the scheme, a financial incentive of 25% of capital expenditure has been approved by the Union Cabinet for the manufacturing of goods that constitute

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the supply chain of an electronic product.

- **Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme:**
  - The scheme will provide financial assistance up to 50% of the project cost subject to a ceiling of Rs 70 crore per 100 acres of land for setting up of Electronics Manufacturing Cluster projects.
- **Indigenous GPU Development:**
  - India plans to roll out a prototype of its indigenous Graphics Processing Unit (GPU) by the end of 2025. This initiative is part of the country's efforts to reduce dependence on imported semiconductor components and enhance self-reliance in critical technologies.
- **SHAKTI-Based Aerospace Chip Development**
  - IIT Madras and ISRO have jointly developed a 64-bit IRIS (Indigenous RISC-V Controller for Space Applications) chip based on the SHAKTI processor.
  - This chip is tailored for space applications and represents a significant step in **indigenous aerospace semiconductor development.**

WAY FORWARD:

- **Fast-track Regulatory Clearances**
  - Establish a **single-window clearance system** for semiconductor projects to streamline land acquisition, environmental approvals, and fiscal incentives.
- **Strengthen Infrastructure Backbone**
  - Prioritize development of **reliable power and water supply**, high-speed connectivity, and plug-and-play industrial clusters near semiconductor hubs.
- **Develop a Skilled Talent Pipeline**
  - Expand semiconductor-focused curricula through partnerships with **academic institutions**, ISM, and industry leaders.
  - Deploy initiatives like **Semiconductor Learning Kits** and internships to create an **industry-ready workforce**.
- **Enhance Research & Innovation Ecosystem**
  - Support public-private R&D collaboration through grants, centers of excellence (like BSRC), and **indigenous IP creation** in chip design and fabrication.
- **Encourage Global-Local Collaborations**
  - Promote **joint ventures, technology transfers**, and strategic tie-ups with leading global semiconductor firms to integrate India into **global value chains**.
- **Ensure Environmental Sustainability**
  - Adopt **green manufacturing practices**, water recycling technologies, and enforce stringent **e-waste management protocols** to make the industry future-ready.
- **Facilitate Access to Capital**
  - Provide **viability gap funding**, promote **venture capital access**, and extend **sovereign backing** to startups and MSMEs in semiconductor design, ATMP, and innovation.
- **Geopolitical and Trade Integration**
  - Align with strategic multilateral groupings like the **Quad, IPEF**, and engage in **bilateral technology agreements** to enhance semiconductor trade and security cooperation.

- **Build Domestic Semiconductor Tooling and Materials Capacity**
  - Invest in the development of **indigenous equipment, chemicals, and ultra-pure materials**, reducing import dependence and increasing supply chain security.
- **Promote India as a Trusted Manufacturing Destination:**
  - Position India as a geopolitically stable, rule-of-law-based alternative to high-risk regions for global chipmakers seeking diversification **(China+1 strategy).**

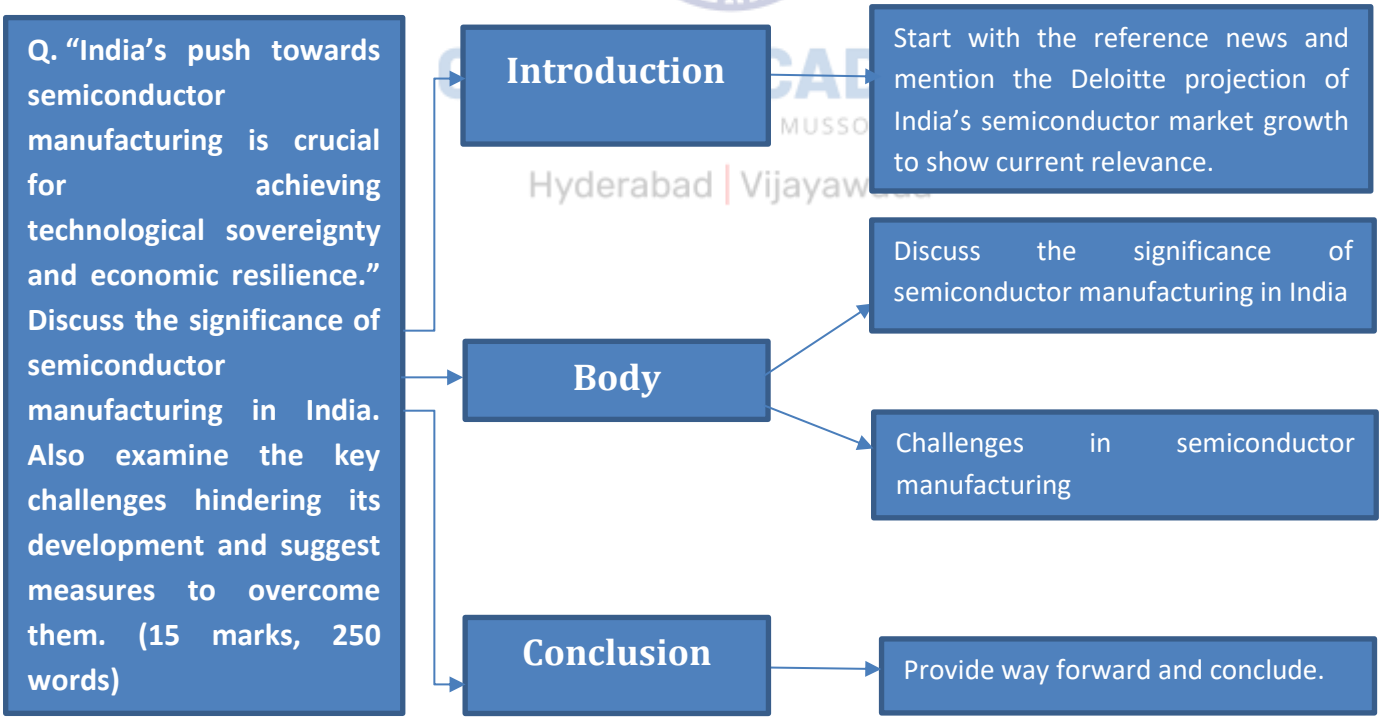
CONCLUSION:

- Semiconductor manufacturing is vital for India's economic growth, technological sovereignty, and strategic security. With sustained policy support, strong infrastructure, skilled manpower, and deeper ecosystem development, India can move from a chip-importing nation to a credible global semiconductor hub.

PRACTICE QUESTION

Q. "India's push towards semiconductor manufacturing is crucial for achieving technological sovereignty and economic resilience." Discuss the significance of semiconductor manufacturing in India. Also examine the key challenges hindering its development and suggest measures to overcome them. (15 marks, 250 words)

APPROACH



MODEL ANSWER

According to a recent Deloitte report, India's semiconductor market is projected to grow from about $**45–50 billion in 2024–25 to $300 billion by 2035**, driven **by AI, automobiles, and data centres, highlighting its rising strategic importance.**

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Significance of Semiconductor Manufacturing in India:

1. Supply Chain Resilience and Self-Reliance: Reducing over 90% import dependence strengthens resilience against global disruptions like COVID-19 and geopolitical tensions.

2. Strategic and National Security Importance: Semiconductors are critical for defence systems, telecom, and digital infrastructure, ensuring technological sovereignty.

3. Economic Growth and Investment Attraction: PLI and ISM incentives are attracting global players, boosting manufacturing and positioning India in global value chains.

4. Employment Generation: The sector can generate high-skilled jobs, leveraging India's demographic dividend and design expertise.

5. Boost to Innovation and R&D Ecosystem: Semiconductor manufacturing promotes advanced research in AI, electronics, and emerging technologies.

6. Industrial Diversification: Reduces dependence on traditional sectors and strengthens electronics manufacturing and Industry 4.0 capabilities.

Challenges in Semiconductor Manufacturing:

1. Capital Intensive Nature: Fab units require billions of dollars with high operational costs and long gestation periods.

2. Infrastructure Constraints: Unreliable power supply and high water requirements pose major challenges.

3. Weak Ecosystem and Import Dependence: Dependence on imported equipment, materials, and limited domestic fabrication ecosystem.

4. Talent and Skill Gap: Shortage of specialised skills in fabrication, photonics, and ATMP operations.

5. Policy and Regulatory Bottlenecks: Delays in approvals, land acquisition, and lack of coordination between Centre and states.

6. Global Competition: Strong competition from established hubs like Taiwan, South Korea, and China.

Way Forward:

1. Ensure policy stability and long-term funding: Move from short-term incentives to a sustained national semiconductor programme.

2. Develop robust infrastructure: Ensure reliable power, water, and semiconductor clusters with plug-and-play facilities.

3. Strengthen skill ecosystem: Promote industry-academia collaboration, specialised training, and fab-level exposure.

4. Deepen domestic ecosystem: Develop capabilities in materials, equipment, OSAT/ATMP, and design.

5. Fast-track clearances: Implement single-window mechanisms and improve Centre–State coordination.

6. Promote global partnerships: Encourage technology transfer, joint ventures, and integration into global value chains.

Government initiatives such as the **India Semiconductor Mission (ISM), Semicon India Programme, PLI Scheme, and Design Linked Incentive (DLI)** reflect India's strong policy push in this sector. With effective execution, infrastructure development, and ecosystem deepening, India can transition from a semiconductor importer to a globally competitive manufacturing hub, ensuring long-term economic and strategic gains.

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29. RIVER POLLUTION IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment and Ecology >> Pollution

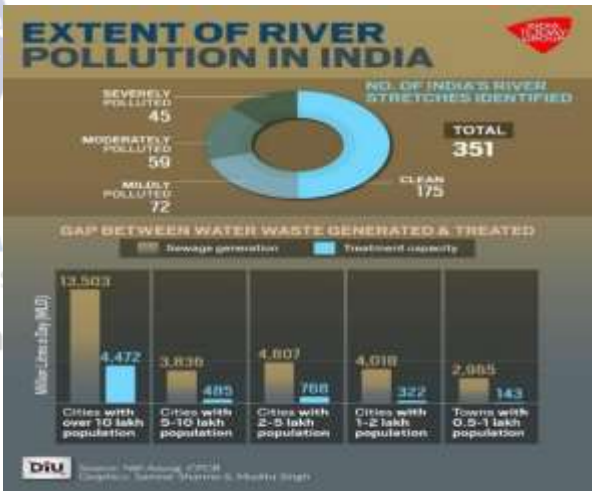
REFERENCE NEWS:

Central Pollution Control Board, in association with Pollution Control Board/ Committees in different States/Union Territories (UTs), have been **monitoring the water quality of rivers and other water bodies** through a network of monitoring stations under the National Water Quality Monitoring Programme.

Accordingly, CPCB publishes reports on Polluted River Stretches (PRSs) on periodic basis. As per the report published by CPCB in 2025 based on water quality data of 2022 & 2023, **296 polluted stretches were identified on 271 rivers that includes main rivers and tributaries in the country.**

RIVER POLLUTION IN INDIA:

- According to the **Central Pollution Control Board (CPCB) (2022)**, out of **603 monitored rivers**, **279 rivers (46%) are polluted** with high **Biochemical Oxygen Demand (BOD)** levels, indicating organic pollution.
- **India's rivers also support 18% of the world's population of unique aquatic animals and plants**, according to the Wildlife Institute of India.



MAJOR CAUSES OF RIVER POLLUTION IN INDIA:

- **Discharge of Untreated Sewage:** Nearly 70% of urban sewage in India is discharged untreated into rivers (CPCB, 2021).
  - Yamuna River receives 3,800 MLD (Million Litres per Day) of sewage, but treatment plants can only handle 1,500 MLD, leading to toxic contamination in Delhi.
  - A 2019 assessment by the Quality Council of India found that more than 70% of towns along the Ganga were directly disposing their waste into the river, because they lacked proper municipal waste plants.
- **Industrial Effluents and Toxic Waste:** 40% of industrial waste is discharged untreated into rivers (CPCB, 2022).
  - Kanpur's leather tanneries release chromium and arsenic into the Ganga River, affecting groundwater and fish populations. Heavy metals cause cancer, neurological disorders, and aquatic biodiversity loss.

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- More than 38,000 million litres of waste water enter Indian rivers due to lack of sewage treatment plants and improper waste disposal mechanisms.

- **Agricultural Runoff (Pesticides & Fertilizers):** India uses over 27 million tons of chemical fertilizers annually, leading to eutrophication (FAO, 2020).
  - Brahmaputra River suffers from excess nitrogen and phosphorus runoff from tea plantations in Assam, causing algal blooms.
- **Religious and Cultural Practices:** During festivals like Ganesh Chaturthi, thousands of idols containing lead, mercury, and synthetic paints are immersed in rivers. Also flowers dumped into rivers after puja or as offerings bring chemicals into the rivers.
  - Mithi River in Mumbai shows a 20-30% spike in heavy metal concentration post-idol immersions.
- **Solid Waste Dumping (Plastic and Garbage):** India generates 3.5 million tons of plastic waste annually, with 40% ending up in rivers and water bodies (MoEFCC, 2022), clogging river flow, leading to flooding and harm to marine life.
  - The Gomti River in Lucknow has floating plastic debris, biomedical waste, and municipal garbage, making it one of India's dirtiest rivers.
- **Illegal Sand Mining and Construction Waste:** 30% of Indian rivers face damage due to illegal sand mining (NITI Aayog, 2021).
  - Chambal River (Madhya Pradesh & Rajasthan) is heavily exploited for sand, increasing turbidity and eroding riverbanks.
- **Thermal and Hydroelectric Power Plant Pollution:** Thermal power plants discharge hot water, which raises river temperatures and disrupts ecosystems.
  - Thermal plants along the Hooghly River (West Bengal) discharge heated water, reducing oxygen levels and affecting fish breeding.
- **Oil Spills and Chemical Waste:** Oil spills occur due to transport accidents, industrial leaks, and poor regulation of ship waste disposal.
  - **Brahmaputra Oil Spill (Assam, 2021)** from a refinery leaked crude oil into the river, affecting drinking water and fishing communities.
- **Climate Change and Reduced River Flow:** Glacier retreat and erratic rainfall have reduced river flows, concentrating pollutants.
  - Ganga and Yamuna Rivers face reduced water levels, increasing pollution concentration.
- **Lack of Strict Regulation and Enforcement:** Only 30% of Indian cities have proper sewage treatment facilities (CPCB, 2022).
  - Many urban settlements along the Krishna and Godavari rivers lack wastewater treatment infrastructure. Musi river along Hyderabad and Adayar river along Chennai are examples of urban river pollution.

IMPACTS OF RIVER POLLUTION:

Economic Impacts

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- **Losses in Agriculture and Fisheries:** Polluted irrigation water reduces crop yields and contaminates food supplies. **NITI Aayog (2021)** estimates **₹10,000 crore annual loss** due to river pollution affecting agriculture and fisheries.
    - Farmers in **West Bengal and Bihar** face reduced productivity due to **arsenic contamination from the Ganga River**.
- **Decline in Tourism and Pilgrimage:** Sacred rivers like Ganga and Yamuna attract millions of pilgrims, but pollution discourages tourism. **World Bank** estimates **India's loses annually** due to water pollution affecting tourism.
    - Varanasi's ghats on the Ganga River have seen a drop in foreign tourists due to polluted water and foul smell.
- **Increased Healthcare Costs:** Waterborne diseases (cholera, typhoid, dysentery) increase medical expenses. **WHO (2022)** states that **80% of diseases in India** are linked to **contaminated drinking water sources**.
    - In Delhi, polluted Yamuna water leads to frequent outbreaks of gastroenteritis and skin infections.

Environmental Impacts

- **Loss of Aquatic Biodiversity:** Pollution causes oxygen depletion, killing fish and aquatic species. **CPCB (2021)** reported that **30% of freshwater fish species in India** are at risk due to river pollution.
    - The **Yamuna River in Delhi** is **biologically dead for over 20 km**, meaning it cannot support any aquatic life.
- **Groundwater Contamination:** Toxic chemicals from industrial waste seep into groundwater, affecting drinking water sources.
    - **India has 20% of the world's most arsenic-contaminated water sources (UNESCO, 2021).**
- **Eutrophication and Algal Blooms:** Excess fertilizers cause algae growth, depleting oxygen levels. **FAO (2020)** found that **nitrogen and phosphorus levels in Indian rivers have increased by 50%** in the last two decades.

Societal Impacts

- **Drinking Water Crisis:** Polluted rivers reduce access to clean drinking water, affecting millions. NITI Aayog (2018) reported that 600 million Indians face high to extreme water stress due to pollution and depletion.
    - Chennai and Bengaluru face water shortages due to contamination of nearby rivers and lakes.
- **Health Hazards and Disease Outbreaks:** Contaminated-river water spreads diseases like diarrhea, hepatitis, and skin infections.
    - Villages near the Krishna River in Andhra Pradesh report high cases of kidney diseases due to heavy metal pollution.
- **Displacement of Communities:** Polluted rivers force rural communities to migrate due to health risks and lack of clean water. UNICEF (2022) states that climate change and river pollution could displace 10 million people in India by 2050.

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- Farmers in Uttar Pradesh's Bundelkhand region are migrating due to drought and pollution in local rivers.

Cultural and Religious Impacts

- **Pollution of Sacred Rivers:** Religious activities like idol immersion, cremation, and bathing pollute sacred rivers. **CPCB (2022)** found that **80% of pollution in the Ganga comes from sewage and religious waste.**
  - The **Ganga and Yamuna Rivers**, revered in Hinduism, are among the most polluted rivers in the world.
- **Decline in Traditional Occupations:** Fishermen, potters, and boatmen dependent on rivers face declining livelihoods. Traditional **fishermen communities in the Godavari and Narmada Rivers** have lost income due to fish deaths.
  - **Over 10 million people in India depend on rivers for traditional occupations (NFHS, 2021).**

Governance and Policy Failures

- **Weak Enforcement of Pollution Laws:** Industries often violate environmental norms due to lack of strict penalties.
  - The Yamuna remains polluted despite Supreme Court orders for its cleanup.
- **Lack of Coordination Among Agencies:** Multiple agencies (MoEF&CC, CPCB, State Pollution Boards) handle pollution, leading to inefficiency.
  - The **Ganga Action Plan (1986)** failed due to lack of coordination between state and central authorities. **₹13,000 crore spent under Namami Gange (2014), yet pollution levels remain high in some stretches.**

Climate Change and Future Risks

- **Increased Flooding and Water Scarcity:** Polluted rivers lose their natural ability to regulate floods and groundwater recharge.
  - Bihar experiences extreme floods due to silt accumulation in the Kosi River. India faces a projected 40% water deficit by 2030 (NITI Aayog, 2021).
- **Rising Costs of Water Purification:** More polluted rivers mean higher costs for treatment and supply of clean water. Mumbai and Chennai spend ₹1,000 crore annually on water purification.
  - India's water purification costs are expected to increase by 30% by 2030 (World Bank, 2022).

RIVER REJUVENATION

River rejuvenation refers to the **restoration of the natural flow, ecological health, and water quality of rivers** degraded by pollution, encroachment, and over-extraction. It involves measures such as **removal of pollutants, desilting, restoring river channels, afforestation, and regulating human activities**.

- The **Kuttamperoor River (Kerala)** was revived after being "dead" for over a decade through **channel deepening, encroachment removal, and bund construction**, demonstrating the role of **public participation + state intervention**.

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Status of River Health in India

- As per **CPCB (2025)**:
  - **296 polluted river stretches (PRS)** across **271 rivers**.
  - Improved from **351 (2018)** → **296 (2025)**.
  - **149 stretches delisted** and **71 showed improvement**.
- Monitoring is done at **4,922 locations**, including **2,260 river sites**.

State trends:

- Highest pollution: Maharashtra, Kerala, Madhya Pradesh, Karnataka.
- Notable improvements: Maharashtra, Assam, Odisha.

Key Government Initiatives

- **Namami Gange Programme** – flagship river rejuvenation effort for Ganga basin.
- **National River Conservation Plan (NRCP)** – covers other rivers.
- **AMRUT & Smart Cities Mission** – sewerage and urban wastewater management.
- **MGNREGS & rural schemes** – support desilting, afforestation, and water body restoration.
- **Forestry-based DPRs (₹19,000 crore)** for rejuvenation of 13 major rivers like Ganga, Yamuna, Godavari, Krishna, etc.
- **Use of Technology: LiDAR, UAVs, drones** for river mapping and monitoring. **Drain Dashboard** for geo-tagged tracking of pollution sources and real-time intervention.

Impacts of River Rejuvenation

- **Ecological**: Restores biodiversity and aquatic ecosystems.
- **Economic**: Supports agriculture, fisheries, and tourism.
- **Social**: Improves livelihoods and access to clean water.
- **Disaster Management**: Enhances flood control and groundwater recharge.

Global and Indian Examples

- **Rhine (Europe), Thames (UK), Singapore River** – successful global models.
- **Ganga Action Plan / Namami Gange** – India's major initiative.

India has made **moderate progress in reducing polluted river stretches**, but challenges remain due to urbanisation, industrial discharge, and weak enforcement. Sustainable river rejuvenation requires **integrated basin management, technology use, and strong Centre–State–community collaboration**.

WAY FORWARD:

- **Expanding Sewage Treatment Plants (STPs):** Upgrade existing **STPs and install decentralized wastewater treatment systems** in smaller towns.
  - **Japan's Johkasou System** treats sewage at the household/community level before discharge. **Delhi Jal Board's STP at Okhla** is India's largest sewage treatment plant, improving **Yamuna water quality**.
- **Industrial Effluent Management:** Implement **Zero Liquid Discharge (ZLD) policies** for high-polluting industries.
  - **Singapore's NEWater Program** recycles industrial wastewater for reuse. **Tamil Nadu's ZLD initiative for textile industries** has reduced pollution in the **Noyyal and Bhavani rivers**.
- **Integrated River Basin Management (IRBM):** Implement **IRBM** for better coordination between **water resources, agriculture, and pollution control agencies**.

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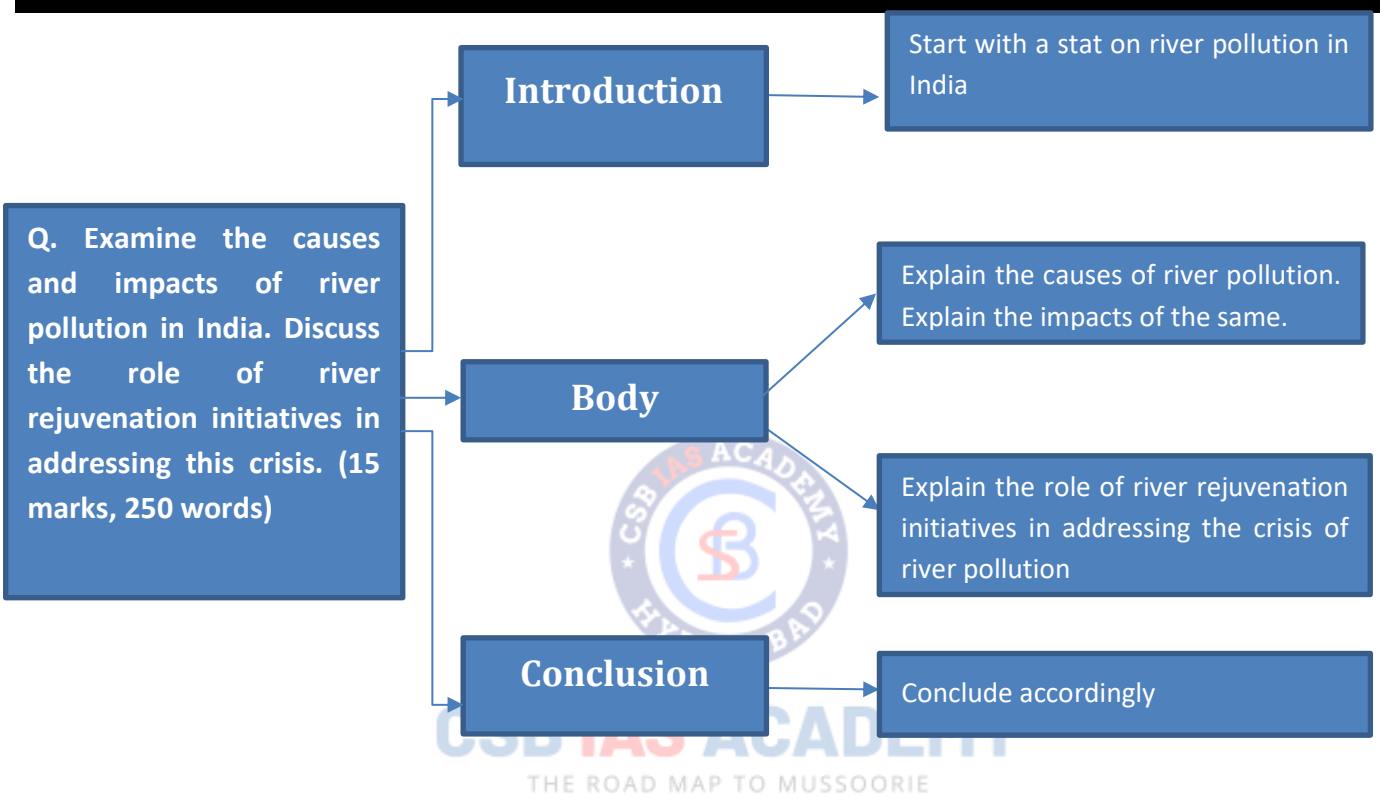
- **The Rhine Action Programme (Europe)** successfully reduced industrial pollution across **Switzerland, Germany, and the Netherlands**. **Maharashtra's Godavari River Basin Plan** integrates urban planning with water conservation efforts.

- **Strengthening Legal Frameworks:** India's **Water (Prevention and Control of Pollution) Act, 1974** lacks strong enforcement. Introduce **strict penalties for non-compliance** and mandatory real-time monitoring of effluents.
    - **USA's Clean Water Act (1972)** imposes heavy fines for industrial pollution. **Punjab Water Regulation and Development Authority (2020)** monitors **water extraction and pollution levels in rivers**.
- **Riverfront Development with Natural Ecosystems:** Promote **eco-friendly riverfront development** with wetlands, forests, and buffer zones.
    - **China's Sponge Cities Program** restores wetlands to absorb pollutants before they reach rivers. **Sabarmati Riverfront Development (Gujarat)** improved **Ahmedabad's flood control and water quality**.
- **Large-Scale Plantation Drives:** Implement **riparian buffer zones** by planting trees along rivers to filter pollutants.
    - **The Thames River Restoration (UK)** improved water quality by reforesting **25,000 hectares of riverbanks**. **Uttar Pradesh's Ganga Haritima Abhiyan** focuses on tree plantation along **Ganga's floodplains**.
- **Reducing Fertilizer and Pesticide Runoff:** Promote **organic farming, crop rotation, and bio-fertilizers** to reduce runoff.
    - **Denmark's Green Farming Policy** reduced nitrogen runoff by **50% in 20 years**. **Sikkim's Organic Farming Model** has improved **river water quality by reducing chemical use**.
- **Eco-Friendly Irrigation Techniques:** Over-irrigation leads to **water wastage and increased chemical runoff**. Adopt **drip irrigation and rainwater harvesting** to optimize water use.
    - **Israel's Drip Irrigation Model** has increased water efficiency in agriculture. **Madhya Pradesh's Micro-Irrigation Scheme** helps farmers use **water-efficient irrigation systems**.
- **Engaging Local Communities in River Conservation:** Encourage **citizen-led river cleaning and monitoring programs**.
    - **The Rhine Cleanup Movement** mobilized **1,00,000 volunteers** to remove plastic waste from the river.
- **Sustainable Religious and Cultural Practices:** Promote **eco-friendly idols and waste management systems**.
    - **Eco-Ganesha Movement in Mumbai** promotes biodegradable idols.
- **Real-Time Water Quality Monitoring:** Use **AI-based sensors and satellite imaging** for real-time pollution tracking.
    - **EU's Smart Water Management System** uses AI to monitor river pollution.
- **Bioremediation and Natural Filtration:** Use **wetlands and bio-filters** to naturally purify polluted rivers.
    - **New York's Natural Water Purification Wetlands** filter **toxic chemicals before reaching rivers**.

PRACTICE QUESTION

Q. Examine the causes and impacts of river pollution in India. Discuss the role of river rejuvenation initiatives in addressing this crisis. (15 marks, 250 words)

APPROACH



MODEL ANSWER

River pollution in India has reached alarming levels, with **296 polluted river stretches identified across 271 rivers (CPCB, 2025)** and nearly **46% of monitored rivers showing high pollution levels (CPCB, 2022)**

Causes of River Pollution

- **Untreated Sewage Discharge**: Nearly **70% of urban sewage is discharged untreated** into rivers. Yamuna in Delhi receives far more sewage than treatment capacity.
- **Industrial Effluents**: Around **40% of industrial waste enters rivers untreated**. Toxic metals (chromium, arsenic) from industries pollute rivers like Ganga.
- **Agricultural Runoff**: Excess use of fertilizers (27 million tonnes annually) causes **eutrophication** and algal blooms.
- **Solid Waste & Plastic Dumping**: **3.5 million tonnes plastic waste**, with 40% reaching water bodies, choking rivers.
- **Religious and Cultural Practices**: Idol immersion and ritual waste introduce heavy metals and chemicals.
- **Weak Governance & Infrastructure Gaps**: Only **30% of cities have adequate sewage treatment facilities**, reflecting regulatory failure.

Impacts of River Pollution

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- **Economic Losses**: Estimated **₹10,000 crore annual losses** in agriculture and fisheries.
- **Public Health Crisis**: **80% of diseases linked to contaminated water** (WHO). Spread of cholera, typhoid, etc.
- **Biodiversity Loss**: **30% freshwater species at risk**; some river stretches biologically dead.
- **Drinking Water Stress**: **600 million Indians face water stress** due to polluted sources.
- **Decline in Livelihoods**: Fishermen, farmers, and river-based occupations severely affected.
- **Cultural Degradation**: Pollution of sacred rivers like Ganga and Yamuna affects religious practices.

Role of River Rejuvenation Initiatives:

- **Pollution Abatement Programs**: **Namami Gange** and **NRCP** target sewage treatment and river cleaning.
- **Infrastructure Development**: AMRUT and Smart Cities Mission enhance **sewerage and wastewater treatment**.
- **Technological Interventions**: Use of **LiDAR, drones, and Drain Dashboard** for real-time monitoring.
- **Afforestation and Catchment Treatment**: ₹19,000 crore DPRs for restoring 13 major river basins.
- **Community Participation Models**: **Kuttamperoor River (Kerala)** successfully revived.
- **Measured Improvements**: Polluted stretches reduced from **351 (2018) to 296 (2025)**; **149 stretches delisted and 71 improved**.

River pollution in India is a complex ecological and governance challenge. While rejuvenation initiatives have shown measurable progress, long-term success requires **integrated river basin management, strict enforcement, and community-driven conservation** to ensure sustainable river ecosystems.

GENERAL STUDIES-IV

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30. PERSONAL ETHICS VS PROFESSIONAL ETHICS

iMPACT ANALYSIS

SYLLABUS:

GS 4 > Ethics

REFERENCE NEWS:

- Recently, in a major corporate development, **HDFC Bank's part-time chairman and independent director** Atanu Chakraborty resigned from the board.
- In his resignation letter, he stated that **"certain happenings and practices within the bank, that I have observed over the last two years, are not in congruence with my personal values and ethics."**

MORE ON NEWS:

- Later, he clarified that he was **not alleging any wrongdoing**, and the bank too maintained that there were no governance lapses or ethical violations. However, the **wording of the letter and the suddenness** of the resignation unsettled investors and sparked concerns over transparency, internal practices, and board-level differences.
- The issue gained significance because **Chakraborty was part of the board during an important phase, including the HDFC Ltd merger**. His mention of developments observed over the last two years raised questions about whether the issue reflected **only a personal ethical mismatch or deeper institutional discomfort**.
- The resignation triggered a **sharp fall in the bank's stock**, after which the **RBI approved interim arrangements, with Keki Mistry** appointed as interim chairman for three months. Though analysts said the selloff was overdone given the bank's strong fundamentals, many still called for greater disclosure.
- The episode shows how **personal ethics** may compel an individual to withdraw from an institution, while **professional ethics** demands clarity, accountability, and responsibility towards stakeholders and public trust.

PERSONAL ETHICS:

- **Personal ethics** are the moral principles a person follows based on conscience, character, upbringing, and reason. They answer the question: **"What do I personally believe is right?"**
- **Examples:** honesty, integrity, compassion, promise-keeping, refusing a bribe, resigning when one feels morally uncomfortable.
- This can be linked to **Immanuel Kant's categorical imperative**. Kant says one should act only according to a rule that **one can want everyone to follow universally**.

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- So if lying, cheating, or using people merely as tools cannot be universal moral laws, they are wrong even if they bring benefit. In that sense, personal ethics is often **duty-based**: a person acts **because it is right, not because it is useful.**

PROFESSIONAL ETHICS:

- **Professional ethics** are the standards of conduct expected in a profession, office, or institution. They answer the question: **"What is the right thing to do in my role?"**
- **Examples:** confidentiality by doctors and lawyers, impartiality by judges, objectivity by civil servants, transparency by corporate directors, accountability by public officials.
- Professional ethics can often be linked to **utilitarian ethics**, though not fully reduced to it, which means decisions are **judged based on their consequences** and the extent to which they promote the **greatest good for the greatest number**, even if some individual interests are compromised.
- In many professions, decisions are judged by their **impact on the larger number of stakeholders**. A professional often has to think in terms of **public trust, institutional stability, efficiency, welfare, and consequences**.

Aspect	Personal Ethics	Professional Ethics
Definition	Moral principles that guide an individual's behaviour based on conscience and personal sense of right and wrong	Standards of behaviour defined by a profession, organisation, or public role
Source	Inner values, beliefs, conscience, upbringing, and personal experiences	Codes of conduct, laws, institutional rules, professional standards, and stakeholder expectations
Philosophical basis	Often linked to **Kantian ethics** — duty, moral law, and the categorical imperative	Often linked to **utilitarian ethics** and **role-based duty** — welfare, consequences, and institutional responsibility
Focus	Personal moral integrity in all areas of life	Ethical conduct within a specific professional or institutional role
Application	Applied in personal, social, and moral choices	Applied in workplace, governance, administration, business, medicine, law, etc.

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Flexibility	Often more **absolute or rigid**, because it is tied to deeply held convictions	More **contextual**, as it may require balancing duty, consequences, and competing interests
Purpose	To help a person live in accordance with their conscience	To ensure trust, accountability, fairness, professionalism, and responsible decision-making
Accountability	Primarily to one's own conscience and moral self	To employers, clients, institutions, law, regulators, and society
Ethical values	Honesty, integrity, compassion, courage, loyalty, promise-keeping, self-respect, sincerity	Accountability, impartiality, objectivity, confidentiality, transparency, competence, responsibility, fairness, fiduciary duty
Scope	Broad: influences all dimensions of life	Narrower: specific to one's profession or office
Examples	Refusing a bribe, telling the truth despite personal loss, resigning over a value conflict, returning lost money	Maintaining confidentiality, making impartial decisions, ensuring fair disclosure, avoiding conflict of interest
Conflict point	May push a person to reject something that feels morally wrong even if it is institutionally accepted	May require a person to act with restraint, procedure, and balance even when personal feelings differ

ETHICAL ISSUES INVOLVED IN THE ATANU CHAKRABORTY'S CASE:

Primacy of Personal Ethics:

- Chakraborty's resignation was based on a perceived mismatch between his **personal values and organisational practices**.
- Even without alleging wrongdoing, he chose to step down, indicating that **conscience can override position and power**.
- This reflects a **Kantian ethical stance**, acting according to one's duty and moral principles, irrespective of consequences.
- **Ethical issue:** Should individuals continue in roles where they feel morally uncomfortable, even if no illegality exists?

Responsibility under Professional Ethics:

- As chairman of a systemically important bank, he had a **fiduciary duty towards stakeholders** — investors, employees, regulators, and the public.
- Professional ethics demands:
  - **Clarity in communication**
  - **Avoidance of ambiguity that may create panic**
  - **Responsibility towards institutional trust and market stability**
- His resignation letter used strong ethical language **but lacked specific details, creating confusion.**
- **Ethical issue:** Is it responsible to make value-based assertions without adequate

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disclosure in a sensitive position?

Transparency vs Institutional Stability:

- Markets rely heavily on **transparent disclosures**.
- The ambiguity in the resignation led to:
  - sharp fall in stock price
  - erosion of investor confidence
- **Ethical dilemma:**
  - **Too much disclosure** → may harm institution
  - **Too little disclosure** → creates suspicion and mistrust

Duty to Raise Concerns Internally:

- He mentioned observing issues over **two years**.
- Ethical question arises:
  - Were concerns adequately raised within the board earlier?
  - Was resignation the **last resort**, or a sudden step?
- Professional ethics expects:
  - escalation through proper channels
  - attempt at institutional correction before exit

Impact on Public Trust:

- Banks operate on **trust and credibility**.
- Even without wrongdoing, such exits:
  - create perception of hidden issues
  - weaken confidence in governance
- **Ethical issue:** Leaders must consider how their actions affect systemic trust, not just personal conviction

Core Ethical Dilemma in the Case:

- **Personal ethics:** "I cannot continue because it conflicts with my values."
- **Professional ethics:** "My actions must be communicated responsibly and should not harm stakeholders without clarity."

(**Whether a person should prioritise personal moral integrity by stepping down** due to value mismatch, **or uphold professional responsibility by ensuring clear communication and safeguarding stakeholder trust**, even if it means continuing in the role or disclosing more transparently.)

HOW PERSONAL ETHICS AND PROFESSIONAL ETHICS DEPEND ON EACH OTHER:

- **Personal ethics gives life to professional ethics**:
  - Codes, rules, and conduct manuals cannot ensure ethical administration on their own. They become meaningful only when individuals bring **integrity, honesty, courage of conviction, and probity in public life** to their roles.
  - **For example, E. Sreedharan** became identified with clean execution and time-bound delivery in the Delhi Metro, showing how personal integrity strengthens professional excellence and public trust.
- **Professional ethics protects personal morality from pressure:**
  - An individual may be ethical, but without institutional safeguards, that person can be isolated, pressured, or compromised. Professional ethics provides **codes of conduct,**

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accountability mechanisms, transparency norms, objectivity, and rule-based decision-making, which help honest individuals function within institutions.

- **For example, T.N. Seshan's** work in the Election Commission showed how office-based ethics such as impartiality, transparency, and accountability can reinforce personal uprightness and convert it into systemic reform.

- **Personal ethics often triggers institutional correction:**
  - Many reforms begin when an individual refuses silence. This is where **moral courage, truthfulness, sense of duty, and non-compromise with conscience** become professionally valuable.
  - **For example, Justice J. Chelameswar** raised concerns about judicial functioning in the larger public interest, showing how personal ethical conviction can push institutions towards greater transparency and accountability.
- **Professional ethics scales up personal values into public good:**
  - Personal virtues matter most when institutions convert them into durable systems. Professional ethics does this by translating values into **fair procedures, fiduciary responsibility, responsiveness, service orientation, and commitment to the common good**.
  - **For example, Verghese Kurien's** role in building the Amul cooperative model showed how fairness, social responsibility, and ethical leadership can be institutionalised for the benefit of millions of farmers.
- **When professional ethics is weak, personal ethics bears the whole burden:**
  - If institutions do not reward **integrity, impartiality, and accountability**, ethical individuals often face repeated costs. This shows that personal ethics alone is not enough.
  - **For example, Ashok Khemka's** repeated transfers are often cited to show how honesty and probity can become difficult to sustain when institutional culture does not adequately support ethical conduct.
- **Personal-professional congruence is essential for trust:**
  - The strongest institutions are those where **personal conscience** and **professional duty** move in the same direction. When they diverge, ethical dilemmas emerge.
  - **For example, in the HDFC Bank episode, Atanu Chakraborty's resignation** reflected personal moral discomfort, while the fallout showed that professional ethics also required clearer communication, accountability to stakeholders, and protection of public trust.

CONFLICT BETWEEN PERSONAL ETHICS AND PROFESSIONAL ETHICS:

- **Moral integrity vs role obligation:**
  - An individual may feel morally uncomfortable with certain practices, but professional roles demand continuity and adherence to institutional norms. This creates tension between **integrity and duty to office**.
  - **For example, in the HDFC Bank case, Atanu Chakraborty's resignation** reflected personal moral discomfort, while his position required stability and responsibility towards stakeholders.
- **Truthfulness vs institutional restrain:**

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- Personal ethics values **honesty and openness**, but professional ethics often requires **confidentiality, discretion, and controlled communication**. Speaking out may be morally right but professionally sensitive.
- **For example, Edward Snowden's disclosures** reflected personal commitment to truth, but violated professional obligations of secrecy and confidentiality.

- **Compassion vs rule-based objectivity:**
  - Personal ethics may push for **empathy and compassion**, while professional ethics demands **objectivity, impartiality, and rule-based decisions**. This creates dilemmas in public administration.
  - **For example, a civil servant may feel compassion for an ineligible beneficiary but must deny benefits due to rules to maintain fairness and probity.**
- **Loyalty vs public interest:**
  - Personal ethics may emphasise **loyalty to colleagues or organisation**, while professional ethics prioritises **public interest and accountability**. Choosing between the two can be difficult.
  - **For example, whistleblowers like Satyendra Dubey** exposed corruption despite risks, prioritising public interest over organisational loyalty.
- **Courage of conviction vs career consequences:**
  - Acting according to personal ethics often requires **moral courage**, but may lead to transfers, isolation, or career setbacks, whereas professional systems may reward conformity.
  - **For example, Ashok Khemka's** repeated transfers are often cited as the cost of maintaining personal integrity in a challenging institutional environment.
- **Absolute values vs situational decision-making:**
  - Personal ethics is often **absolute (right vs wrong)**, while professional ethics is **contextual**, requiring balancing of consequences and competing interests. This leads to dilemmas in complex governance situations.
  - **For example, during disaster management, prioritising some areas over others may conflict with the ideal of equal treatment but is justified on utilitarian grounds.**

WAY FORWARD:

- **Clear ethical communication norms:** Senior professionals must ensure that any value-based concerns are communicated with **clarity, precision, and responsibility**, especially in sensitive institutions like banks, where ambiguity can erode public trust.

- **Strengthening institutional ethics frameworks:** Organisations should institutionalise **codes of conduct, ethics committees, whistleblower protection, and grievance redressal mechanisms** so that ethical concerns are addressed internally before escalating.

- **Encouraging ethical leadership:** Leaders must demonstrate **integrity, objectivity, accountability, and probity in public life**, ensuring that personal values align with professional responsibilities and set a tone for the organisation.

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- **Balancing transparency with stability:** Institutions must evolve mechanisms for **responsible disclosure**, where transparency is ensured without triggering unnecessary panic or speculation.
- **Ethics training and value congruence:** Regular training on **ethical decision-making, emotional intelligence, and conflict resolution** should be promoted so that individuals can handle dilemmas between personal conscience and professional duty.
- **Regulatory oversight and disclosure standards:** Regulators like RBI should ensure **higher disclosure standards and governance audits** in systemically important institutions to maintain credibility and stakeholder confidence.

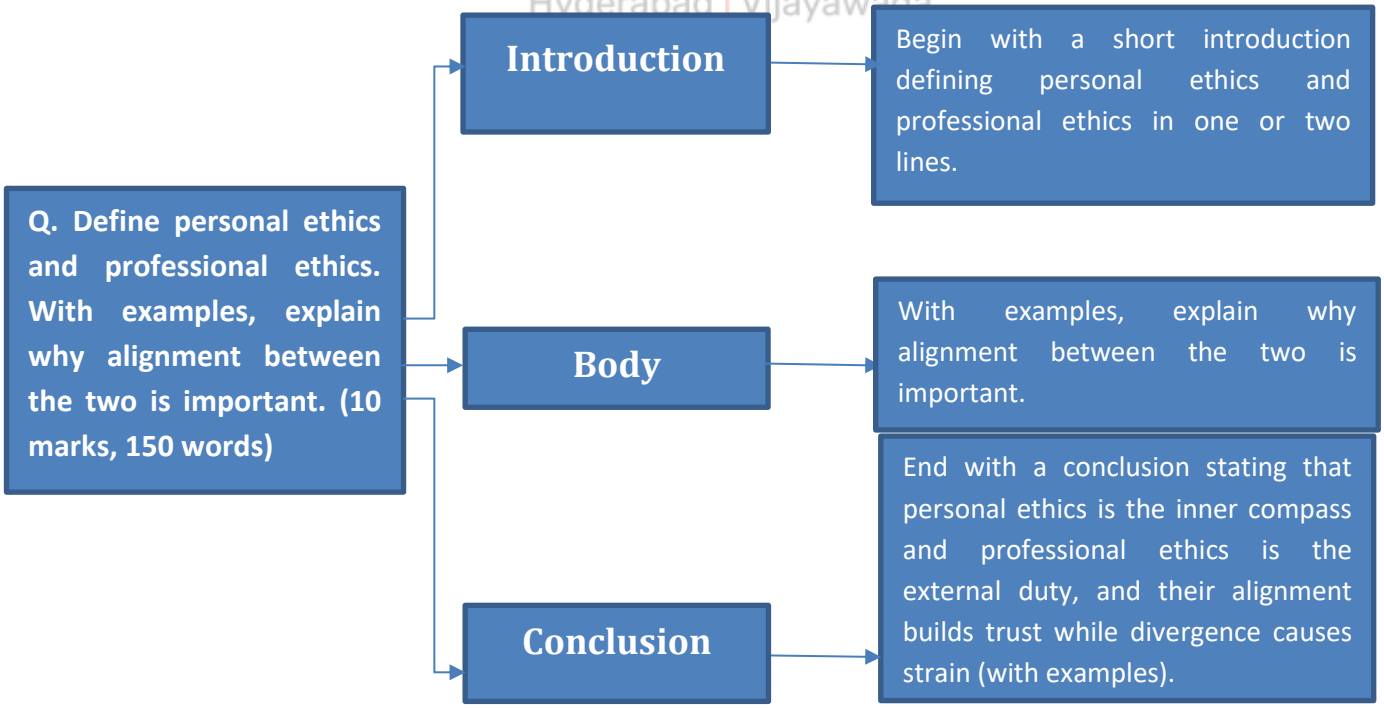
CONCLUSION:

- The HDFC Bank episode highlights that ethical dilemmas in public and corporate life rarely arise from clear wrongdoing, but from the **tension between personal conscience and professional responsibility** . While personal ethics ensures moral integrity and prevents silent compromise, professional ethics ensures accountability, transparency, and protection of stakeholder trust. The real challenge lies not in choosing one over the other, but in **harmonising both**, so that individuals act with integrity while also upholding their responsibility towards institutions and society.

PRACTICE QUESTION

Q. Define personal ethics and professional ethics. With examples, explain why alignment between the two is important. (10 marks, 150 words)

APPROACH



MODEL ANSWER

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Personal ethics are the moral principles guided by an individual's conscience and sense of right and wrong, whereas **professional ethics** are the standards of conduct expected in a profession, office, or institution. While personal ethics asks, ***"What do I believe is right?",*** professional ethics asks**,** ***"What is the right thing to do in my role?"*** Their alignment is important because ethical institutions are ultimately built by ethical individuals.

Importance of alignment between personal and professional ethics:

1. Ethical institutions depend on ethical individuals: Rules, codes, and procedures alone cannot ensure ethical conduct unless individuals bring **honesty, integrity, and courage of conviction** into their roles. For example, **E. Sreedharan** combined personal discipline and integrity with professional commitment, which strengthened public trust in the Delhi Metro.

2. Professional ethics gives structure to personal values: Personal moral values become socially effective only when they are expressed through **accountability, objectivity, transparency, and service orientation** in institutional life. For example, **T.N. Seshan** used his personal uprightness within the professional authority of the Election Commission to strengthen transparency and discipline in elections.

3. Alignment enhances public trust and legitimacy: When personal conscience and professional conduct move together, institutions gain **credibility, legitimacy, and trust**. For example, **Verghese Kurien** translated his personal commitment to fairness and social responsibility into the professional design of the Amul cooperative system, benefiting millions of farmers.

4. Misalignment creates strain for the individual: When personal values clash with professional roles, individuals face **moral conflict, isolation, or career costs**. For example, **Ashok Khemka's** repeated transfers are often cited as the burden faced by an officer trying to uphold personal honesty within a difficult institutional environment.

5. Misalignment also weakens institutions: If institutions do not support ethical individuals, they suffer from **loss of trust, lowered morale, and weakened credibility**. For example, in **HDFC Bank**, part-time chairman and independent director **Atanu Chakraborty resigned** stating that "certain happenings and practices within the bank" were not in congruence with his "personal values and ethics." While he later clarified that he was not alleging wrongdoing, the resignation and the ambiguity surrounding it created confusion among stakeholders and weakened institutional confidence.

6. Alignment enables ethical reform: Institutional reform often begins when personal moral courage is expressed through professional duty. For example, **Justice J. Chelameswar** raised concerns regarding judicial functioning, showing how personal ethical conviction can promote institutional transparency and accountability.

Personal ethics provides the **inner moral compass**, while professional ethics provides the **outer framework of duty and accountability**. When both align, they create **ethical institutions and strengthen public trust**; for example, leaders like **E. Sreedharan, T.N. Seshan, and Verghese Kurien** show how personal integrity can enrich professional life. When they diverge, both the individual and the institution face strain—the individual may suffer moral conflict or professional isolation, while the institution may face confusion, distrust, and weakened legitimacy, as seen in **Atanu Chakraborty's resignation from HDFC Bank** and the repeated transfers of **Ashok Khemka**.

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