CSB IAS ACADEMY

The Road Map to Mussoorie…

MAINS COMPILATION

CURRENT AFFAIRS

DECEMBER, 2024

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Dear Aspirants,

Welcome to the December edition of CSB IAS Academy, thoughtfully curated to equip you with the knowledge and analytical skills required for the UPSC Civil Services Examination. As we step into 2025, this issue serves as a comprehensive guide to bridging the gap between your preparation and the dynamic current affairs landscape.

*In this edition, we explore critical issues like **India's fertility rate trends**, the feasibility of **simultaneous elections**, the **No-Detention Policy**, and the **Places of Worship Act of 1991**. Highlights include the **State of Forest Report 2023**, Household Consumption Expenditure Survey, **the Railways (Amendment) Bill 2024**, plastic pollution, desertification, and disaster preparedness, alongside global perspectives on the **Syrian crisis** and India-Kuwait relations, ensuring a comprehensive alignment with the UPSC syllabus.*

*By aligning these themes with the UPSC syllabus, **iMPACT** aims to be your indispensable resource for acing the Mains Examination. With the New Year, let this edition be a catalyst for honing your critical thinking and answer writing abilities.*

Happy Learning and a Prosperous New Year!
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GENERAL STUDIES-I

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1. FERTILITY RATE IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Indian Society >> Population and associated issues

REFERENCE NEWS:

India, once synonymous with rapid population growth, is now witnessing a decline in fertility rates. According to the United Nations, the country's fertility rate has dropped to 2 children per woman as of 2024—a sharp decline from 6.2 in 1950.

Several political leaders' concern about India's falling fertility rate is misplaced. The advocacy of three or more children per couple, to avoid the problems being faced by developed economies — Japan, Korea, China, and several European countries — is problematic, especially in a country like India whose population threatens to cross the 1.6 billion mark by 2060.

FERTILITY RATE:

Fertility rate refers to the **average number of children born to a woman over her lifetime**, assuming she experiences the current age-specific fertility rates throughout her reproductive years (typically defined as ages 15–49). It is often expressed as the **Total Fertility Rate (TFR)**.

- A TFR of **2.1 children per woman** is considered the **replacement level fertility**, at which a population replaces itself from one generation to the next without migration.

FERTILITY RATE IN INDIA

- According to the **National Family Health Survey (NFHS-5)** (2019-2021), the **TFR of India is 2.0**, which is below the replacement level of 2.1.
- Urban areas have a lower TFR (**1.6**) compared to rural areas (**2.1**).
- There are significant variations across states:
    - **Lowest TFR**: Sikkim (1.1), West Bengal (1.6).
    - **Highest TFR**: Bihar (3.0), Uttar Pradesh (2.4).

Periodic Changes in India's Fertility Rate

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- **1950s–1970s**: TFR in the 1950s was around **5.9**, reflecting high fertility due to cultural and economic factors like early marriages, lack of contraceptive access, and agrarian lifestyles. Introduction of the **Family Planning Program (1952)** marked India's first efforts to address population growth.

- **1980s–1990s**: TFR reduced to **4.0** by the 1980s, aided by increased awareness, availability of contraceptives, and women's education. States like Kerala achieved early reductions in TFR through investments in health and education.

- **2000s–2010s**: Further decline to **2.4** by 2011 (Census 2011). Factors contributing to decline:

    - **Economic development** leading to smaller families.
    - **Improved female literacy**: Female literacy rose from 53.7% (2001) to 65.5% (2011).
    - Promotion of contraceptives and improved healthcare access.

- **2019–2021 (NFHS-5)**: India's TFR fell below replacement level to **2.0**, attributed to:

    - Increased urbanization.
    - Government schemes like **Mission Parivar Vikas** targeting high-fertility districts.

REASONS FOR FALLING FERTILITY RATE IN INDIA:

- **Increased Access to Contraceptives:** 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)**.
- **Improvement in Female Literacy and Education:** Female literacy has risen dramatically, from 53.7% in 2001 to 68.4% in 2011 (Census). Educated women tend to marry later and have fewer children.
    - Kerala and Tamil Nadu, with high female literacy rates (above 90%), have TFRs of **1.7** and **1.8**, respectively.
- **Delayed Marriages:** NFHS-5 data shows the median age at first marriage has increased to **19.9 years** nationally. Urban areas have a higher median age at marriage, contributing to TFRs as low as **1.6** in cities.
- **Urbanization and Economic Development:** Urbanization leads to smaller family preferences due to higher living costs, space constraints, and lifestyle changes. India's urban population increased from **27.8% in 2001** to **34.9% in 2020**.
    - Urban states like Maharashtra (TFR: 1.7) have lower fertility rates than rural states like Bihar (TFR: 3.0).
- **Decline in Infant and Child Mortality Rates:** Improved healthcare systems have reduced infant mortality, lowering the "insurance births" (extra children due to child mortality

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risks). Infant Mortality Rate (IMR) declined from **66 per 1,000 live births in 2001** to **28 per 1,000 live births in 2020** (SRS).

- States like Kerala with low IMR (6 per 1,000) have a TFR of 1.7.

- **Economic Aspirations and Women's Employment:** Rising economic aspirations have shifted focus from large families to quality upbringing and career pursuits. More women joining the workforce has contributed to fertility reduction.
  - States with higher female labour participation, like Karnataka, show a TFR of 1.7.
- **Cultural and Social Norms:** Changing societal norms regarding family size due to modernization and exposure to media have influenced fertility preferences.
  - Urban middle-class families often prefer one or two children to balance work-life commitments.
- **Government Policies and Awareness Campaigns:** Schemes like **Janani Suraksha Yojana** and **Pradhan Mantri Matru Vandana Yojana** incentivize health-seeking behaviour among mothers.
  - High-fertility districts in Uttar Pradesh and Bihar have shown a gradual TFR decline due to focused interventions under **Mission Parivar Vikas**.
- **Cultural Shift Away from Son Preference:** Traditional preference for male children is declining with the rise in gender equality and awareness campaigns. NFHS-5 shows improvement in the sex ratio at birth to **929 girls per 1,000 boys** compared to earlier surveys.
- **Access to Healthcare and Reproductive Services:** Better maternal and child healthcare, including immunization and antenatal care, reduces the need for multiple pregnancies.
  - Institutional deliveries have increased from 78.9% in NFHS-4 to **88.6% in NFHS-5**, directly influencing family planning.

SIGNIFICANCE OF FALLING FERTILITY RATE IN INDIA

- **Population Stabilization:** A fertility rate below the replacement level (2.1) helps stabilize population growth, easing pressure on resources like food, water, and infrastructure.
  - India's TFR has declined to **2.0** (NFHS-5, 2021), reducing the risk of overpopulation, especially in high-density areas like Uttar Pradesh and Bihar.
- **Harnessing the Demographic Dividend**: A lower fertility rate leads to a favourable age structure with a larger working-age population (15-64 years) relative to dependents (children and elderly). India is at the peak of its **demographic dividend** (expected to last until 2055), with 68% of its population in the working age group.
  - States like Kerala (TFR: 1.7) and Tamil Nadu (1.8) have effectively leveraged this dividend, attracting investments and fostering economic growth. China successfully utilized its demographic dividend in the 1980s and 1990s to become an economic superpower.

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- **Improved Quality of Life**: Smaller family sizes allow families to invest more in health, education, and quality upbringing of children.
    - Kerala's emphasis on education and healthcare (TFR: 1.7) correlates with better human development indices like literacy (96.2%) and life expectancy (75.2 years).
- **Reduced Maternal and Child Mortality**: Fewer pregnancies reduce health risks for mothers and improve child survival rates.
    - India's maternal mortality rate (MMR) declined from **130 per 100,000 live births in 2014-16** to **97 in 2018-20**, alongside a TFR decline.
- **Economic Impacts**: A declining fertility rate can reduce the dependency ratio, freeing resources for economic investments. As fertility rates decline, states like Maharashtra and Karnataka attract industries due to a better-skilled and larger working-age population.
- **Environmental Sustainability**: A stabilized population can reduce environmental degradation and carbon footprint.

CHALLENGES OF FALLING FERTILITY RATE

- **Aging Population**: A consistently falling fertility rate leads to an aging population, increasing the proportion of elderly dependents relative to the working-age population.
    - In **Kerala** (TFR: 1.7), 16.5% of the population is aged 60+, significantly higher than the national average of 10.1%.
    - **Japan** (TFR: 1.4): The proportion of the elderly (65+) has risen to over 28%, causing labour shortages and economic stagnation.
- **Shrinking Workforce**: A lower TFR eventually reduces the size of the working-age population, leading to labour shortages and reduced economic productivity.
    - **South Korea** (TFR: 0.8): Faces declining productivity and increasing reliance on automation to counter workforce shortages.
    - In India, states like **Tamil Nadu** (TFR: 1.8) are already seeing a slowdown in labour-intensive industries.
- **Economic Pressure on Social Welfare Systems**: Increased spending on pensions, healthcare, and elderly care may strain government budgets.
    - In countries like **Germany** and **Italy**, where TFRs are below 1.5, pensions and elderly care constitute a significant share of national expenditure.
- **Gender Imbalance and Low Fertility Trap**: Persistent low fertility rates can lead to a **low fertility trap**, where population decline becomes self-reinforcing.
    - **Japan** and **Italy** have implemented incentives for childbirth, such as parental leave and financial benefits, but fertility rates remain low.
- **Regional and Economic Disparities**: States with lower fertility may face aging challenges sooner, while high-fertility states may lag in economic and social development.

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- **Kerala** is experiencing aging-related challenges, while **Bihar** (TFR: 3.0) still struggles with high population growth and poverty.

- **Decline in Consumer Markets**: A falling fertility rate reduces the youth population, affecting demand for education, housing, and consumer goods.
    - In **Japan**, a shrinking youth demographic has led to school closures and declining sales in youth-centric markets like toys and fast fashion.
- **Social and Cultural Shifts**: Declining fertility could weaken traditional family structures, as fewer children may lead to isolation for the elderly.
    - **South Korea** has witnessed increased loneliness and mental health issues among the elderly as family sizes shrink.
- **Potential for Population Decline**: Over time, a TFR below replacement level leads to population decline, affecting economic growth and national influence.
    - **Russia** (TFR: 1.5): Has implemented policies to reverse population decline, including financial incentives for larger families, to maintain its global standing.
- **Resistance to Immigration as a Solution**: While immigration can counteract falling fertility, it may face political and social resistance.
    - European countries like **Germany** have relied on immigration to stabilize their workforce, but integration challenges persist.

METHODS ADOPTED BY COUNTRIES TO ADDRESS DECLINING POPULATION RATES

Pro-Natalist Policies

- **Direct Financial Support**: **France** offers generous child benefits, tax exemptions, and free public daycare. This has helped maintain a TFR of 1.8, one of the highest in Europe. **South Korea** provides monthly child allowances and free education to encourage larger families, though with limited success (TFR still at 0.8).

- **Parental Leave Policies**: **Sweden** offers up to **480 days of paid parental leave**, split between both parents, making it easier for couples to balance work and family life.

- **Housing and Education Subsidies**: **Singapore** provides subsidized housing and education grants for families with multiple children.

Immigration Policies

- **Relaxed Immigration Laws**: **Canada** uses its points-based system to attract skilled immigrants, adding about **400,000 immigrants annually**. **Germany** actively recruits skilled workers from abroad to sustain its workforce in critical industries.

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- **Cultural Integration Programs**: **Australia** supports immigrants through English language training and community programs to ensure smooth integration.

Technological Adaptations

- **Automation in Industries**: **Japan** uses robots and AI in healthcare, manufacturing, and services to compensate for workforce decline.
- **Smart Cities and Infrastructure**: Countries like **South Korea** are investing in smart cities that rely on technology to reduce the demand for manual labour.

Social and Cultural Campaigns

- **Public Awareness Campaigns**: **Hungary** promotes family values and offers tax benefits for families with three or more children.

FOCUS AREAS FOR INDIA TO SUSTAIN BALANCED POPULATION GROWTH:

India's current TFR (2.0) is below the replacement level, indicating the need for strategic interventions to avoid future challenges while leveraging its demographic dividend.

- **Focus on Regional Disparities:** States like **Kerala** and **Tamil Nadu** have low fertility rates and must prepare for aging populations, while high-fertility states like **Bihar** and **Uttar Pradesh** need to accelerate fertility decline through education and health investments.
- **Invest in Education and Healthcare:** Improve literacy, particularly female literacy, as educated women tend to have fewer but healthier children. Expand access to quality healthcare, including maternal and child services.
- **Promote Balanced Urbanization:** Develop second-tier cities and towns to reduce the pressure on megacities, providing balanced opportunities across regions.
- **Incentivize Family-Friendly Policies:** Introduce tax benefits, subsidized childcare, and extended maternity/paternity leave to encourage families to have children without economic strain.
- **Prepare for Aging Population:** Develop infrastructure for elder care, including healthcare, pensions, and social security. Create elder-friendly cities with accessible public transportation and healthcare facilities.
- **Leverage Immigration:** India could attract skilled workers from neighbouring countries to address labour shortages in specific industries.
- **Strengthen Workforce Productivity:** Invest in skill development and technological education to enhance workforce efficiency, reducing dependency on large population growth.

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- **Promote Sustainable Development:** Balance population growth with resource conservation to avoid environmental degradation.

National Population Policy 2000 (NPP 2000)

The **National Population Policy 2000** (NPP 2000) was formulated to address the challenges of population stabilization, reproductive health, and welfare. It provides a policy framework to improve family welfare services and ensure equitable and sustainable development.

Key Objectives

1. **Immediate Objectives**:
   - Address unmet needs for contraception, healthcare infrastructure, and personnel.
   - Reduce infant and maternal mortality rates.
2. **Medium-Term Objectives** (by 2010):
   - Achieve replacement-level fertility (TFR of 2.1).
   - Promote delayed marriage and childbearing.
3. **Long-Term Objectives** (by 2045):
   - Achieve a stable population consistent with sustainable economic growth, social development, and environmental protection.

Key Targets

- Reduce **Infant Mortality Rate (IMR)** to below 30 per 1,000 live births.
- Reduce **Maternal Mortality Ratio (MMR)** to below 100 per 100,000 live births.
- Achieve 100% institutional deliveries.
- Universal access to information and contraceptive services.
- Promote late marriages (not before 18 years for girls and 21 years for boys).
- Increase literacy, especially among women, to delay pregnancies and improve healthcare access.

PRACTICE QUESTION

Q. Discuss the reasons for the falling fertility rate in India. Highlight the associated opportunities and challenges. Suggest measures India should adopt to sustain a balanced population growth. (15 marks, 250 words)

APPROACH

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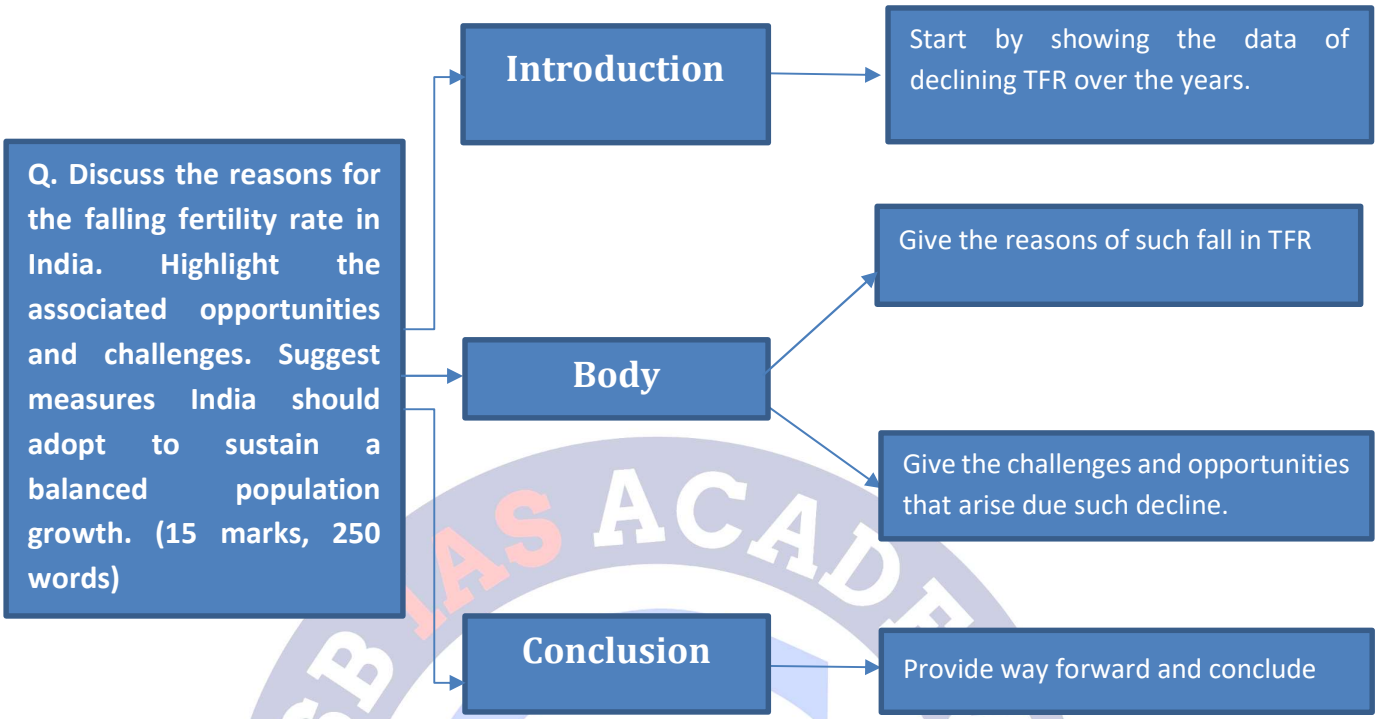

MODEL ANSWER

India's Total Fertility Rate (TFR) has declined from 6.2 in 1950 to 2.0 in 2024, according to NFHS-5 and the United Nations. This indicates a demographic transition and reflects socio-economic progress. However, this shift brings both opportunities and challenges that require balanced policy interventions.

REASONS FOR DECLINING FERTILITY RATE

1. **Improved Female Literacy**: Female literacy rose from 53.7% (2001) to 68.4% (2011), correlating with delayed marriages and smaller families.
2. **Urbanization**: Urban TFR (1.6) is lower due to higher living costs and lifestyle preferences.
3. **Healthcare Access**: Declining Infant Mortality Rate (28 per 1,000 live births in 2020) reduces the need for "insurance births."
4. **Economic Aspirations**: Rising career goals and female workforce participation influence family size.

OPPORTUNITIES OF DECLINING FERTILITY RATE:

- **Population Stabilization:** A fertility rate below the replacement level (2.1) helps stabilize population growth, easing pressure on resources like food, water, and infrastructure.

- **Harnessing the Demographic Dividend**: A lower fertility rate leads to a favourable age structure with a larger working-age population (15-64 years) relative to dependents (children and elderly). India is at the peak of its **demographic dividend** (expected to last until 2055), with 68% of its population in the working age group.
- **Improved Quality of Life**: Smaller family sizes allow families to invest more in health, education, and quality upbringing of children.
- **Reduced Maternal and Child Mortality**: India's maternal mortality rate (MMR) declined from **130 per 100,000 live births in 2014-16** to **97 in 2018-20**, alongside a TFR decline.

CHALLENGES OF FALLING FERTILITY RATE:

- **Aging Population**: A consistently falling fertility rate leads to an aging population, increasing the proportion of elderly dependents relative to the working-age population.
    - In **Kerala** (TFR: 1.7), 16.5% of the population is aged 60+, significantly higher than the national average of 10.1%.
- **Shrinking Workforce**: A lower TFR eventually reduces the size of the working-age population, leading to labour shortages and reduced economic productivity.
    - **South Korea** (TFR: 0.8): Faces declining productivity and increasing reliance on automation to counter workforce shortages.
- **Gender Imbalance and Low Fertility Trap**: Persistent low fertility rates can lead to a **low fertility trap**, where population decline becomes self-reinforcing.
    - **Japan** and **Italy** have implemented incentives for childbirth, such as parental leave and financial benefits, but fertility rates remain low.
- **Regional and Economic Disparities**: States with lower fertility may face aging challenges sooner, while high-fertility states may lag in economic and social development.
    - **Kerala** is experiencing aging-related challenges, while **Bihar** (TFR: 3.0) still struggles with high population growth and poverty.
- **Potential for Population Decline**: Over time, a TFR below replacement level leads to population decline, affecting economic growth and national influence.

MEASURES TO SUSTAIN A BALANCED POPULATION GROWTH:

- **Focus on Regional Disparities:** States like **Kerala** and **Tamil Nadu** have low fertility rates and must prepare for aging populations, while high-fertility states like **Bihar** and **Uttar Pradesh** need to accelerate fertility decline through education and health investments.
- **Invest in Education and Healthcare:** Improve literacy, particularly female literacy, as educated women tend to have fewer but healthier children. Expand access to quality healthcare, including maternal and child services.

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- **Incentivize Family-Friendly Policies:** Introduce tax benefits, subsidized childcare, and extended maternity/paternity leave to encourage families to have children without economic strain.
- **Strengthen Workforce Productivity:** Invest in skill development and technological education to enhance workforce efficiency, reducing dependency on large population growth.
- **Promote Sustainable Development:** Balance population growth with resource conservation to avoid environmental degradation.

India must address regional disparities, improve human capital, and prepare for population aging to sustain balanced growth. Strategic investments in education, healthcare, and family welfare will enable India to reap the benefits of its demographic dividend while ensuring socio-economic stability.

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2. PERMANENT COMMISSION TO WOMEN IN ARMED FORCES

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Indian Society >> Role of women

REFERENCE NEWS:

In a relief to a woman Army officer, the Supreme Court granted her permanent commission saying she was wrongly excluded from the consideration when other similarly placed officers were given the benefit. Observing she had had a distinguished service, the bench exercised its plenary powers under **Article 142** of the Constitution and directed the grant of permanent commission to her.

PERMANENT COMMISSION TO WOMEN:

The permanent commission (PC) to women in the Indian Armed Forces marks a significant step toward gender equality, allowing women to serve in the military beyond their short service tenure. This decision aligns with constitutional guarantees of equality and enhances operational efficiency by utilizing the full potential of skilled personnel.

- Women officers were first inducted in the **military nursing service** in 1927 and as **medical officers** in 1943.
- In 1992, women were made eligible for appointment as officers in certain specific cadres such as **Judge Advocate General** (JAG) and **Army Education Corps** (AEC). Women were initially brought in for 5 years of service, which was then converted into **Short Service Commission** (SSC). However, women were not given the choice to opt for permanent commission at the end of their 10-year service.
- In 2008, permanent commission was extended to women in streams of Judge Advocate General and Army Education Corps.
- In 2019, the government decided to grant permanent commission to women in all 10 branches where they are inducted for Short Service Commission. However, the benefit was not applicable retrospectively and thus ruled out the women officers in the job now.
- In 2010, Delhi High Court granted eligibility to women officers for permanent commission in the Army. However, the central government appealed against this in the Supreme Court.
- In 2020, the Supreme Court ordered the government to grant permanent commission to women officers in the Army's non-combat support units on par with their male

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counterparts. SC rejected the government contention that women are **"physiologically weak**" to be granted permanent commission and command appointments. It called this argument emanating from a **deeply ingrained gender stereotype in the Indian society** which regards a man as being dominant and women are considered weak links and caregivers only.

- In 2021, the Indian Navy deployed four women officers onboard its warships after a gap of around 23 years. For the first time in 1998, women officers started getting deployed onboard warships but the decision was changed soon after due to certain logistical and other issues.
- In May 2021, the first batch of 83 women soldiers was inducted into the Indian Army's military police.
- In 2023, the Prime Minister said the government is committed to increasing the strength of women in the armed forces.

The SC exercising its powers under Article 142 of Constitution grants permanent commission to a woman Army officer (**Lt. Col. Suprita Chandel vs UOI & Ors**).

Background of Case: Following an amendment in 2013 to original policy, Armed Forces Tribunal had granted relief to other applicants by allowing them a one-time age relaxation. However, appellant was denied benefit as she was not a party to the original case.

SC Verdict: 'Reliefs granted to similarly situated individuals would be automatically extended to individuals who have not litigated their cases'. The court cited similar judgments in past i.e. **Amrit Lal Berry (1975) & K.I. Shephard case (1987).**

SIGNIFICANCE OF GRANTING PERMANENT COMMISSION TO WOMEN:

- **Advancing Gender Equality**: Granting PC to women aligns with **Articles 14, 15, and 16** of the Indian Constitution, ensuring equal opportunities in employment. It challenges gender-based discrimination and promotes women's empowerment in a traditionally male-dominated institution.
    - In **The Secretary, Ministry of Defence vs Babita Puniya & Ors**, the Supreme Court directed the government to grant PC to women in the Indian Army in all services except combat roles. It rejected the government's argument citing "physiological limitations" and "domestic obligations" of women, stating it violated **Article 14 (Right to Equality)** of the Constitution.
- **Enhanced Career Opportunities for Women**: Women can now rise to senior ranks (Colonel and above) and take up leadership roles that were previously unavailable under Short Service Commission (SSC). This improves job satisfaction, enhances morale, and provides a clear career trajectory.

- **Setting Global Benchmarks**: India joins progressive nations like the **USA, UK, Israel, and Australia**, where women serve in leadership and combat roles. This strengthens India's image as a country committed to gender equality and modern military practices.
- **Boosting Women's Participation in the Workforce**: Providing PC encourages more women to join the armed forces, contributing to higher representation of women in the formal workforce. This promotes gender diversity in the defence sector, fostering inclusivity and balanced representation.
- **Enhancing Societal Perceptions of Women**: Women officers in senior positions serve as role models, inspiring societal change and challenging gender stereotypes. This fosters a cultural shift toward accepting women in leadership roles across sectors.
    - Lt. Colonel Sophia Qureshi became the first woman officer to lead an Indian Army contingent in a multinational exercise, showcasing women's leadership potential.
- **Economic and Social Benefits**: Retaining skilled women officers reduces the cost of hiring and training replacements. This provides economic benefits to the military and encourages societal acceptance of women in unconventional careers.
- **Building a More Inclusive Armed Forces:** Granting PC fosters a culture of inclusivity and equality within the armed forces. This strengthens team cohesion, mutual respect, and collaboration among personnel of all genders.
    - The Navy's induction of women on warships has been seamless due to infrastructural and cultural adaptations promoting inclusivity.
- **Strengthening Human Rights Commitments**: Granting PC reflects India's adherence to international human rights obligations, including **CEDAW (Convention on the Elimination of All Forms of Discrimination Against Women)**. This strengthens India's global standing as a champion of gender equality.
    - India is currently the eleventh largest contributor of women military peacekeepers to the United Nations with 124 now deployed.

CHALLENGES AND CONCERNS:

- **Resistance to Change in Military Culture**: The armed forces have traditionally been male-dominated institutions, and integrating women into leadership roles challenges long-standing traditions. Resistance from within the ranks can hinder smooth implementation of policies and acceptance of women in command positions.
    - The government's initial arguments in the **Babita Puniya case (2020)** cited "physiological limitations" and "family obligations," reflecting ingrained biases.
- **Exclusion from Combat Roles**: Women are still excluded from direct combat roles (e.g., infantry, armored corps) due to concerns over physical standards, operational feasibility, and societal perceptions. This limits career advancement opportunities for women and perpetuates gender disparities in the armed forces.

- Studies by the Centre for Military Readiness show that, on average, female soldiers are smaller and have 45-50% less upper body strength and 25-30% less aerobic capacity compared to men, impacting endurance.

- **Operational Challenges**: Deploying women in leadership positions in field areas, high-altitude zones, or forward locations presents operational difficulties. Ensuring safety, adapting infrastructure, and addressing physical challenges in adverse environments require additional planning.
    - Both men and women are at risk of torture in the event of being captured by the enemy. Both male and female prisoners are at risk of torture, but misogynistic societies may be more willing to abuse female prisoners, and women are more vulnerable to this torture.
- **Infrastructural Constraints**: Many military facilities are not equipped with separate accommodation, sanitation, or facilities tailored for women. This can create logistical hurdles, especially in remote or high-altitude areas.
    - The Indian Navy had to make significant modifications to warships before inducting women officers on board.
- **Societal and Family Expectations**: Women officers often face societal and familial expectations related to marriage, childbearing, and caregiving, which may conflict with the demands of a long-term military career.This dual burden can affect their performance, career choices, and retention rates.
- **Psychological Challenges and Workplace Bias**: Women in leadership roles may face discrimination, workplace harassment, or lack of cooperation from male subordinates. This can affect team dynamics and the confidence of women officers. Many women complain that despite their technical qualifications, they are generally detailed for what are perceived **as woman-like jobs, like routine desk work.**
- **Limited Representation in Senior Ranks**: Even with PC, it will take time for women to reach senior ranks (e.g., Brigadier, Major General) due to their limited induction in earlier decades. A lack of senior women officers limits representation in policy-making and strategic decision-making roles.
- **Uneven Implementation Across Services**: While women have been granted PC in many branches, differences in policy implementation between the Army, Navy, and Air Force create inconsistencies. This unequal treatment undermines the uniformity of policies across the armed forces.
    - The Air Force has been more progressive, allowing women in combat roles like fighter pilots, unlike the Army and Navy.
- **Lack of Specialized Support Systems**: Psychological counselling, mentorship, and grievance redressal mechanisms tailored for women are limited. This affects the ability of women officers to navigate challenges and build long-term careers.

WOMEN IN FOREIGN ARMIES:

United States: In the US Army women make up about **15.7 per cent** of the Active Army strength and serve in 95 per cent of all Army assignments. They have been participating in various operations, albeit in support functions, however, on voluntary basis few have also being assigned certain 'combat support' duties.

Israel: Israel is one of the only few countries in the world (along with Norway and Eritrea) with a mandatory military service requirement for women. As of now, 88% to 92% of all operational roles in the Israel Defense Forces (IDF) are open to female candidates.

Britain: Women are able to apply for most jobs in the Army except those whose "primary duty is to close in with and kill the enemy": Infantry, Cavalry, Armoured Corps are currently not open to women. Women constitute 9.1% of the total strength, 11.2% of the officer cadre and 8.7% of the other ranks.

China: Chinese women comprise about 4.5 per cent of PLA. Nearly all women soldiers serve in military support positions and are concentrated in headquarters, hospitals, research institutions, and communication facilities. There are no women in ground combat role.

WAY FORWARD:

- **Expand Roles for Women**: Gradually integrate women into combat roles, starting with pilot projects in areas like infantry and armoured corps. Countries like **Israel and the USA** have successfully integrated women into combat positions with proper training and infrastructure.
- **Strengthen Infrastructure and Facilities**: Upgrade military facilities to include gender-neutral accommodations, restrooms, and sanitation in field and operational areas. The **Indian Navy's modifications to warships** for accommodating women officers serve as a model for other services.
- **Promote Gender-Sensitive Training**: Revise training modules to address the specific needs of women without compromising operational standards. **Australia's Defence Forces** incorporate gender-sensitive training programs to foster inclusivity.
- **Foster an Inclusive Culture**: Conduct regular gender-sensitization workshops to challenge stereotypes and promote cooperation among personnel. The **Indian Air Force** has effectively integrated women pilots, highlighting the importance of creating an inclusive environment.
- **Provide Equal Career Progression Opportunities**: Ensure women have equal access to promotions, command positions, and prestigious training programs like the **Defence Services Staff College (DSSC)**. Recent Supreme Court judgments have paved the way for women in senior leadership roles in the armed forces.

- **Create Support Systems for Women**: Establish mentorship programs, grievance redressal mechanisms, and psychological counselling tailored for women officers. **US Military Family Services** provide support for work-life balance, serving as a model for India.
- **Encourage Recruitment from Diverse Backgrounds**: Expand outreach programs to include underrepresented communities, such as rural women and marginalized groups. The **Indian Navy's recruitment drives** in tribal and rural areas are a step in the right direction.
- **Incorporate Technology for Inclusivity**: Use simulation-based training and digital tools to provide equitable learning opportunities. **Singapore's SkillsFuture Program** integrates technology for inclusive skill-building, which can be adapted for military training.
- **Develop Clear Anti-Harassment Policies**: Implement strict anti-harassment policies with a transparent reporting mechanism to ensure a safe workplace. The **UN Peacekeeping Forces** have strict codes of conduct for preventing gender-based harassment.
- **Improve Representation in Decision-Making**: Increase women's representation in higher ranks and policymaking bodies to ensure their voices are included in strategic decisions. **Lt. General Madhuri Kanitkar**, one of India's highest-ranking women officers, exemplifies the value of diversity in leadership.
- **Establish Policy Uniformity Across Services**: Ensure that all branches (Army, Navy, Air Force) adopt consistent policies on inclusivity, recruitment, and career progression. The **Supreme Court's directives** on permanent commission for women must be uniformly applied across services.
- **Leverage Global Best Practices**: Learn from countries like **Canada, Israel, and the USA**, which have implemented inclusive policies in their armed forces. Israel's **Caracal Battalion**, a mixed-gender combat unit, demonstrates effective inclusion in operational roles.
- **Periodic Monitoring and Feedback**: Set up independent committees to evaluate the progress of inclusivity measures and address gaps. Annual reviews by bodies like the **Parliamentary Standing Committee on Defence** can ensure accountability

PRACTICE QUESTION

Q. The granting of Permanent Commission to women in the Indian Armed Forces is a progressive step, but challenges remain in achieving true inclusivity. Discuss the significance of this decision and suggest measures to overcome existing challenges. (15 marks, 250 words)

APPROACH

Start by mentioning about Permanent Commission to women through a current affair or any case law.

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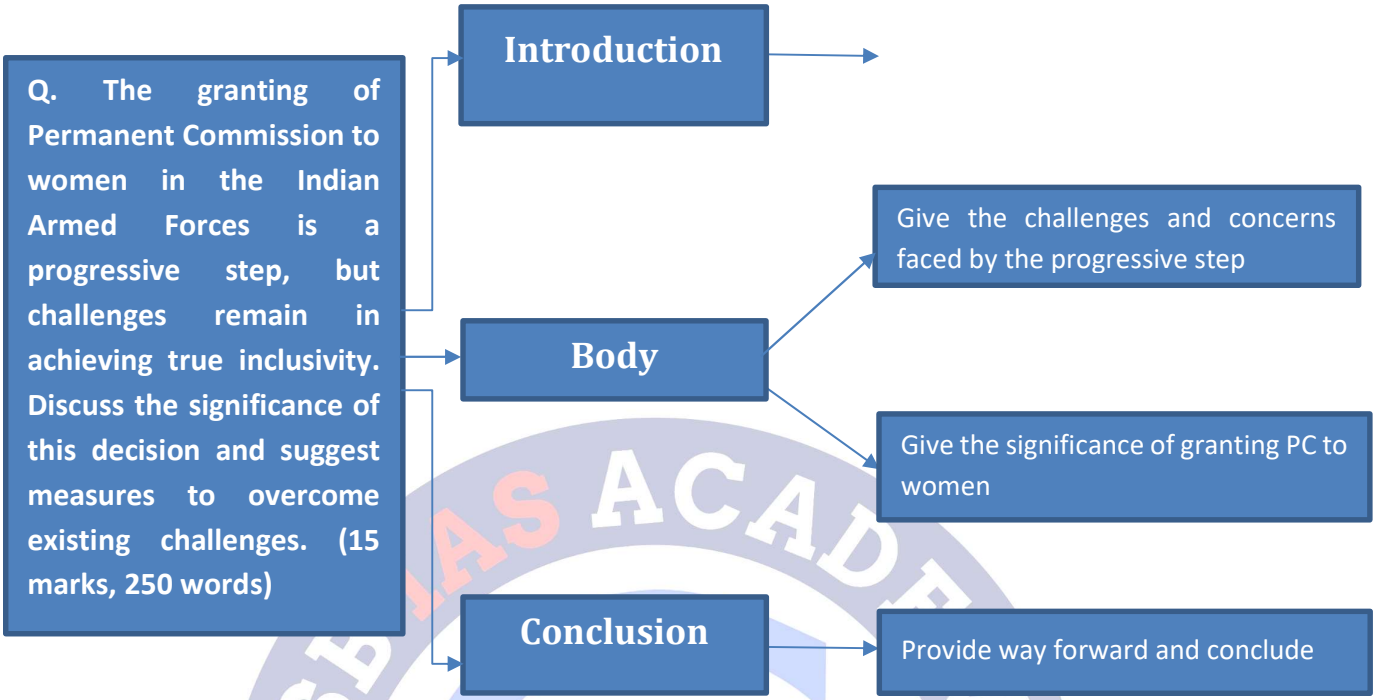

MODEL ANSWER

The granting of Permanent Commission (PC) to women in the Indian Armed Forces marks a milestone in gender equality. The **Supreme Court's 2020 decision** in the Babita Puniya case mandated PC for women in all non-combat roles, enabling them to serve beyond short-term tenures. This decision challenges traditional stereotypes, aligning with constitutional guarantees under **Articles 14 and 16**.

SIGNIFICANCE OF GRANTING PERMANENT COMMISSION TO WOMEN

1. **Advancing Gender Equality**: PC ensures equal career opportunities and challenges gender-based discrimination in a male-dominated institution.
2. **Enhanced Career Progression**: Women can now rise to senior ranks, taking leadership roles previously unavailable to them.
3. **Operational Efficiency**: Retaining skilled officers reduces turnover and enhances readiness.
4. **Global Alignment**: Brings India closer to global practices, with countries like the **USA and Israel** integrating women into leadership roles.
5. **Societal Impact**: Women in senior positions inspire cultural shifts, challenging societal norms about women's roles.
6.

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CHALLENGES IN IMPLEMENTATION

1. **Exclusion from Combat Roles**: Women are still barred from combat positions, limiting career growth.
2. **Infrastructural Gaps**: Many military facilities lack gender-sensitive accommodations.
3. **Institutional Resistance**: Traditional biases persist, slowing the acceptance of women in leadership roles.
4. **Workplace Bias**: Discrimination and harassment may undermine team dynamics.
5. **Limited Representation**: It will take time for women to reach senior decision-making ranks due to earlier limited inductions.

WAY FORWARD

1. **Expand Roles**: Gradually open combat roles to women, as seen in **Israel and the USA**.
2. **Upgrade Infrastructure**: Ensure gender-neutral facilities across all military installations.
3. **Cultural Sensitization**: Conduct workshops to address biases and promote inclusivity.
4. **Support Systems**: Provide mentorship, counselling, and grievance mechanisms for women officers.
5. **Policy Uniformity**: Apply consistent PC policies across all services (Army, Navy, Air Force).

The grant of Permanent Commission to women is a significant step toward inclusivity and operational excellence in the Indian Armed Forces. By addressing existing challenges through targeted reforms and adopting global best practices, India can ensure that its armed forces fully leverage the potential of women officers while fostering a culture of equality and respect.

3. RIVER LINKING IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Geography > Resource geography > Water

REFERENCE NEWS:

- Prime Minister Narendra Modi laid the foundation stone of the Ken-Betwa River Linking National Project on December 25, 2024, the 100th birth anniversary of former Prime Minister Atal Bihari Vajpayee.
- The project is critical for addressing water scarcity in the **drought-prone Bundelkhand region** of Madhya Pradesh and Uttar Pradesh.

RIVER LINKING:

- The interlinking project aims to link India's rivers by a network of reservoirs and canals that will allow for their water capacities to be shared and redistributed.

HISTORY:

- The first thoughts of inter-linking Indian rivers were made by British engineers in the late 1850s.
- In the past, several river linking projects have been taken up. For instance, the **Periyar Project**, under which transfer of water from Periyar basin to Vaigai basin was envisaged, was commissioned in 1895. Other projects such as **Parambikulam Aliyar, Kurnool Cudappah Canal, Telugu Ganga Project, and Ravi-Beas-Sutlej** too were undertaken.
- In the 1960s, Dr Kanuri Lakshmana Rao, an Indian engineer and former irrigation minister, proposed that India create a "**National Water Grid**" to transport surplus water from the north to the drier south.
- A modern version of the grid concept has its origins in the **National Perspective for Water Resources Development report** that the Ministry of Water Resources released in 1980. However, the Congress-led governments have been hostile to the scheme.
- The interlinking of rivers, initially at basin rather than national level, was revived again by the Narendra Modi-led BJP government in 2014.

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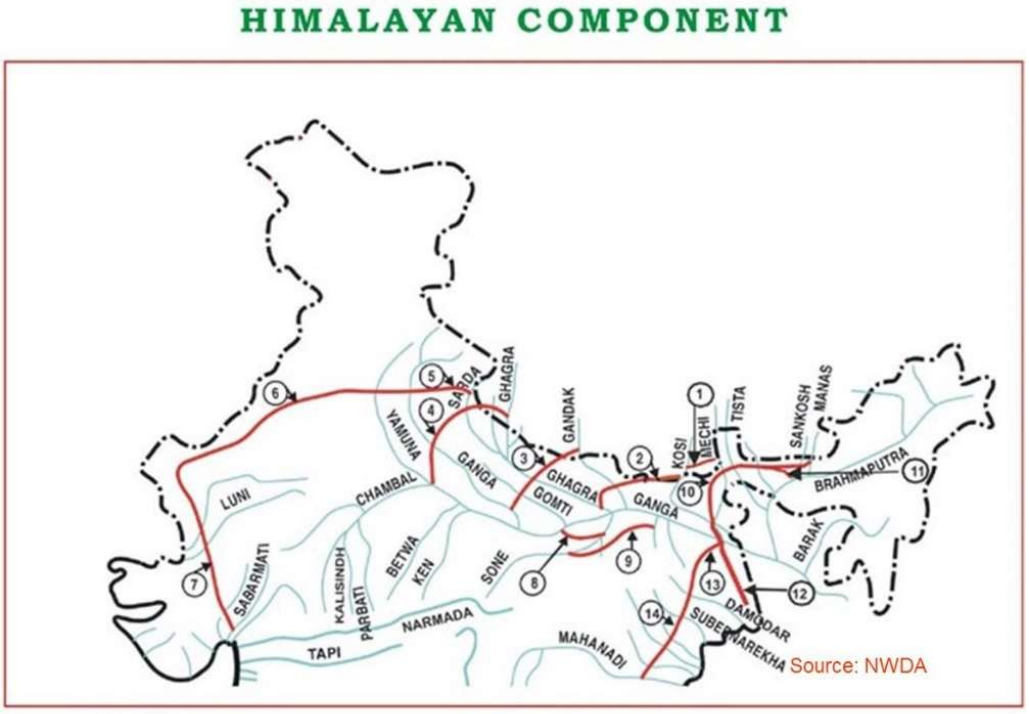
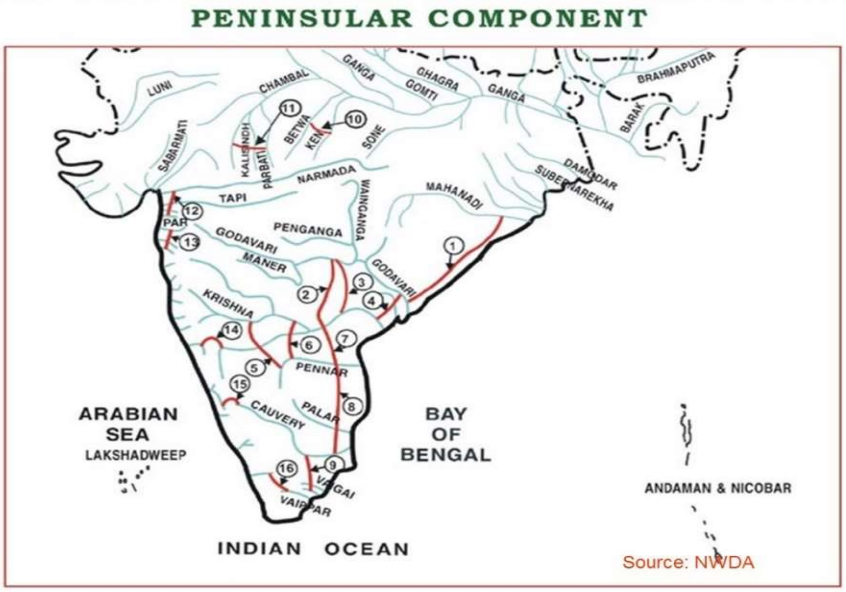
NATIONAL RIVER LINKING PROJECT:

- The **National Perspective plan**, popularly known as the **National River Linking Project (NRLP)**, envisages the transfer of water from **'surplus' basins to 'deficit' basins**, through inter-basin water transfer projects.
- The project comprises of **30 links to connect 37 rivers** across the nation through a network of nearly 3000 storage dams to form a gigantic South Asian Water Grid.
- The '**National Water Development Agency**' was established under the plan to complete a series of feasibility studies for the proposed links.
- The project includes **three components:**
  1. **Himalayan Component:** This component aims to construct storage reservoirs on the Ganga and Brahmaputra rivers, as well as their tributaries in India and Nepal.



1. Kosi – Mechi
2. Kosi – Ghagra
3. Gandak – Ganga
4. Ghagra – Yamuna *
5. Sarda – Yamuna *
6. Yamuna – Rajasthan
7. Rajasthan – Sabarmati
8. Chunar- Sone Barrage
9. Sone Dam – Southern Tributaries of Ganga
10. Manas –Sankosh - Tista - Ganga
11. Jogighopa – Tista – Farakka (Alternate)
12. Farakka – Sunderbans
13. Ganga (Farakka) – Damodar – Subernarekha
14. Subernarekha – Mahanadi

  2. **Peninsular Component or the Southern Water Grid:** It envisages linking the Mahanadi and Godavari to feed the Krishna, Pennar, Cauvery, and Vaigai rivers. Besides this, the Ken River will also be linked to the Betwa, Parbati, Kalisindh, and Chambal rivers.



1. Mahanadi (Manibhadra) – Godavari (Dowlaiswaram) *
2. Godavari (Inchampalli) – Krishna (Nagarjunasagar) *
3. Godavari (Inchampalli) – Krishna (Pulichintala) *
4. Godavari (Polavaram) – Krishna (Vijayawada) *
5. Krishna (Almatti) – Pennar *
6. Krishna (Srisailam) – Pennar *
7. Krishna (Nagarjunasagar) – Pennar (Somasila) *
8. Pennar (Somasila)–Palar- Cauvery (Grand Anicut) *
9. Cauvery (Kattalai) – Vaigai – Gundar
10. Ken – Betwa *
11. Parbati – Kalisindh – Chambal *
12. Par – Tapi – Narmada *
13. Damanganga – Pinjal *
14. Bedti – Varda
15. Netravati – Hemavati
16. Pamba – Achankovil – Vaippar *

3. **Intra-state inter-linking:** This component explores the prospect of linking rivers within a state.

- As of now, six projects — the Ken-Betwa, Damanganga- Pinjal, Par-Tapi-Narmada, Manas-Sankosh-Teesta-Ganga, Mahanadi-Godavari and Godavari-Cauvery (Grand Anicut) — have been under examination of the authorities.
- The Central government is also working on the establishment of an exclusive body called **National Interlinking of Rivers Authority** to implement the projects.

KEN BETWA PROJECT:

- It is the first project under the National Perspective Plan for interlinking of rivers.

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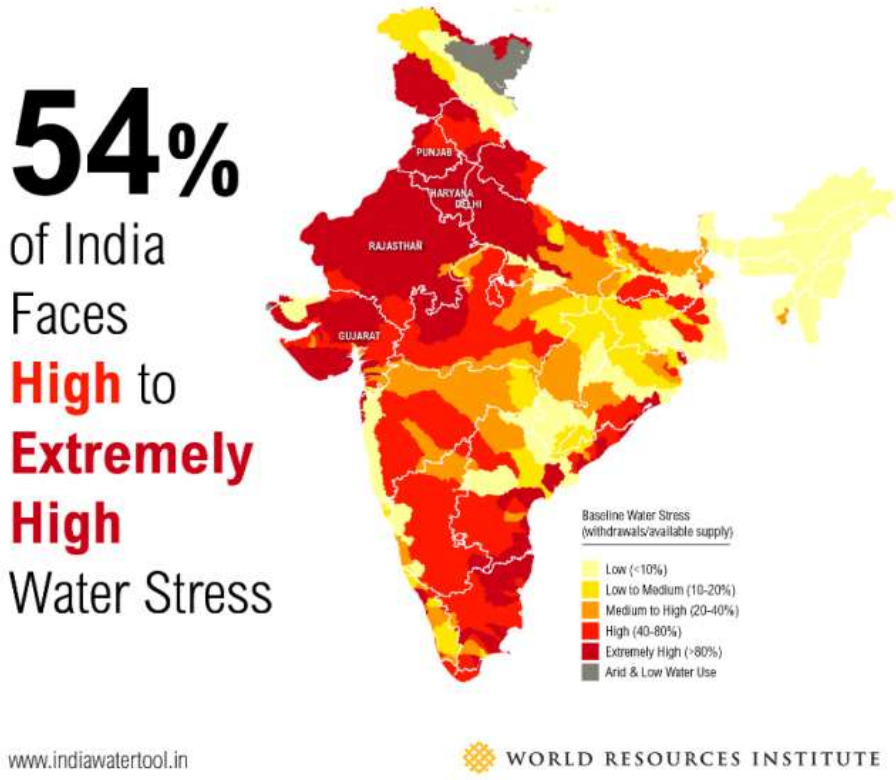
- The project involves transferring of water **from the Ken river to the Betwa river** through the construction of **Daudhan dam and a canal** linking the two rivers, the Lower Orr Project, Kotha Barrage and the Bina Complex Multipurpose Project.
- According to the **Jal Shakti Ministry**, the project is expected to provide annual **irrigation to 10.62 lakh hectares** (8.11 lakh ha in MP and 2.51 lakh ha in UP) of land, supply **drinking water to about 62 lakh people**, and generate **103 MW of hydropower** and **27 MW of solar power.**

- The project is proposed to be ready in eight years and is expected to boost socio-economic prosperity in the **backward Bundelkhand region.**
- The **Union Cabinet approved the Ken-Betwa River Linking Project in December 2021**, with an estimated cost of ₹44,605 crore at **2020-21 prices**.
- Infrastructure company NCC Ltd has been awarded the contract for the Daudhan Dam.
- According to the Jal Shakti Ministry, the KBLP project is proposed to be implemented in **eight years.**

THE NEED FOR RIVER INTERLINKING IN INDIA:

- **Meet rising demand:**
  - India has around **18 percent of the world's population but only 4 percent of the usable water resources**. By 2050, it is expected that India, as a whole, could be categorised as a 'water scarce'. To prevent this, river linking offers a solution.



- **Effective utilization of monsoon rain:**
  - A large share of the country's rain falls during the monsoon season (**between July and September**) and there is **large special variation**. Interlinking can effectively transfer the water to the deficit regions.
- **Encourage irrigated agriculture:**
  - The rainfed areas constitute more than **50% of the total cropped area** and account for more than **40 percent of the total food production** (Source: ICAR). Interlinking of rivers will ensure year-round water availability and reduce dependence on monsoon rains. It in turn leads to increase in agri-productivity and farmers income.
- **Reduce exploitation of groundwater:**
  - India is increasingly relying on groundwater to meet its domestic, agricultural and industrial needs, resulting in severe groundwater depletion and pollution. For instance, **90% of the groundwater consumed in India is used for irrigating crops**, making it the primary water source for agriculture.
  - Linking rivers will ensure improved access to surface water, improves the quality and reduces the stress on groundwater.

- **Reduce floods and droughts:**
  - About **12 % of land in India is prone to floods, while almost one-sixth area remains prone to drought**. The river linking project will mitigate the impacts of recurrent floods in northern and eastern India while easing the water shortages in western and southern India.
  - For instance, the **Sutlej-Yamuna Link Canal** was designed to channel excess water from the Sutlej to the water-deficient Yamuna basin, although the project has faced delays due to **political disputes.**
- **Hydro power generation:**
  - India needs clean energy to fuel its development processes, and river water can be leveraged for this. Himalayan rivers have immense hydro power potential, which can help India meet its rising demand for power.
- **Poverty alleviation:**
  - Fulfilling water needs impact socio-economic life of people which will help end poverty. It also offers potential employment and income for rural areas through fishing and aquaculture.
- **Strengthen economy:**
  - One bad monsoon has a direct and debilitating economic impact on India. River linking helps manage this risk and also offers the potential benefits of **transportation through the waterways**, thereby leading to **reduction in logistics cost**.

ISSUES IN RIVER LINKING:

- **Idealistic calculations:**
  - The calculations of excess water rests on favorable conditions like sufficient rainfall, steady flow and other presumptive calculations. However, in reality, such calculations rarely hold true.
  - For instance, a study published last year by **IIT-Bombay scientists** even found **that moving large quantities of water** as part of river linking projects can affect **land-atmosphere interplay and feedback** and lead to a mean rainfall **deficit by up to 12 per cent in September**.
- **Ecological impact:**
  - The ecology of every river is unique and letting the waters of two rivers mix may affect biodiversity. Also, construction of reservoirs results in submersion of large area of forest lands.
  - For instance, the **Ken-Betwa link submerges about 7.6% of the total Panna Tiger Reserve area**. Also, diversion of flood water will affect natural supply of nutrients for agricultural lands in the downstream areas, making agriculture less economic.

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- Downstream of the national park, the Daudham dam is also likely to affect the Gharial population in the **Ken Gharial sanctuary along with vulture nesting sites.**

- **New climatic realities:**
  - New anthropogenic factors clubbed with climatic aberrations has set the tone for an impending water crisis. Changes in the hydrological profile of Indian rivers could leave current surplus rivers with a deficit.
- **Cost of projects:**
  - The cost for linking the Himalayan and peninsular rivers is estimated at **Rs 5.5 lakh crore**. This being a project that will take decades to complete, serious cost overruns can be expected. Hence, the cost-benefit ratio might not be favourable.
- **Displacement of people:**
  - The projects involve construction of massive networks of canals and dams, which would lead to large-scale displacement of people.
  - **For instance,** to implement the Ken-Betwa Project, the government will have to displace the people of **ten villages** in Chhatarpur district in Madhya Pradesh.
- **Difficulty in storing water:**
  - The excess water received during monsoons should be held somewhere to be used in dry season, but the amount of water flowing in the short period of time, especially in Brahmaputra and Ganga, is too huge to be stored.

- **Transboundary water disputes:**
  - **International water disputes**, such as those between India and Bangladesh, and **interstate water disputes**, such as the Cauvery water dispute between Karnataka and Tamil Nadu, are a major hurdle in the successful operation of river linking.
- **Hydro politics**:
  - Water is an emotional issue for most part of the country. Political parties have leveraged them for mobilizing people. Hence, obtaining consensus among the various stakeholders is difficult.
- **Ignores water security:**
  - A focus on such water infrastructure could lead to the so-called “reservoir effect,” where the construction of reservoirs can reduce the incentive to take other actions that could improve water security outcomes.
- **International experiences:**
  - Efforts in other parts of the world yielded less than positive experiences. For eg: The diversion of water from **Amu Darya and the Syr Darya in Afghanistan resulted in the rapid shrinking of the Aral Sea**.

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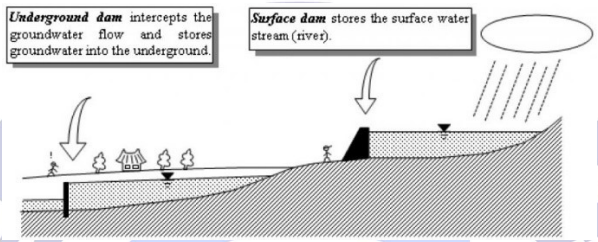
WAY FORWARD:

River linking was launched as a solution to the persistence of hunger and water insecurity in Indian society. However, such grand infrastructure projects are not the only way. There are a number of cheaper, socially and environmentally-benign options:

- Increasing **irrigation efficiency** through measures such as micro irrigation.
- Growing **crops that are appropriate for the climatic conditions** of the region in which they are grown.
- **Arresting groundwater depletion** through suitable recharging and creation of sub-surface dams.



- Developing local solutions such as **rainwater harvesting**
- Ensure that existing hydel infrastructure is maintained and operated to its full potential.
- Making rainwater harvesting and groundwater management mandatory part of building codes.
- Active involvement of grassroot democratic institutions in water conservation and management.
- Developing a robust system of data collection of river regimes and forecasting of rainfall patterns.
- Ensuring continuous dialogue and cooperation among stakeholders on the various aspects of water-sharing and management.

PRACTICE QUESTION

Q. "While river linking projects offer a potential solution to India's water security challenges, their implementation must be carefully assessed against environmental, economic, and social costs". Critically analyse India's river linking projects? (10 marks, 150 words)

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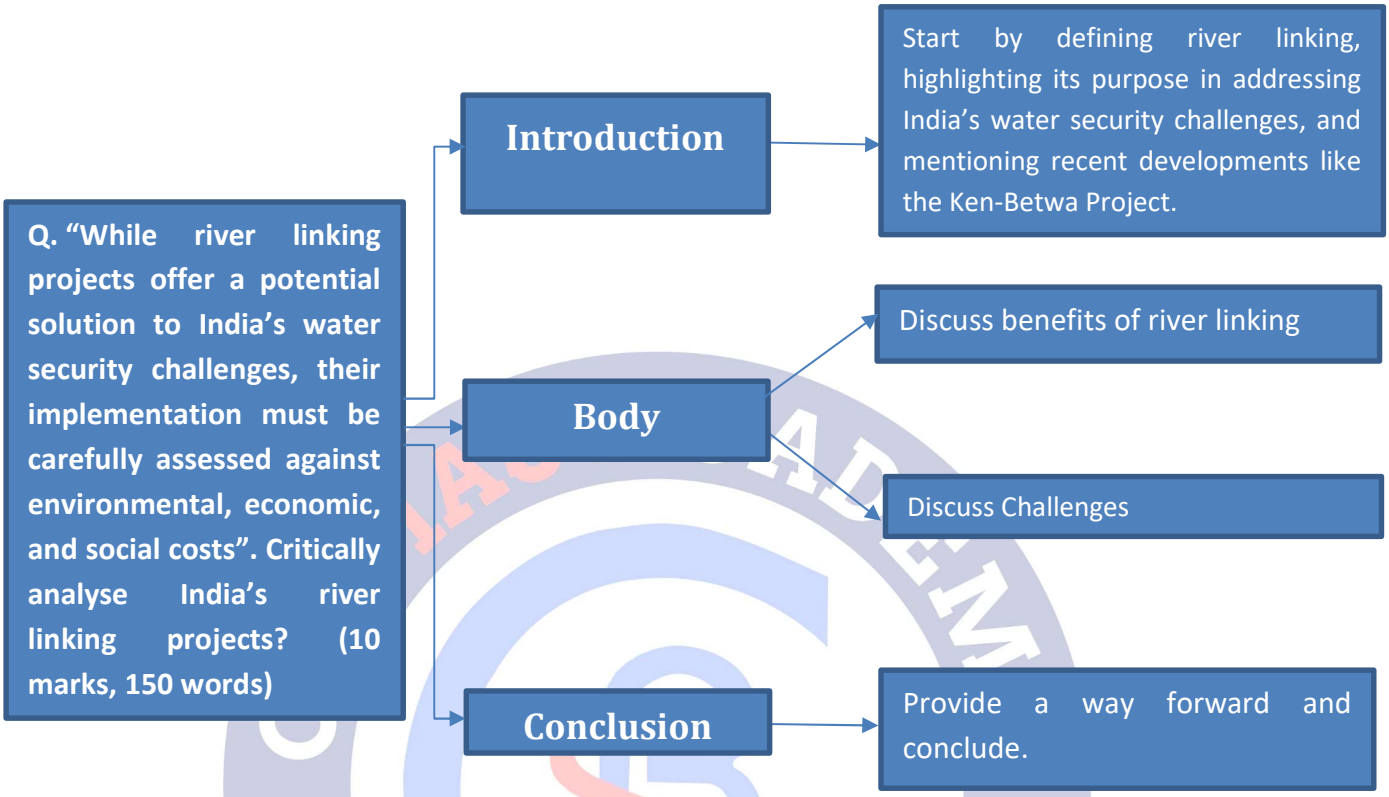
APPROACH



MODEL ANSWER

River linking projects aim to balance water availability by connecting surplus and deficit basins through reservoirs and canals. The National River Linking Project (NRLP) envisions addressing water challenges with components such as the Himalayan and Peninsular links and intra-state interlinking. Projects like Ken-Betwa highlight its potential to alleviate water scarcity.

Benefits of River Linking

1. **Water Security**:
   - Redistributes water to drought-prone regions.
   - Example: Ken-Betwa ensures irrigation for 10.62 lakh hectares and drinking water for 62 lakh people.
2. **Flood and Drought Mitigation**:
   - Reduces flooding in surplus basins and alleviates drought in deficit areas.
   - Example: Sutlej-Yamuna Link Canal aims to divert excess water to dry regions.
3. **Agricultural Growth**:
   - Year-round irrigation enhances productivity and reduces dependence on erratic monsoons.

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- Rainfed areas, which account for 40% of food production, will benefit significantly.

4. **Energy Generation**:
   - Hydropower potential of projects like Ken-Betwa (103 MW) supports clean energy goals.
5. **Economic Growth and Poverty Alleviation**:
   - Boosts socio-economic development through better water availability, improved agriculture, and job creation in rural areas.

Challenges of River Linking

1. **Environmental Degradation**:
   - Loss of biodiversity, submergence of forests, and disruption of ecosystems.
   - Example: Ken-Betwa affects 7.6% of Panna Tiger Reserve, threatening wildlife.
2. **High Economic Costs**:
   - Estimated ₹5.5 lakh crore for the NRLP, with risks of cost overruns.
   - The cost-benefit ratio may not always justify investments.
3. **Social Displacement**:
   - Construction of dams and canals leads to displacement of communities.
   - Example: Ten villages in Chhatarpur district will be displaced by the Ken-Betwa project.
4. **Climatic Variability**:
   - Climate change may alter river flows, potentially turning surplus basins into deficit ones.
5. **Political and Legal Hurdles**:
   - Interstate disputes (e.g., Cauvery water issue) and international conflicts (e.g., with Bangladesh) complicate implementation.

Way Forward

- Enhance water efficiency through micro-irrigation and rainwater harvesting.
- Prioritize ecological conservation and minimize environmental impacts.
- Engage local communities in water management to ensure inclusivity.
- Strengthen interstate and international water-sharing mechanisms.
- Improve data collection and forecasting for effective planning.

While river linking offers transformative potential to address India's water challenges, it requires careful assessment of environmental, economic, and social costs. Combining river linking with sustainable and localized water management practices can ensure a balanced, equitable, and climate-resilient approach to water security.

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4. TROPICAL CYCLONE

iMPACT ANALYSIS

SYLLABUS:

GS 1 > Indian Geography >> Climate

REFERENCE NEWS:

Heavy rainfall under Fengal's influence has disrupted normalcy across Tamil Nadu. Puducherry, one of the worst-affected areas, witnessed its heaviest 24-hour rainfall in 30 years. So far, cyclone Fengal has claimed 19 lives in India and Sri Lanka, with widespread flooding, road blockages, and power outages disrupting life. The remnants of Cyclonic Storm Fengal weakened into a well-marked low-pressure area over North Interior Tamil Nadu, the India Meteorological Department (IMD) reported. The depression is expected to re-emerge over the southeast and adjoining east-central Arabian Sea near the Kerala-Karnataka coastline by December 3.

CHARACTERISTICS OF TROPICAL CYCLONES:

- **Wind Speeds:** Cyclones have sustained wind speeds of at least 62 km/h. Severe cyclones can exceed 119 km/h.
- **Structure:** They typically have a calm eye at the centre surrounded by an intense eyewall with the strongest winds.
- **Rainfall:** Heavy rainfall often causes flooding, especially in coastal areas.
- **Storm Surges:** Rising sea levels due to the cyclone's wind can lead to dangerous coastal flooding.
- **Low-Pressure Center (Eye):** The eye is a calm, cloud-free region at the centre of the cyclone, typically 30-50 km in diameter. It forms due to the descending air in the centre.
- **Eyewall:** Surrounding the eye, the eyewall contains the strongest winds and heaviest rains. It is the most dangerous part of the cyclone.
    - The eyewall of Cyclone *Yasi* (2011) in Australia produced wind speeds exceeding 250 km/h, causing widespread destruction in northern Queensland.
- **Spiral Rain Bands:** These are long, curved bands of clouds and thunderstorms that extend from the centre, bringing intense rainfall and occasional tornadoes.

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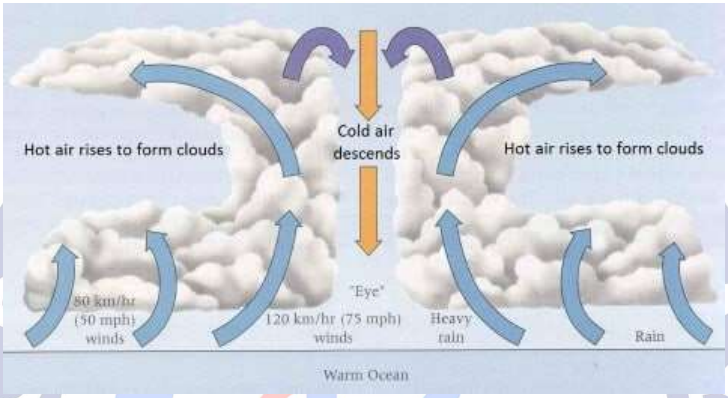
- Cyclone Phailin (2013) in India had well-organized rain bands, resulting in heavy rainfall across Odisha and Andhra Pradesh, with floods in low-lying areas.

- It occurs around 8º-35º North and South of the equator in the region of ITCZ due to the convergence of warm tropical airmasses.
- They have a counter clockwise wind circulation in Northern hemisphere and vice versa in Southern hemisphere.
- The cyclone moves in east to west direction and is elliptical in shape.



ORIGIN CONDITIONS OF TROPICAL CYCLONES:

- **Warm Ocean Waters:** Tropical cyclones require sea surface temperatures above **26-27°C** to initiate and sustain the convection process. Warm waters provide the energy necessary for intense evaporation, fuelling the cyclone
  - Cyclone Fani (2019) in the Bay of Bengal formed during a period of unusually warm waters (~30°C), leading to rapid intensification.
- **Moist Air in the Mid-Troposphere:** High levels of humidity between 5,000-7,000 meters help sustain deep convection and cloud formation. Moist air reduces the cooling of rising air, allowing it to rise further and maintain the cyclone's intensity.
  - The development of Cyclone Idai (2019) over the Mozambique Channel was facilitated by high mid-tropospheric humidity, leading to widespread devastation in Mozambique and Zimbabwe.
- **Low Vertical Wind Shear:** Wind shear refers to the variation in wind speed and direction at different altitudes. Low wind shear (less than 10 m/s) is essential for cyclones as it ensures that the vertical structure remains intact, allowing for a robust and organized system.

- Cyclone Nargis (2008) intensified rapidly due to minimal wind shear, resulting in a devastating impact on Myanmar. Cyclone Vayu had lower impact due to high wind shear.

- **Coriolis Force:** The Coriolis effect, caused by Earth's rotation, provides the necessary spin for cyclonic circulation. It is negligible near the equator but becomes significant at latitudes greater than **5° from the equator**.

    - Tropical cyclones rarely form within 5° of the equator. However, Cyclone Agni (2004) in the Indian Ocean formed near 4°N, an exception attributed to unique atmospheric conditions.

- **Pre-existing Disturbance:** Cyclones often develop from tropical disturbances or low-pressure areas that initiate convection. These systems are often triggered by the **Intertropical Convergence Zone (ITCZ)**, monsoonal troughs, or easterly waves.

    - Cyclone Fengal (2024) originated from a deep depression over the Southwest Bay of Bengal, evolving into a tropical cyclone due to sustained convective activity and favourable atmospheric conditions

- **Atmospheric Instability:** Instability occurs when warm air at the surface rises rapidly and cools at a slower rate than the surrounding air, leading to convective cloud formation.
    - The strong convection leading to Hurricane Katrina (2005) was driven by significant atmospheric instability in the Gulf of Mexico, contributing to its catastrophic impact on the U.S. Gulf Coast.

LIFE CYCLE OF A TROPICAL CYCLONE

- **Formation Stage:** The process begins with a low-pressure area or tropical disturbance, often linked to the Intertropical Convergence Zone (ITCZ), monsoon troughs, or easterly waves. Warm sea surface temperature causes huge transfer of water vapour through the process of evaporation. This causes atmospheric instability leading to formation of **vertical cumulus clouds** associated with convection.
- **Mature Stage:** Intensification of LP centre, due to addition of Latent heat of condensation. The air rises upwards upto tropopause intensifying convection, rising spirally upwards. Huge wall of cumulo nimbus clouds develop in different spiralling bands. Due to increase in Pressure at higher levels some air descends in central part giving rise to rainless cloudless centre EYE.

    - **Fully Developed Cyclone:** At its peak, the cyclone has a distinct eye, strong winds, and heavy rainfall. The system is symmetrical, with a central low-pressure core.

- **Storm Surge and Heavy Rainfall:** Coastal flooding and widespread damage occur due to high winds, torrential rains, and rising sea levels.

- **Dissipation Stage:**
  - **Land Interaction or Cooler Waters:** Once the cyclone moves over land or colder waters, its energy source diminishes, leading to weakening and eventual dissipation.
  - **High Wind Shear:** Increased shear can disrupt the cyclone's structure, accelerating its weakening.

CHALLENGES OF TROPICAL CYCLONES TO THE INDIAN SUBCONTINENT:

Humanitarian Challenges

- **Loss of Life and Displacement:** Cyclones often lead to large-scale evacuations and displacement of people. For instance, **Cyclone Amphan** (2020) displaced over **2.4 million** people in India and Bangladesh.
- **Health Hazards:** Flooding leads to waterborne diseases like cholera, diarrhea, and malaria. Post-Cyclone Phailin (2013), Odisha saw a rise in waterborne illnesses due to contaminated water supplies.

Economic Impact

- **Agricultural Losses:** Cyclones devastate crops, particularly rice, which is heavily cultivated in coastal areas. *Cyclone* Hudhud (2014) caused losses of over **₹21,000 crores** in Andhra Pradesh, with extensive damage to the agriculture and horticulture sectors.
- **Infrastructure Damage:** Roads, bridges, and power lines are often destroyed. Cyclone Tauktae (2021) caused damage worth over **₹15,000 crores** across Gujarat, Maharashtra, and Karnataka, crippling infrastructure and essential services.

Environmental Challenges

- **Coastal Erosion and Ecosystem Damage:** Storm surges and strong winds contribute to coastal erosion and destruction of mangroves, which serve as natural barriers. For example, **Cyclone Yaas** (2021) led to significant coastal erosion in West Bengal and Odisha, damaging the Sundarbans mangrove ecosystem.

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- **Marine Life Disruption:** Cyclones disturb marine ecosystems, affecting fisheries. After Cyclone Gaja (2018), Tamil Nadu's fishing industry suffered major setbacks due to disrupted marine habitats.

Disaster Management Challenges

- **Evacuation and Relief Operations:** The rapid intensification of cyclones leaves limited time for evacuation and relief measures. In 2019, Cyclone Fani intensified from a deep depression to a severe cyclone in just 72 hours, straining disaster management systems.
- **Communication Disruptions:** High winds and floods often disrupt communication networks, making rescue and relief coordination difficult. During Cyclone Vardah (2016), communication lines in Chennai were severely impacted, delaying response efforts.

Climate Change Exacerbation

- **Increased Frequency and Intensity:** Studies indicate that rising sea surface temperatures due to climate change have led to an increase in the frequency and intensity of cyclones in the Bay of Bengal and Arabian Sea. Cyclone Tauktae and Cyclone Yaas in 2021 emerged almost simultaneously, a rare phenomenon linked to warmer ocean temperatures.

MITIGATION OF THE IMPACT:

- **Cyclone Phailin, India (2013) – Effective Evacuation and Early Warning:** Cyclone Phailin was one of the most powerful cyclones to hit the eastern coast of India, but fatalities were significantly lower than previous cyclones.
    - **Early Warning System:** The Indian Meteorological Department (IMD) provided timely and accurate forecasts, giving authorities enough time to act.
    - **Mass Evacuations:** Over **1 million people** were evacuated from vulnerable areas in Odisha and Andhra Pradesh.
    - **Preparedness Drills:** Regular cyclone preparedness drills were conducted before the cyclone season.
    - **Outcome:** Only 44 deaths were reported, a stark contrast to earlier cyclones such as the 1999 Odisha Super Cyclone, which caused over 10,000 deaths.
- **Cyclone Amphan, India and Bangladesh (2020) – International Collaboration:** Cyclone Amphan caused widespread damage across India and Bangladesh, affecting over 13 million people.

- **Cross-Border Coordination:** India and Bangladesh collaborated on early warnings, evacuation efforts, and resource sharing.
- **Cyclone Shelters:** Both countries built thousands of cyclone-resistant shelters, providing safe havens for displaced populations.
- **Technology Use:** Real-time satellite monitoring and digital communication platforms facilitated rapid dissemination of warnings.
- **Outcome:** Despite extensive property damage, human casualties were relatively low (118 reported deaths) compared to past cyclones.

- **Cyclone Preparedness Programme (CPP), Bangladesh:** Bangladesh is highly vulnerable to cyclones, with past events like Cyclone Bhola (1970) resulting in over **300,000** deaths.
  - **CPP Initiative:** Established in 1973, this program involves community volunteers, early warning dissemination, and the establishment of multi-purpose cyclone shelters.
  - **Local Engagement:** Over 76,000 trained volunteers work with local authorities to conduct evacuations and public awareness campaigns.
  - **Outcome:** The CPP significantly reduced cyclone-related fatalities, as seen during Cyclone *Bulbul* (2019), with far fewer deaths than earlier disasters.
- **Hurricane Katrina, USA (2005) – Lessons for Future Preparedness:** Hurricane Katrina was one of the most devastating cyclones in U.S. history, with over 1,800 deaths and $125 billion in damages.
  - **Infrastructure Upgrades:** The U.S. Army Corps of Engineers overhauled the levee system in New Orleans to prevent future storm surges.
  - **Enhanced Early Warning Systems:** The National Hurricane Center (NHC) improved forecasting models and communication systems.
  - **Community Preparedness:** Greater emphasis on evacuation drills and public awareness campaigns.
  - **Outcome:** Subsequent hurricanes, such as Hurricane Ida (2021), saw reduced casualties and faster recovery due to improved systems.
- **Cyclone Winston, Fiji (2016) – Community Resilience:** Cyclone Winston, a Category 5 storm, caused severe damage to Fiji, destroying homes and infrastructure.

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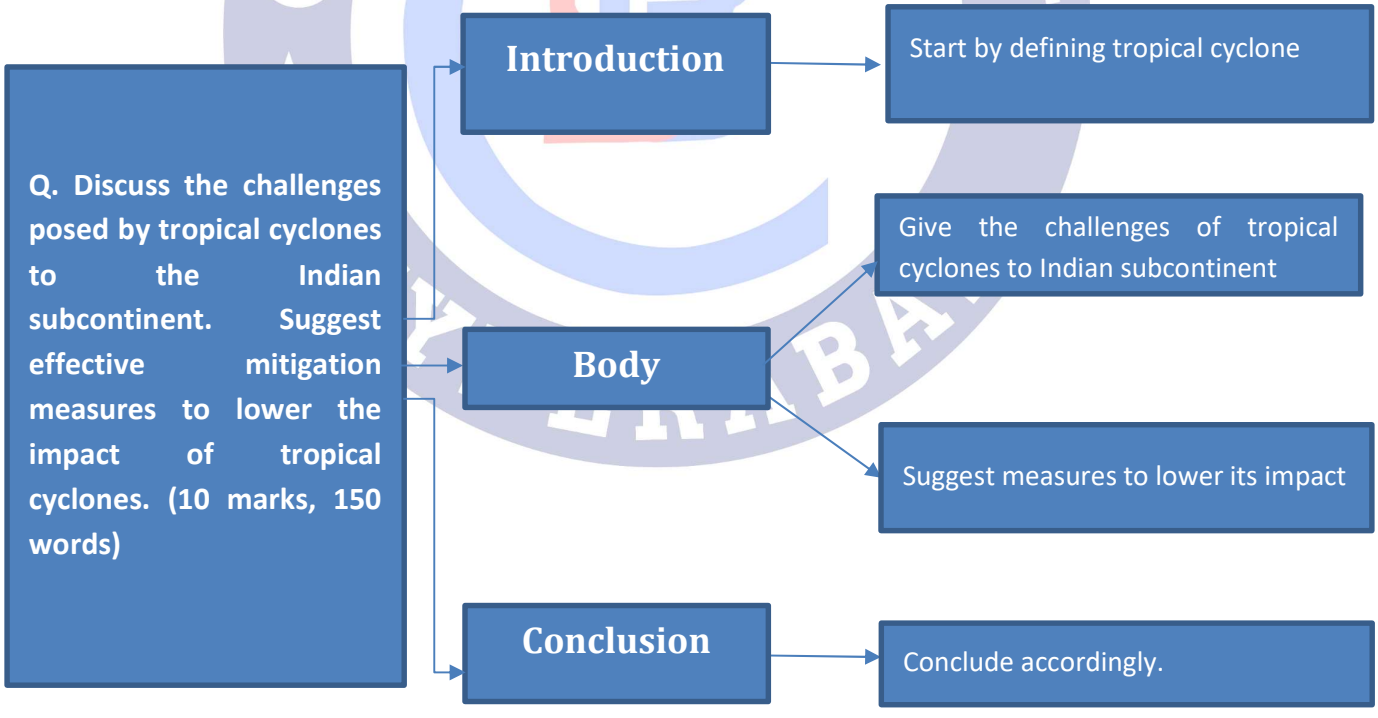
- **Community-Based Disaster Risk Reduction:** Fiji introduced community education programs on cyclone preparedness.
- **Strengthened Building Codes:** New construction standards were enforced to ensure cyclone-resistant structures.
- **Rapid Humanitarian Response:** International aid and local coordination minimized the cyclone's long-term impact.
- **Outcome:** Improved community resilience and faster recovery in subsequent cyclones like Cyclone Harold (2020).

PRACTICE QUESTION

Q. Discuss the challenges posed by tropical cyclones to the Indian subcontinent. Suggest effective mitigation measures to lower the impact of tropical cyclones. (10 marks, 150 words)

APPROACH



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MODEL ANSWER

Tropical cyclones are intense low-pressure systems forming over warm ocean waters. The Indian subcontinent, with its extensive coastline along the **Bay of Bengal** and **Arabian Sea**, is highly vulnerable to cyclones, leading to significant human, economic, and environmental challenges. With cyclone Fengal landfalling in south India, tropical cyclone has again gained significance in the context of disaster management.

CHALLENGES POSED BY TROPICAL CYCLONES:

1. **Humanitarian Challenges:**
    - **Loss of Life and Displacement:** Cyclones like Amphan (2020) displaced over **2.4 million** people in India and Bangladesh.
    - **Health Hazards:** Flooding leads to waterborne diseases. For instance, post-Cyclone Phailin (2013), Odisha reported a surge in diseases like cholera and diarrhea.
2. **Economic Impact:**
    - **Agricultural Losses:** Cyclone Hudhud (2014) caused agricultural losses worth **₹21,000 crores** in Andhra Pradesh, severely affecting rice cultivation.
    - **Infrastructure Damage:** Cyclone Tauktae (2021) damaged essential infrastructure in Gujarat, Maharashtra, and Karnataka, with losses over **₹15,000 crores**.
3. **Environmental Challenges:**
    - **Coastal Erosion:** Cyclones like Yaas (2021) eroded coastal areas in West Bengal and Odisha, impacting the Sundarbans ecosystem.
    - **Marine Life Disruption:** Cyclone Gaja (2018) disrupted fisheries in Tamil Nadu, impacting livelihoods.
4. **Disaster Management Challenges:**
    - **Rapid Intensification:** Cyclone Fani (2019) intensified in just 72 hours, straining evacuation efforts.
    - **Communication Disruptions:** During Cyclone Vardah (2016), Chennai's communication networks were severely affected, delaying relief operations.

TO LOWER THE IMPACT OF TROPICAL CYCLONES:

- **Real-time Forecasting and Alerts:** Using satellites, weather stations, and high-resolution models, countries like India and Bangladesh have been able to predict cyclones' paths and

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intensity with greater accuracy. The **Indian Meteorological Department (IMD)** issues timely warnings, helping to evacuate millions of people ahead of cyclones like Phailin (2013)

- **Community-based Alerts:** Localized warning systems that communicate directly to the community can enhance preparedness. **Bangladesh's Cyclone Preparedness Programme (CPP)**, involving over 76,000 trained volunteers, has significantly reduced fatalities in recent cyclones

- **Resilient Buildings:** Enforcing strict building codes in cyclone-prone areas can reduce structural damage. For example, post-*Cyclone Winston* (2016), **Fiji** implemented stronger construction standards for homes and schools to withstand Category 5 cyclones

- **Coastal Defenses:** Coastal areas should be protected with reinforced sea walls, levees, and storm surge barriers. The **U.S. Army Corps of Engineers** upgraded levee systems in New Orleans after Hurricane Katrina (2005), which reduced future storm surges

- **Mass Evacuations:** Organized evacuation efforts, as seen in **Cyclone Phailin** (2013), where **1 million people** were evacuated from Odisha and Andhra Pradesh, have been highly effective in reducing casualties

- **Rapid Response Teams:** Forming disaster management teams equipped with necessary supplies and trained to handle large-scale evacuations can save lives. The **Indian Navy** and disaster response teams actively participate in evacuations and post-cyclone recovery

- **Restoration of Essential Services:** Rebuilding infrastructure like roads, bridges, and power lines swiftly after the cyclone ensures quick recovery and reduces the long-term economic impacts.

- **Ecosystem Protection:** Protecting natural buffers like mangroves, wetlands, and coral reefs can reduce the force of storm surges. **Cyclone Yaas** (2021) in India highlighted the importance of these ecosystems, as they provide a natural defense against coastal erosion and storm surges

- **Cross-Border Cooperation:** Countries in cyclone-prone regions can improve their resilience by sharing resources, knowledge, and conducting joint evacuation exercises. The response to **Cyclone Amphan** (2020) saw strong collaboration between **India and Bangladesh**, resulting in reduced fatalities despite widespread damage

By implementing early warning systems, strengthening infrastructure, ensuring effective evacuation protocols, and addressing climate change, the Indian subcontinent can enhance its resilience to future cyclones. The case studies of **Cyclone Phailin** and **Cyclone Amphan** offer valuable lessons in reducing human casualties and minimizing economic losses, proving that preparedness and cooperation are key in reducing the destructive power of tropical cyclones.

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GENERAL STUDIES-II

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5. 'NO-DETENTION' POLICY

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social justice > Education

REFERENCE NEWS:

- Recently, the Centre has notified the **Right of Children to Free and Compulsory Education (Amendment) Rules, 2024**, effectively scrapping the **'No-Detention' Policy (NDP)** for Classes 5 and 8.
- Schools can now detain students in these grades if they fail to clear year-end examinations, with an emphasis on **remedial measures** to address learning gaps.
- Over **3,000 schools governed by the central government**, including **Kendriya Vidyalayas, Navodaya Vidyalayas, and Sainik Schools**, will implement the amended Rules.

MORE ON THE NEWS:

- The Centre's decision comes five years after it **amended the Right to Education Act(RTE) in 2019**, allowing the states and the Centre to take a call on detaining students in Classes 5 and 8. Since then, some states have chosen to scrap it.
- Currently, **16 States and two Union Territories** including Delhi, **detain students who fail in Classes 5 or 8**, while the remaining States and U.T.s continue to implement the 'No Detention' policy.
- The amended rules state that students failing year-end exams will **receive additional instruction and a chance to re-take the exam within two months.** If they fail the re-exam, they **will be held back**, with the class teacher and parents guided to **address learning gaps through specialised inputs.**
- The head of the school must monitor the **progress of held-back students** and ensure targeted interventions.
- Exams and re-exams will focus on **competency-based evaluation for holistic development, moving away from rote learning.** The Ministry emphasized prioritizing learning outcomes and special attention for weaker students, aligning with NEP objectives.

NO-DETENTION POLICY:

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- The **No-Detention Policy**, introduced under **Section 16 of the RTE Act, 2009**, stated: *"No child admitted in a school shall be held back in any class or expelled from school till the **completion of elementary education**."(meaning till Class 8.)*
- This provision aimed to ensure that children **aged 6 to 14** could complete their **education up to Class 8** without the fear of failing or being expelled.
- It was designed to **prevent dropouts** by **addressing the stress and demotivation** caused by repeating a grade, often **due to flaws in the education system** rather than the child's abilities.
- To support this, the policy emphasized **Continuous and Comprehensive Evaluation (CCE)** to regularly assess learning outcomes in a holistic and non-threatening manner, eliminating the need for board exams during elementary education.

- The **RTE Act** was amended **in 2019** to replace **Section 16**, which mandated the **No-Detention Policy**, with a provision allowing regular exams for **Classes 5 and 8**. Students failing these exams—and a re-exam within two months—could be held back, with the decision left to states and the Centre.
- The change aimed to address **poor learning outcomes** caused by automatic promotions under the old policy. For instance, in 2023-24, **Delhi scrapped the policy**, **leading to 20% of Class 8 students failing** their exams, raising questions about the policy's effectiveness.
- The rules to implement the amended Act were delayed and passed recently, in **December 2024**, to align them with the **National Curriculum Framework (NCF)**, following the introduction of the **National Education Policy (NEP) 2020**.

ARGUMENTS FOR THE NO-DETENTION POLICY (NDP):

- **Reduction in Dropout Rates**
  - By eliminating the fear of failure, NDP created a supportive environment, ensuring students, particularly from disadvantaged backgrounds, stayed in the education system.
  - For instance, dropout rates for Classes I-VIII reduced significantly from **42.5% in 2009** to **12.6% in 2024** (Source: **Unified District Information System for Education (UDISE)**).
- **Inclusivity for Marginalized Communities**
  - Detention disproportionately impacts vulnerable groups lacking additional resources. NDP promoted equity by allowing all children to progress with their peers.
  - For instance, among marginalized groups like Scheduled Castes (SCs) and Scheduled Tribes (STs), dropout rates were previously **51.2% and 56.8%**, respectively, showing substantial improvement after NDP(Source: **Unified District Information System for Education (UDISE))**.

- **Focus on Holistic Learning**
  - The policy encouraged creativity, reducing reliance on rote learning, and **aligned with the National Education Policy (NEP) 2020's** goal of competency-based education.
  - For instance, NDP introduced **Continuous and Comprehensive Evaluation (CCE)** to assess students' understanding, application, and skills holistically instead of relying on high-stakes exams.
- **Focus on Systemic Issues**:
  - By eliminating the punishment of retention, the policy **shifted the focus to addressing systemic issues** such as teacher quality, curriculum design, and infrastructure deficits **rather than placing the blame solely on students.**
- **Improved Enrollment Trends**
  - The **Gross Enrollment Ratio (GER)** improved across demographics, **including girls and marginalized groups** (Source: Subramanian Committee, 2016).
- **Psychological Well-being of Students**:
  - Holding back students in a grade can have a severe psychological impact, leading to anxiety, loss of self-esteem, and a sense of failure. The NDP aimed to **reduce such stress and provide a nurturing environment** for children to grow.
  - For instance, research in education psychology indicates that children perform better when they are supported rather than penalized for their shortcomings, fostering a more positive attitude towards learning.
- **Improved Peer Learning Opportunities**:
  - Promoting students to the next grade ensures they **remain with their age-appropriate peer group**, encouraging social interaction and collaborative learning. Repeating a grade **may isolate students**, making them feel out of place.

ARGUMENTS AGAINST THE NO-DETENTION POLICY (NDP):

- **Declining Learning Outcomes**
  - Automatic promotion under NDP resulted in students being promoted without sufficient knowledge, leading to poor academic outcomes in higher grades.
  - For example, the **Annual Status of Education Report (ASER) 2023** showed only **25% of students aged 14-18** could fluently read a Class II-level text.
  - Also, **Ministry of Education** data revealed **65 lakh students** failed Classes 10 and 12 in 2023, indicating foundational learning gaps.
- **Misinterpretation of CCE**
  - **Improper implementation of CCE diluted its objectives. Teachers and schools often neglected foundational learning, knowing students would progress regardless of performance.**

- For instance, the **Central Advisory Board of Education (CABE) Subcommittee** (2015) observed that many **schools misunderstood** Continuous and Comprehensive Evaluation (CCE) **as "no assessments,"** leading to low accountability for teachers and students.

- **Low Teacher Accountability and Overburdening**
  - Without sufficient teachers and accountability mechanisms, the policy failed to ensure quality education and effective remediation for weaker students.
  - For example, India faces a shortage of **8.4 lakh teachers**, leaving existing staff overburdened and unable to provide the mandated "special care" for struggling students (Source: Ministry of Education).
- **Negative Impact on Student Motivation**
  - Students, knowing they would be promoted regardless of effort, often disengaged from their studies, resulting in weaker academic foundations.
  - The **CABE Subcommittee Report** noted that NDP conveyed the idea that **"performance doesn't matter,"** leading to a lack of motivation among students.
- **Increased Migration to Private Schools**
  - The policy indirectly undermined public education, as parents sought private schooling for stricter academic standards.
  - For instance, the **CABE Report** highlighted increased migration to private schools, perceived as offering better learning outcomes compared to government schools under NDP.
- **Overcrowded Classrooms**
  - Studies in India have shown that large class sizes adversely affect learning outcomes, especially in government schools**.** Automatic promotions can lead to overcrowded classrooms with students of varying learning levels. This makes it harder for teachers to deliver quality education and cater to individual student needs.
- **Mismatch with Global Practices**
  - Many countries with successful education systems, such as Finland and Singapore, have **stringent evaluation processes** to ensure students meet specific academic standards before promotion. NDP diverged from this approach, potentially compromising global competitiveness.
  - For instance, in **Finland, students are assessed continuously**, and those lagging **receive immediate remedial attention** rather than automatic promotion.
- **Negative Impact on Future Employability**
  - **Poor foundational learning** due to automatic promotions can have long-term repercussions, such as unemployability or difficulty in acquiring higher-level skills.

- For instance, a World Bank report (2022) emphasized the correlation between foundational literacy and employment outcomes in developing countries, stressing the importance of robust early education.

WAY FORWARD

- **Customized Implementation of the NDP**: Limiting the No-Detention Policy to Class 5, as suggested by the Subramanian Committee (2016), can balance inclusivity with accountability. For Classes 6-8, flexible detention policies with strong remedial support should be implemented. This ensures a solid foundational understanding in early grades while maintaining accountability in higher elementary levels.
- **Strengthening Continuous and Comprehensive Evaluation (CCE)**: Revamping CCE to focus on competency-based assessments, as emphasized in the National Education Policy (NEP) 2020, is crucial. Providing intensive teacher training to implement this effectively can ensure that the objectives of CCE are met and the misinterpretation of "no assessments" is avoided.
- **Addressing Teacher Shortages**: Recruiting the required 8.4 lakh teachers in government schools is essential to reduce the burden on current staff. Incentivizing teacher accountability through performance-linked rewards and periodic evaluations can further improve the quality of education and remediation efforts.
- **Introducing Remedial Mechanisms for Weak Students**: Structured remedial programs should be established in schools to address learning gaps identified during assessments. These can include specialized tutors, learning aids, and after-school programs, ensuring that struggling students receive targeted support to improve their performance.
- **Focusing on Inclusive Education**: Interventions for marginalized groups, such as SCs, STs, and girls, must be prioritized to maintain the equity achieved under the NDP. Providing financial and logistical support to these groups will minimize the adverse effects of detention policies, ensuring that inclusivity remains central to educational reforms.
- **Improving Classroom Infrastructure**: Addressing overcrowded classrooms through better infrastructure in government schools and integrating technology-driven solutions like e-learning platforms will enable teachers to manage diverse learning levels effectively. Smaller class sizes and digital tools can enhance personalized teaching.
- **Incorporating Global Best Practices**: Drawing lessons from successful education systems like Finland and Singapore, where competency-based evaluations and immediate remedial actions are emphasized, can improve learning outcomes. Creating support systems, including counselors, will also monitor students' psychological and academic well-being.
- **Monitoring and Evaluating Reforms**: Establishing an independent Education Monitoring Agency to periodically evaluate the outcomes of detention policies and CCE is essential.

Conducting pilot studies before nationwide implementation will ensure evidence-based policymaking and allow for necessary adjustments.

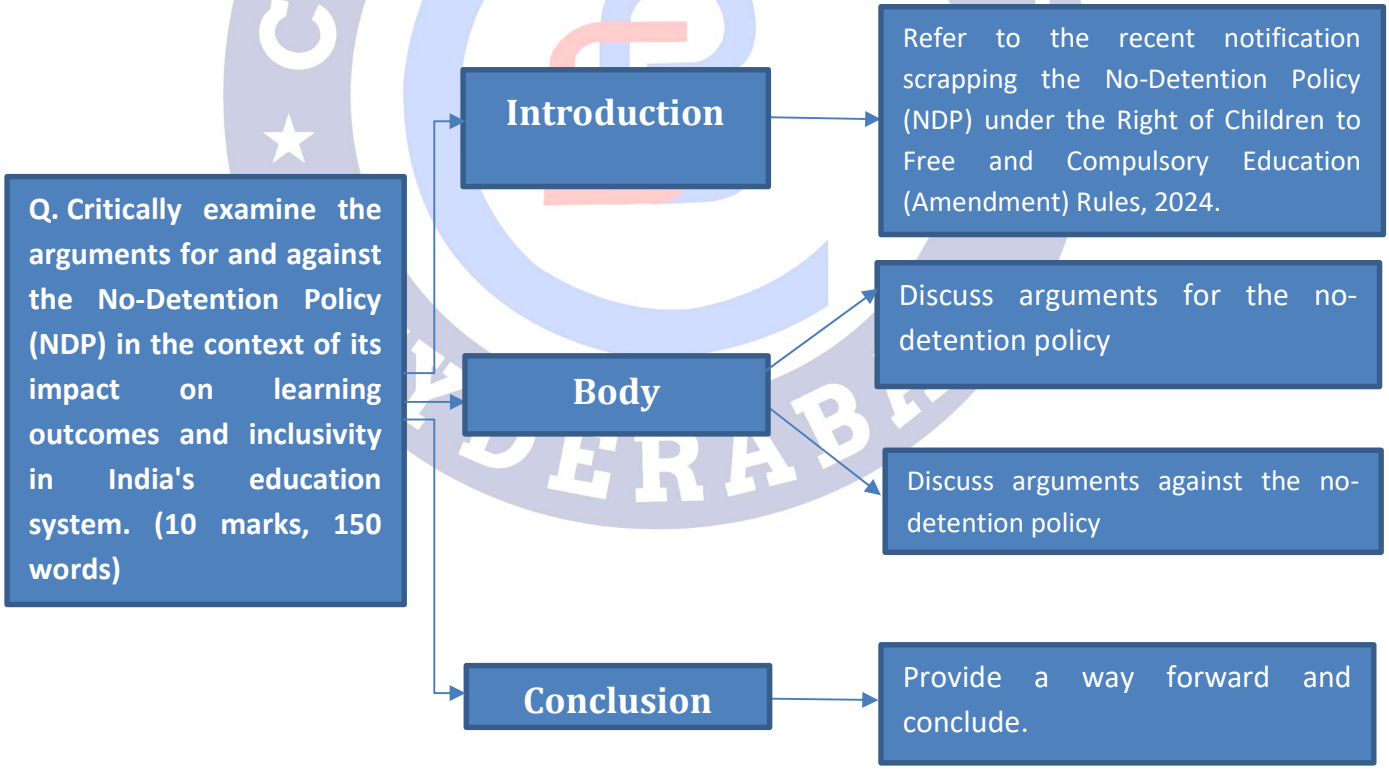
CONCLUSION

The scrapping of the No-Detention Policy aims to address declining learning outcomes but could risk reversing the inclusivity gains achieved under the RTE Act. A balanced approach that combines targeted support, robust teacher training, and competency-based assessments is necessary to ensure an education system that maintains equity while enhancing academic standards. The ultimate goal should be a learning environment where **every child progresses meaningfully and no one is left behind.**

PRACTICE QUESTION

Q. Critically examine the arguments for and against the No-Detention Policy (NDP) in the context of its impact on learning outcomes and inclusivity in India's education system. (10 marks, 150 words)

APPROACH



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MODEL ANSWER

The Recently, the Centre notified the **Right of Children to Free and Compulsory Education (Amendment) Rules, 2024,** effectively **scrapping the No-Detention Policy (NDP) for Classes 5 and 8.** Under the amended rules, students failing year-end exams will receive additional instruction and a re-exam opportunity within two months, failing which they may be detained. This move is seen as a response to concerns over declining learning outcomes caused by automatic promotions under the earlier NDP, while aiming to retain inclusivity and equity in education

Arguments For the No-Detention Policy

1. **Reduction in Dropout Rates**: NDP reduced dropout rates from **42.5% in 2009 to 12.6% in 2024** (Source: UDISE), ensuring retention among disadvantaged groups.

2. **Inclusivity for Marginalized Groups:** Dropout rates among Scheduled Castes (SCs) and Scheduled Tribes (STs) decreased significantly from **51.2% and 56.8%**, respectively (Source: UDISE). Promoted equitable educational opportunities, particularly for vulnerable populations.

3. **Focus on Holistic Learning**: Continuous and Comprehensive Evaluation (CCE) promoted holistic assessments over rote learning, aligning with **NEP 2020**'s competency-based approach.

4. **Psychological Benefits**: Avoiding grade repetition reduced anxiety and boosted self-esteem among students, fostering a more supportive learning environment.

5. **Systemic Focus**: By eliminating retention, the policy redirected attention to systemic issues such as **teacher training**, infrastructure improvements, and curriculum reforms.

Arguments Against the No-Detention Policy

1. **Declining Learning Outcomes**: ASER 2023 revealed only **25% of students aged 14-18** could read a Class II-level text, indicating weak academic foundations. In 2023, **65 lakh students failed Classes 10 and 12**, highlighting the gaps in foundational learning.

2. **Misinterpretation of CCE**: Schools often treated CCE as "no assessments," diluting its objectives (Source: CABE Subcommittee, 2015). This led to reduced accountability for teachers and a lack of focus on learning outcomes.

3. **Low Motivation Among Students**: Automatic promotions conveyed the idea that performance didn't matter, leading to disengagement from studies and a lack of effort.

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4. **Teacher Shortages**: India faces a shortage of **8.4 lakh teachers** (Source: Ministry of Education), leaving educators overburdened and unable to address learning gaps.
5. **Mismatch with Global Standards**: Successful systems like those in Finland and Singapore emphasize strict assessments with remedial support, which NDP failed to align with, compromising global competitiveness.

Way Forward

- **Customized Detention Policies**: Implement limited detention for Classes 6-8 with robust remedial programs, while retaining NDP for lower classes to ensure foundational learning.
- **Strengthen Teacher Accountability**: Address teacher shortages and provide performance-based incentives to improve instructional quality and individual student attention.
- **Revamp CCE Framework**: Ensure proper implementation of competency-based assessments, supported by teacher training and digital tools to enhance evaluations.
- **Targeted Support for Marginalized Groups**: Provide financial and logistical aid to SCs, STs, and other disadvantaged groups to minimize adverse impacts of detention policies.

The **No-Detention Policy** aimed to foster inclusivity and reduce dropout rates but fell short in addressing critical learning outcomes due to poor implementation. The scrapping of the policy provides an opportunity to balance equity with accountability. A hybrid approach that combines competency-based assessments, remedial measures, and teacher training can ensure an education system where academic standards and inclusivity coexist harmoniously.

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

iMPACT ANALYSIS

SYLLABUS:

GS 2> Polity > Election > Electoral reforms

REFERENCE NEWS:

- Recently, Lok Sabha Speaker referred the **Constitution (One Hundred and Twenty-Ninth Amendment) Bill, 2024, and The Union Territories Laws (Amendment) Bill, 2024,** to a 39-member Joint Parliamentary Committee (JPC).
- These bills aim to implement **One Nation, One Election (ONOE)**, proposing simultaneous elections for the Lok Sabha and state assemblies.
- The committee will scrutinise the bills and send its recommendations to the Lok Sabha Speaker.

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

PROVISIONS OF THE TWO BILLS:

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

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

Key Provisions:

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

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- **Amendments to Existing Articles**:
  - **Article 83**: Specifies that if the Lok Sabha is dissolved early, the **next Lok Sabha will only serve the remaining term** of the dissolved House.
  - **Article 172**: Mirrors Article 83 but applies to **state Assemblies**.
  - **Article 372**: Grants Parliament the authority to legislate on simultaneous elections.
- **Term Adjustment**:
  - Provisions to shorten or extend terms of Assemblies and the Lok Sabha to synchronize their election cycles.

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

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

Key Provisions:

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

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

WHAT IS MEANT BY SIMULTANEOUS ELECTIONS?

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

As of now, the bill proposes simultaneous elections for the Lok Sabha and state Assemblies, **excluding local bodies** such as municipal corporations and panchayats. The earliest these changes could take shape is by the **2034 election cycle**, assuming full five-year terms for both the 18th and 19th Lok Sabhas, beginning with the first sitting in **2029**.

BACKGROUND:

- Simultaneous elections are **not a novel concept in India.** The **elections in 1952, 1957, and 1962 were held simultaneously.** However, the cycle was first broken in 1959 after the

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Centre invoked Article 356 (failure of constitutional machinery) to dismiss the then-Kerala government.

- Subsequently, due to defections and counter-defections between parties, several legislative assemblies were dissolved post-1960, which eventually led to separate polls for the Lok Sabha and state assemblies.
- Currently, the assembly polls in the states of Arunachal Pradesh, Sikkim, Andhra Pradesh, and Odisha are held together with the Lok Sabha elections.
- The proposal to revert to ONOE was **initially introduced in 1983 by the Election Commission and later by the Law Commission in its 1999 Report**.
- However, the **pace started picking up after its mention in the BJP manifesto** for the 2014 Lok Sabha polls.
- In 2023, a **high-level committee chaired by former President Ram Nath Kovind** was constituted to explore the feasibility of ONOE.
- The Union Cabinet accepted the committee's recommendations and introduced **two bills in Parliament in December 2024** to facilitate the implementation of simultaneous elections.

NEED FOR SIMULTANEOUS ELECTION (ONE NATION ONE ELECTION)

- **Indian polity is perennially in an election mode:**
  - Barring a few years within a normal 5-year tenure of the Lok Sabha, the country witnesses, on an average, **elections to about 5-7 State Assemblies every year.**
- **Promote good governance**:
  - As elections are frequent, parties and governments are always in campaign mode. If simultaneous elections are held, it will **give a clear five years to the political parties to focus on governance.**
- **Promote developmental work**:
  - The **model code of conduct** curtails some powers of an incumbent government during elections, resulting in delays in implementing welfare schemes which are already underway. A single election can **restrict this delay to once every five years.**
- **Reduce election expenditure:**
  - Frequent elections **lead to massive expenditures by political parties and other stakeholders**. Simultaneous elections offers an opportunity to optimize the expenses.
  - Further, when elections are held independently, entire expenditure on actual conduct of elections to Lok Sabha and state legislatures is borne by Government of India and respective State Governments respectively.

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- If concurrent election to Lok Sabha and State Legislative Assembly is held, then the **expenditure can be shared between Central and respective State Governments.**

- **Better manpower management:**
  - Frequent elections lead to a **lock-in of CAPF and state police forces for prolonged periods**. This takes away a portion of the force which could otherwise be better deployed for other internal security purposes. Synchronised polls will **reduce the frequency of diversion of forces from their normal duties.**
- **Invisible and incalculable socio-economic costs:**
  - Due to election duties, each election also means **teachers missing from schools and colleges**, the entire revenue machinery on election-related work, officers and vehicles put to use on elections
- **Break Politics-corruption nexus**:
  - As elections happen frequently, **political parties are constantly looking for the inflow of funds.** This is considered as one of the **key drivers for corruption and black-money** in the country. Simultaneous elections could open up possibilities to address the above systemic problems.
- **Break the perpetual cycle of social evils**:
  - Elections are polarizing events which have accentuated casteism, communalism, corruption and crony capitalism. **If the country is perpetually on election mode, there is no respite from these evils**.
- **Reduce disruption of public life:**
  - Frequent elections lead to disruption of normal public life and impact the functioning of essential services. **Eg: Holding of political rallies disrupts road traffic** and also leads to **noise pollution.**
  - If simultaneous elections are held, this period of disruption would be limited to a certain pre-determined period of time.
- **Promote competitive populism:**
  - Given the desperation of parties to win elections, **there is a tendency to squander resources on short-term, unproductive freebies at the cost of infrastructure, quality education** and healthcare. This can be reduced to a great extend through simultaneous elections.

CHALLENGES TO IMPLEMENTATION:

- **Synchronizing elections:**
  - The terms of a large number of state assemblies **will have to be curtailed/extended for synchronisation of the state elections** with that to the Lok Sabha.

- Synchronizing the election calendar in any given state with that of the Centre **would deprive a state of one of the essential elements of Westminster democracy** - A government may choose to dissolve itself, or **a government may fall if it loses its majority.**

- **Legislative changes:**
  - Such a change requires a major overhaul of the existing legislations like the Constitution, the Representation of the People's Act 1951 and the Rules of Procedure of Lok Sabha and State Assemblies.
- **Attaining consensus:**
  - To create a **workable framework, support and consensus from opposition parties, state governments, regional parties** and pressure groups is needed. This would be challenging, given the wide diversity of Indian politics.
- **Inadequate manpower:**
  - There is a **dearth of security and administrative officials to conduct simultaneous free and fair elections** throughout the country in one go.
  - **For example,** according to a report issued by Common Cause in 2019, the **Indian police force is at only 77% of its sanctioned strength.**
- **Operational challenges:**
  - Incremental requirement of EVMs and personnel is likely to pose a big challenge to the operational feasibility of simultaneous elections.

CONCERNS OVER SIMULTANEOUS ELECTIONS:

- **Against federalism:**
  - Clubbing elections amounts to **diluting federal system in favor of centralization.**
  - This **leads to homogenization of the country**, instead of bringing equity, sustaining plurality, and promoting local and regional leadership.
- **Erosion of accountability:**
  - Having to **face electorate more than once every 5 year** enhances the accountability of politicians and parties. It often forces governments to reconsider their plans and policies after each election. **But simultaneous election would give governments immunity from public scrutiny.**
- **Impact on voter behaviour:**
  - Not all voters are highly educated to know who to vote for. **There is a high chance that the voter will vote for the same party** for both the state and centre.
- **Sidelines regional parties and issues:**
  - In simultaneous elections, **the national narrative submerges the regional story,** which **pushes smaller parties, local issues and the concerns of marginalized communities to the sidelines.**

- **Diversity of India:**
  - The Law Commission's recommendations of simultaneous elections specifically **drew from countries like Sweden, Belgium and South Africa.** Unlike India, they are relatively small, less diverse nations and the electoral systems are based on proportional representation. Hence, the applicability of such models in India are questionable.
- **No effect on individual election expenses:**
  - Simultaneous elections cannot bring down the expenses of the candidates. **Practical experience shows that candidates would be spending the same amount** by adopting innovative methods.

WAY FORWARD:

- **Constitutional and Legal Framework**: Revise the Constitution and other pertinent laws carefully to accommodate the changes necessary for simultaneous elections. This includes adjusting terms of legislative bodies initially and establishing mechanisms to deal with early dissolutions or extensions.
- **Build Consensus**: Engage in wide-ranging consultations with political parties, state governments, civil society, and the public to build consensus. The success of such a fundamental change depends on its acceptance across the political spectrum and among the citizenry.
- **Strengthening Electoral Infrastructure**: Invest in and upgrade the electoral infrastructure to handle the logistical demands of simultaneous elections. This includes ensuring a sufficient number of Electronic Voting Machines (EVMs), training personnel, and enhancing the capabilities of the Election Commission and its state counterparts.
- **Pilot Projects**: Before a nationwide implementation, conduct pilot projects in selected regions to identify practical challenges and assess the impact on voter behavior, administrative efficiency, and cost-effectiveness. This step would provide valuable insights and data to guide full-scale implementation.
- **Safeguards for Democracy and Federalism**: Implement safeguards to protect the federal structure and democratic principles. This includes measures to ensure that local issues and regional parties are not sidelined and that governments remain accountable throughout their terms.
- **Voter Education**: Launch comprehensive voter education campaigns to inform and educate the electorate about the changes, emphasizing the importance of voting in both local and national contexts. This would help mitigate the risk of voter fatigue or confusion.
- **Legal and Administrative Mechanisms for Exceptions**: Develop clear legal and administrative mechanisms to deal with exceptions, such as the dissolution of legislative

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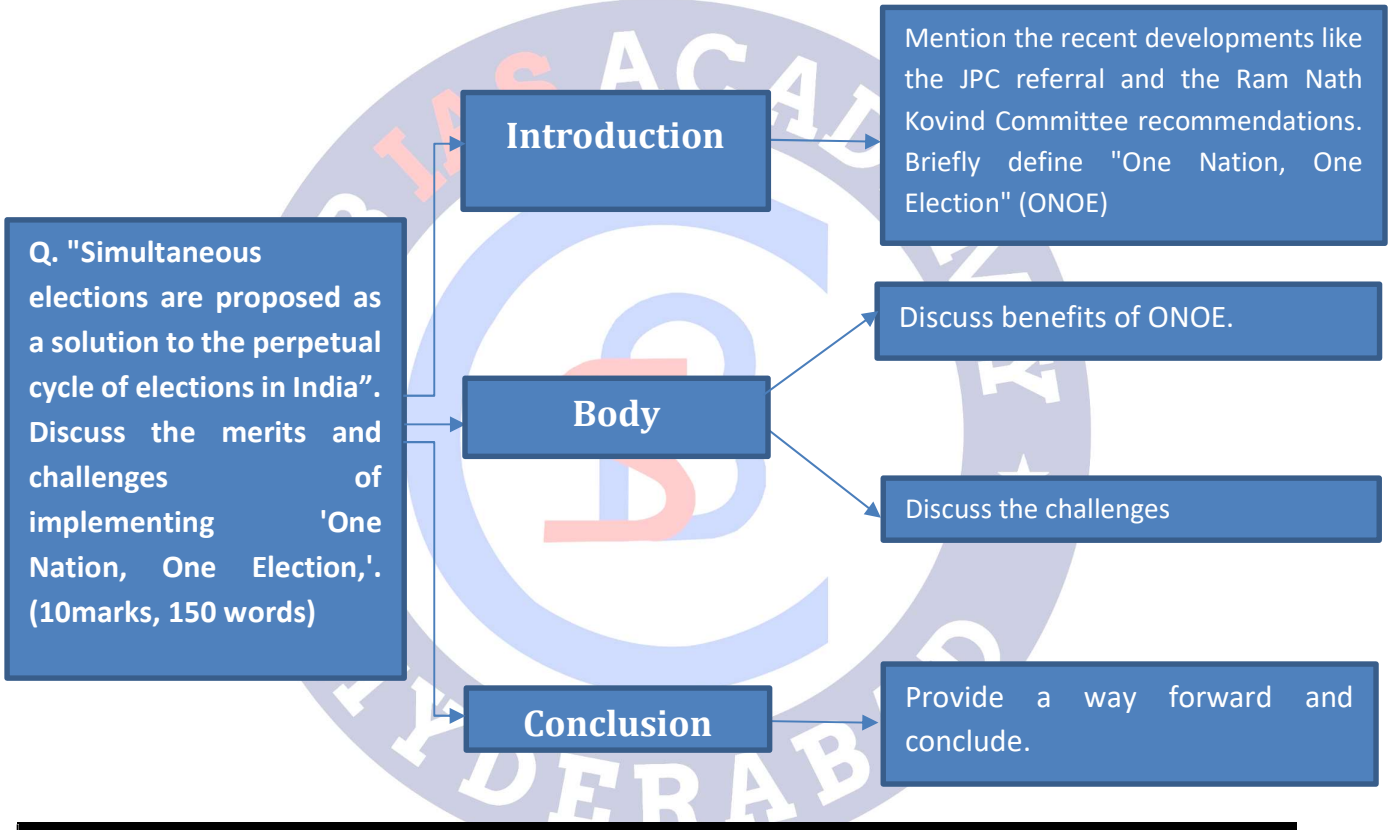
bodies due to a no-confidence motion or other reasons. This ensures that the democratic process remains uninterrupted and flexible.

PRACTICE QUESTION

Q. "Simultaneous elections are proposed as a solution to the perpetual cycle of elections in India". Discuss the merits and challenges of implementing 'One Nation, One Election,'. (10 marks, 150 words)

APPROACH



MODEL ANSWER

The proposal for Simultaneous Elections, often termed "One Nation, One Election" (ONOE), has gained momentum with the introduction of the Constitution (One Hundred and Twenty-Ninth Amendment) Bill, 2024, and the Union Territories Laws (Amendment) Bill, 2024. These bills, referred to a Joint Parliamentary Committee (JPC), aim to synchronize the Lok Sabha and state legislative assembly elections, as recommended by the High-Level Committee chaired by former President Ram Nath Kovind. The committee submitted its report in March 2024, highlighting the feasibility and benefits of implementing ONOE.

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Merits of Simultaneous Elections:

1. **Enhanced Governance**: Frequent elections keep governments in a constant campaign mode, diverting focus from policymaking. ONOE would provide political parties a stable five-year period to concentrate on governance and developmental work.
2. **Reduction in Election Expenditure**: Conducting simultaneous elections reduces financial burdens on the exchequer as costs for logistics, security, and administrative arrangements are shared between the Centre and states.
3. **Minimized Socio-Economic Disruptions**: Elections often disrupt essential services like education, transportation, and public administration. A synchronized electoral schedule would limit these disruptions to a fixed period.
4. **Better Security Management**: With elections occurring simultaneously, the deployment of security forces such as CAPFs can be optimized, ensuring better management of law and order during the polls.
5. **Breaking the Election-Corruption Nexus**: Reducing the frequency of elections curtails the constant demand for funds by political parties, potentially addressing issues of black money and corruption in the electoral process.

Challenges in Implementation

1. **Synchronization Issues**: Aligning the terms of multiple state assemblies with the Lok Sabha involves curtailing or extending terms, which undermines the federal principle of autonomy for states.
2. **Erosion of Federalism**: Clubbing elections risks diluting India's federal character by centralizing political narratives, often overshadowing regional concerns and local leadership.
3. **Operational and Logistical Constraints**: Simultaneous elections require extensive resources, such as additional Electronic Voting Machines (EVMs), trained personnel, and efficient electoral infrastructure, which could be challenging to mobilize.
4. **Voter Behavior and Regional Issues**: Simultaneous polls may confuse voters, leading them to vote for the same party at both state and national levels, undermining regional parties and local issues.
5. **Constitutional and Legislative Hurdles**: Major amendments to the Constitution, the Representation of the People Act, 1951, and rules of procedure for legislatures are required. This demands broad political consensus, which may be difficult to achieve.

Way Forward:

- **Pilot Projects:** Start with a few states to test and troubleshoot ONOE before a full rollout.

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- **Upgrade Infrastructure:** Improve EVM availability, staff training, and logistics for smooth execution.
- **Protect Federalism:** Ensure regional voices aren't overshadowed and governments stay accountable.
- **Build Consensus:** Work with all stakeholders to address concerns and find common ground.
- **Voter Awareness:** Educate citizens about ONOE to make informed choices and avoid confusion.

While "One Nation, One Election" promises substantial benefits, its implementation poses significant constitutional, logistical, and political challenges. A phased, consensus-driven approach, underpinned by robust safeguards for federalism and voter rights, is crucial for its successful realization.

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7. PLACES OF WORSHIP ACT OF 1991

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity

REFERENCE NEWS:

- The recent disputes involving the Shahi Jama Masjid in Sambhal and the Ajmer Sharif Dargah have reignited discussions about the Places of Worship Act, 1991.

MORE ON NEWS:

- The Places of Worship Act, 1991, was enacted to **preserve the religious status** of places of worship **as they stood on August 15, 1947**, thereby **prohibiting any conversion of these sites.**
- However, in May 2022, then Chief Justice of India **D.Y. Chandrachud** observed that while the **Act prohibits changing the religious character** of a place of worship, it **does not bar inquiries into the status of a site** as it existed on the specified date. This interpretation has led to legal debates and has been perceived by some as opening avenues for disputes that the Act intended to prevent.

Sambhal Mosque Dispute: In Sambhal, Uttar Pradesh, a court-ordered survey of the Shahi Jama Masjid—alleged to be built over a Hindu temple—led to violent clashes and four deaths. The petition claimed the mosque was constructed after demolishing a temple, raising concerns about the enforcement of the Places of Worship Act in preventing communal tensions.
Ajmer Sharif Dargah Controversy: In Ajmer, Rajasthan, a local court accepted a petition alleging that the Ajmer Sharif Dargah, a revered Sufi shrine, was originally a Shiva temple. Notices issued to the dargah committee and authorities have sparked criticism for potentially violating the Places of Worship Act and threatening communal harmony.

BACKGROUND OF THE PLACES OF WORSHIP ACT, 1991:

Purpose of Enactment:

- The Act was introduced to uphold the religious character of places of worship as they existed on August 15, 1947, to prevent communal discord.
- It sought to freeze the status quo of all religious sites, barring key exemptions.
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Context of Introduction:

- Legislated against the **backdrop of the Babri Masjid-Ram Janmabhoomi dispute**, which intensified communal tensions.
- Parliament aimed to prevent similar disputes by establishing a legal cutoff date for the status of religious sites.

Key Provisions of the Act:

- **Section 3**:
  - Prohibits the conversion of a place of worship or any part thereof from one religious denomination to another.
  - Prevents even partial alterations to the religious character of a site.
- **Section 4**:
  - **Section 4(1)**: Mandates that the religious character of a place of worship as it existed on August 15, 1947, shall remain unchanged.
  - **Section 4(2)**: Declares that any **on-going legal proceedings** concerning the conversion of a place of worship's religious character as it existed on August 15, 1947, **will be terminated upon the Act's enforcement**. Additionally, it **prohibits the initiation of new cases** challenging the religious character of such places after the commencement of the Act.
- **Section 6**:
  - Prescribes penalties of up to three years imprisonment along with fines for violations of the Act.
- **Exemptions Under the Act (Section 5)**:
  - **Exempts the disputed Ayodhya site**, allowing the trial to proceed as it was already under judicial scrutiny when the Act was enacted.
  - Excludes ancient and historical monuments or archaeological sites covered under the **Ancient Monuments and Archaeological Sites and Remains Act, 1958**.
  - It also excludes cases that have already been settled or resolved and disputes that have been resolved by mutual agreement or conversions that occurred before the Act came into effect.

SIGNIFICANCE OF THE PLACES OF WORSHIP ACT, 1991:

- **Freezing the Religious Status of Places of Worship:**
  - The primary aim of the Act is to maintain the status quo of all places of worship as they existed on August 15, 1947.

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- **Section 3** explicitly bans the conversion of any place of worship or part thereof into one of a different religious denomination or a different segment of the same denomination, ensuring historical continuity.

- **Imposing Obligations on the State:**
  - The Act places a **positive obligation** on the state to protect the religious character of all places of worship as they stood at Independence.
  - This obligation reflects the state's duty to uphold **equality of all faiths** and promote secularism, a **basic feature of the Indian Constitution.**
- **Preventing Communal Conflicts:**
  - By freezing the religious status of sites, the Act aims to curb communal tensions and avoid disputes over historical grievances.
  - It empowers the state to restrict attempts by radical elements to reclaim or alter religious places, thus fostering long-term communal harmony.
- **Providing Legal Certainty:**
  - The Act provides a robust legal framework to prevent the conversion of religious sites, ensuring consistency in the treatment of such disputes.
  - **Section 4** declares that all pending legal proceedings related to the conversion of places of worship as of August 15, 1947, will abate upon the enforcement of the Act. No new legal proceedings can be initiated thereafter, **reducing the burden on the judiciary.**
- **Prescribing Penalties:**
  - **Section 6** prescribes penalties for contravening the provisions of the Act, including up to three years of imprisonment and fines. This serves as a deterrent against attempts to alter the religious character of places of worship.
- **Promoting Communal Harmony:**
  - The Act prevents politically or communally motivated attempts to revisit historical grievances regarding religious sites.
  - By preserving the religious character of sites, it seeks to build trust among diverse religious communities, promoting interfaith harmony.
- **Ensuring Stability in Social and Political Spheres:**
  - By addressing **historical grievances legislatively**, the Act reduces the potential for communal polarization during elections or other politically sensitive times.
  - It **prevents the politicization of religious sites**, contributing to societal stability.

ARGUMENTS AGAINST OR CONCERNS ASSOCIATED WITH THE PLACES OF WORSHIP ACT, 1991:

- **Perpetuation of Historical Injustices:**
  - Critics argue that the Act ignores historical grievances where places of worship may have been forcibly converted or altered prior to August 15, 1947.

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- It prevents communities from **seeking legal remedies for past wrongs**, potentially leaving unresolved historical disputes.

- **Arbitrary Cut-off Date:**
  - The selection of August 15, 1947, as the cut-off date is criticized **for arbitrarily preserving the status quo determined during colonial rule.**
  - It ignores the possibility that injustices regarding religious sites may have occurred before this date, leaving such issues unresolved.
- **Alleged Violation of Fundamental Rights:**
  - Critics argue that the Act infringes on several constitutional rights, including:
    - **Article 25**: Right to freely practice, profess, and propagate religion.
    - **Article 26**: Right to manage, maintain, and administer places of worship and pilgrimage.
    - **Article 29**: Right to conserve culture and traditions.
- **Against the Principles of Secularism:**
  - The Act's prohibition on legal claims to alter the status of religious places is seen by some as **contrary to secularism**, which should allow the **fair adjudication of disputes through courts.**
  - It is argued that freezing the **status quo privileges certain outcomes of historical events over others**, which could be inconsistent with true secularism.
- **Restriction on Judicial Review:**
  - The **abatement of on-going cases and prohibition of new suits** is seen as a restriction on judicial review, a key feature of the Constitution.
  - Critics contend that the judiciary should have the ability to hear and adjudicate disputes over religious places, particularly those involving historical wrongs.
- **Legislative Competence:**
  - Questions have been raised about whether the Union Parliament had the authority to legislate on matters related to **places of pilgrimage and burial grounds**, which fall under the **State List** in the Constitution. This has led to debates about the Act's constitutionality and its encroachment on the federal structure.
- **Ineffectiveness in Preventing Tensions:**
  - Despite its intent, the Act has not entirely prevented communal disputes, as seen in cases like Sambhal and Ajmer Sharif, where legal and social tensions have escalated over historical claims.
- **Potential for Politicization:**
  - The Act's enforcement and **exemptions, such as the Ayodhya site**, have led to allegations of **selective application and political misuse**, undermining its credibility as a neutral legal framework.
  -

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WAY FORWARD

- **Balanced Approach to Historical Grievances**:
  - Acknowledge historical grievances through non-litigious means such as mediation or dialogue to foster mutual understanding and reconciliation between communities.
  - Create commissions or panels to address unresolved disputes without altering the religious status of places of worship.
- **Strengthening Legal Clarity**:
  - Amend the Act to address ambiguities, such as what constitutes "conversion" or "alteration" of a place of worship's religious character.
  - Provide clear guidelines for judicial interpretation to prevent loopholes and inconsistent rulings.
- **Public Awareness and Community Engagement**:
  - Promote awareness about the Act's objectives to foster communal harmony and reduce misinformation.
  - Involve religious and community leaders in creating awareness campaigns to build trust and prevent politically motivated conflicts.
- **Judicial Review and Safeguards**:
  - Allow limited judicial review in specific cases to ensure that grievances do not fester, while safeguarding the spirit of the Act.
  - Strengthen the judiciary's role in upholding the Act while maintaining constitutional balance.
- **Depoliticization of Religious Issues**:
  - Ensure that the Act is enforced impartially, free from political interference or majoritarian bias.
  - Implement strict penalties for misuse of religious disputes to incite violence or electoral gains.

- **Promoting Secular Education**:
  - Integrate lessons on secularism and interfaith harmony into educational curricula to foster tolerance and coexistence from a young age.
  - Highlight the role of legislation like the Places of Worship Act in maintaining social stability.

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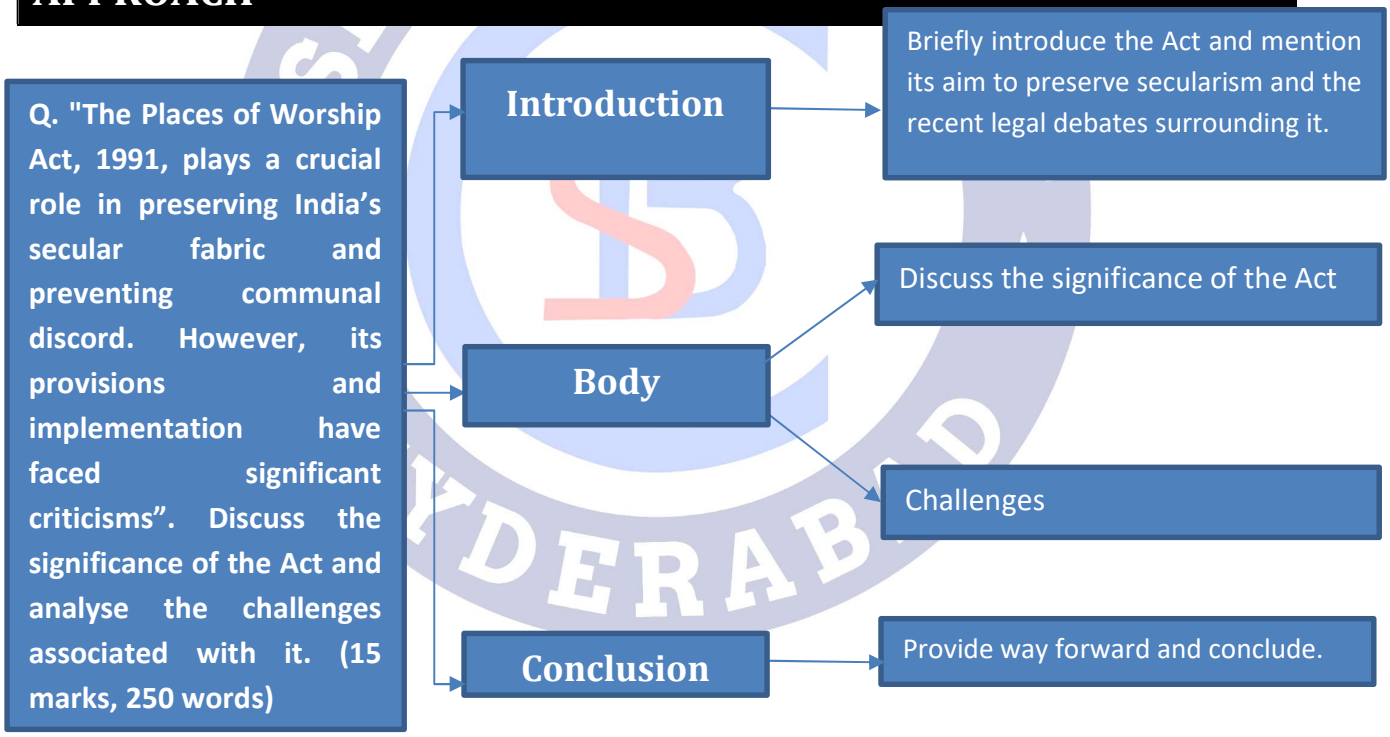
CONCLUSION:

- The Places of Worship Act, 1991, is crucial for preserving India's secular ethos and preventing communal discord. While it faces challenges regarding historical grievances and judicial review, a balanced approach with impartial enforcement and legal clarity can uphold its intent. Strengthening dialogue and promoting interfaith harmony will ensure long-term peace in a diverse society.

PRACTICE QUESTION

Q. "The Places of Worship Act, 1991, plays a crucial role in preserving India's secular fabric and preventing communal discord. However, its provisions and implementation have faced significant criticisms". Discuss the significance of the Act and analyse the challenges associated with it. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The Places of Worship Act, 1991, was enacted to maintain the religious character of places of worship as they stood on **August 15, 1947**, to **uphold secularism and prevent communal tensions.** Recent disputes, such as those involving t**he Shahi Jama Masjid and Ajmer Sharif Dargah,** alongside former Chief Justice **D.Y. Chandrachud's remark** that inquiries into a site's

religious character are permissible, have reignited debates about the Act's relevance and implementation.

Significance of the Act:

1. **Freezing the Religious Status of Places of Worship**
    - **Section 3** of the act prohibits the conversion of any place of worship or part thereof into one of a different religious denomination, ensuring the status quo as of August 15, 1947.
    - This prevents retrospective claims, ensuring historical continuity and communal harmony.
2. **Imposing Obligations on the State**
    - The Act obliges the state to protect the religious character of places of worship, promoting equality of faiths.
    - This reinforces secularism as a fundamental feature of the Constitution.
3. **Preventing Communal Conflicts**
    - By freezing the religious character of sites, the Act curbs disputes over historical grievances.
    - It restricts radical attempts to reclaim or alter religious sites, fostering harmony.
4. **Providing Legal Certainty**
    - **Section 4** of the act abates ongoing cases related to conversion of places of worship and bars new claims, reducing judicial burden.
    - This prevents misuse of courts for escalating disputes.
5. **Prescribing Penalties as a Deterrent**
    - **Section 6** prescribes up to three years' imprisonment and fines for violations.
    - This acts as a strong deterrent against altering the religious character of sites.
6. **Promoting Communal Harmony and Stability**
    - The Act prevents politically or communally motivated attempts to revisit historical grievances.
    - It reduces polarization during elections, ensuring social and political stability.

Challenges:

1. **Perpetuation of Historical Injustices**
    - The Act disregards grievances over forced conversions or alterations before 1947, leaving disputes unresolved.
2. **Arbitrary Cut-off Date**
    - The choice of August 15, 1947, as the cut-off preserves a colonial-era status quo, ignoring earlier injustices.
3. **Violation of Fundamental Rights**

- Critics argue the Act infringes on:
  - **Article 25**: Freedom of religion.
  - **Article 26**: Right to manage religious institutions.
  - **Article 29**: Protection of cultural rights.

4. **Restriction on Judicial Review**
   - **Section 4(2)** abates pending cases and bars new suits, limiting the judiciary's ability to address disputes.
5. **Legislative Competence and Federal Overreach**
   - Critics argue regulating places of worship falls under the **State List**, raising concerns about federal overreach.
6. **Ineffectiveness in Preventing Tensions**
   - Despite its intent, disputes like Sambhal and Ajmer Sharif show the Act's limitations.
   - Selective enforcement, such as Ayodhya's exemption, undermines the Act's credibility as a neutral framework.

Way Forward

- **Balanced Grievance Redressal**: Establish non-litigious mechanisms such as mediation panels to address unresolved disputes while preserving the status quo.
- **Legal and Judicial Clarity**: Amend the Act to define terms like "conversion" and clarify the scope of inquiries into historical status to avoid judicial inconsistencies.
- **Public Awareness**: Engage communities and religious leaders to foster awareness of the Act's purpose in promoting peace and unity.
- **Judicial Safeguards**: Allow limited judicial review in exceptional cases to balance justice with the Act's objectives.
- **Impartial Enforcement**: Ensure that the Act is applied uniformly, free from political interference or majoritarian bias, to uphold its secular intent.

The Places of Worship Act, 1991, is a landmark legislation vital for preserving India's secular fabric and preventing communal discord. While criticisms highlight its limitations, reforms addressing legal ambiguities and fostering community trust can ensure its balanced implementation. Upholding its spirit is essential to maintaining harmony in India's diverse and pluralistic society.

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8. IMPEACHMENT OF JUDGES

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Constitution >> Judiciary

REFERENCE NEWS:

The Opposition INDIA bloc parties in Rajya Sabha are preparing to give notice to move a motion to impeach Allahabad High Court judge Justice Shekhar Kumar Yadav for his remarks at an event organised by the Vishwa Hindu Parishad last week. Justice Yadav, who was appointed as a High Court judge in 2019, made several controversial statements against minorities in the speech, in which he sought to make a case for a uniform civil code.

The Supreme Court has taken note of Justice Yadav's speech, delivered on the premises of Allahabad High Court, and has asked the court for a detailed report.

PROCESS OF IMPEACHMENT OF JUDGES IN INDIA:

The impeachment of a judge in India is governed by **Article 124(4)** and **Article 217(1)(b)** of the Constitution and the **Judges (Inquiry) Act, 1968**. It is a parliamentary procedure for the removal of a judge of the Supreme Court or High Court.

Constitutional Provisions

- **Article 124(4)**: Deals with the removal of a Supreme Court judge. Specifies "**proved misbehaviour or incapacity**" as grounds for removal.
- **Article 218**: Says the same provisions of Article 124(4) shall apply in relation to a judge of the High Court as well.
- **Article 217(1)(b)**: Deals with the removal of a High Court judge.
- **Article 124(5)**: Allows Parliament to make laws to regulate the procedure for the investigation and impeachment of judges.

Grounds for Removal:

- **Proved Misbehaviour**: Includes corruption, abuse of office, or unethical behaviour.
- **Incapacity**: Physical or mental inability to perform duties.

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- Further clarified in the **Judges Inquiry Act, 1968** including: **misuse of office, grave offences that undermine the judge's integrity** and **contravention of the provisions of the Constitution.**

Steps in the Impeachment Process: The procedure to be followed for impeachment of a judge is laid down in the **Judges Inquiry Act, 1968.** Under Section 3 of the Act, for a motion of impeachment to be taken up, it has to be moved by not less than 100 members in the Lower House, and at least 50 members in the Upper House.

- **Initiation of Motion**: A motion for removal must be signed by **100 Lok Sabha MPs** or **50 Rajya Sabha MPs**. The motion is submitted to the **Speaker of Lok Sabha** or the **Chairperson of Rajya Sabha**.

- **Admissibility Check**: The Speaker/Chairperson examines the motion's admissibility. If admitted, a **three-member inquiry committee** is constituted to investigate the allegations. The committee comprises: CJI or a Supreme Court judge/A High Court Chief Justice/A distinguished jurist appointed by Speaker or Chairman.

    - When the motion of impeachment against Justice Soumitra Sen was moved in 2011, the distinguished jurist was Fali Nariman.

- **Inquiry Committee Investigation**: The committee conducts an investigation, giving the judge an opportunity to defend themselves. The committee frames the charges, and can seek a medical test for the judge if the impeachment charge is on the grounds of mental incapacity. The committee has the power to regulate its procedure, call for evidence, and cross-examine witnesses. Based on the findings, the committee submits its report to the presiding officer (Speaker/Chairperson). If the charges are not proven, the motion is dismissed.

    - In previous instances, this committee has appointed a lawyer to conduct the proceedings against the judge in question. In Justice V Ramaswami's case (1993), senior advocate Indira Jaising was the committee's lawyer.

- **Parliamentary Debate and Voting**: If the committee upholds the charges, the motion is taken up in both Houses of Parliament. The motion must go through at least two-thirds of those "present and voting" in both Lok Sabha and Rajya Sabha must vote in favour of removing the judge — and the number of votes in favour must be more than 50% of the "total membership" of each House.

- **Presidential Approval**: After parliamentary approval, the motion is sent to the President. The President issues an order for the removal of the judge.

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None of the six attempts at impeaching a judge since Independence have been successful. Only in two instances — involving Justices Ramaswami and Sen — have the committees of inquiry returned a guilty finding.

- The first impeachment proceedings were initiated against former Supreme Court judge **Justice V Ramaswami in 1993** on grounds of **financial impropriety**.The motion failed, and Justice Ramaswami retired a year later.
- **Justice Soumitra Sen** of Calcutta High Court was sought to be impeached in **2011,** also on grounds of **corruption**. Justice Sen was impeached by Rajya Sabha but he resigned days before Lok Sabha was scheduled to discuss the motion. The proceedings lapsed with Justice Sen's resignation.
- **Justice S K Gangele** of Madhya Pradesh High Court faced impeachment proceedings in 2015 on charges of **sexual harassment**. A committee set up to investigate the charges cleared him in 2017.
- **Justice J B Pardiwala,** who is a sitting judge of the Supreme Court, was sought to be impeached in 2015 when he was a judge of the Gujarat High Court. The removal process was triggered against remarks the judge had made in a judgment — that reservation was one of the reasons that "has not allowed the country to progress in the right direction". The judge expunged the remarks from his judgment, and the impeachment motion was subsequently dropped by then Rajya Sabha Chairman Hamid Ansari.
- **Justice C V Nagarjuna** of the High Court of Andhra Pradesh and Telengana was sought to be impeached in 2017. He was accused of victimising a Dalit judge and of **financial misconduct.** Both motions failed after Rajya Sabha MPs who had signed on withdrew their names — as a result of which the motion fell short of the required number.

SIGNIFICANCE OF THE IMPEACHMENT PROCESS

- **Safeguarding Judicial Accountability**: The impeachment process ensures that judges, who hold immense power, are held accountable for their actions. Allegations of corruption, abuse of office, or incapacity are thoroughly investigated, upholding the trust in the judiciary.
    - The attempted impeachment of **Justice V. Ramaswami (1993)** highlighted the importance of judicial accountability in cases of financial irregularities.
- **Preserving Judicial Independence**: The process protects judges from arbitrary removal, ensuring they can deliver impartial judgments without fear of political interference. Judges can only be removed through a **special majority** in both Houses of Parliament, ensuring a rigorous and bipartisan process.
- **Upholding Constitutional Morality**: The process reflects adherence to **Articles 124(4)** and **217(1)(b)** of the Constitution, ensuring any removal is consistent with the rule of law.

Parliamentary proceedings during impeachment highlight constitutional checks and balances between the judiciary, legislature, and executive.

- The **Judges (Inquiry) Act, 1968**, establishes procedural fairness, requiring an independent inquiry committee to investigate charges before impeachment.

- **Ensuring Public Trust in the Judiciary**: The process reassures citizens that misconduct by judges will not be tolerated, thereby preserving the judiciary's credibility. Transparency during impeachment motions allows public scrutiny, reinforcing faith in judicial ethics.
    - The public debate around the **Justice Soumitra Sen impeachment proceedings (2011)** demonstrated the judiciary's commitment to addressing allegations of misconduct.
- **Preventing Politically Motivated Actions**: The high threshold for impeachment prevents frivolous or politically motivated attempts to remove judges. The requirement of a **special majority** ensures that only serious cases of proven misconduct or incapacity are considered.
    - The **failure to impeach Justice V. Ramaswami** despite evidence of financial irregularities showcased how political abstention could influence the process, demonstrating both its strengths and limitations.
- **Strengthening Democratic Institutions**: Impeachment underscores the accountability of all branches of government, promoting democratic governance. The judicial impeachment process is unique in its reliance on parliamentary approval, symbolizing the judiciary's accountability to the people's representatives.
    - In cases like **Justice C.S. Karnan**, public and institutional discourse underscored the need for judicial discipline while respecting constitutional protocols
- **Aligning with Global Standards**: The impeachment process aligns India with global democracies, where judges are held accountable through fair and rigorous mechanisms. Countries like the **USA** (where federal judges can be impeached by Congress) follow similar principles of accountability and independence.
    - The **impeachment of US Supreme Court Justice Samuel Chase (1804)** set a precedent for judicial accountability in the USA, paralleling India's approach.
- **Deter Misconduct**: The existence of the impeachment process deters judges from engaging in corruption or unethical practices. The threat of impeachment serves as a constant reminder of the judiciary's ethical and constitutional responsibilities.

CHALLENGES OF THE IMPEACHMENT PROCESS IN INDIA

- **High Threshold for Initiation**: The requirement of signatures from **100 Lok Sabha MPs** or **50 Rajya Sabha MPs** makes it difficult to initiate impeachment proceedings, particularly in cases where consensus is hard to achieve.

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- **Political Interference and Bias**: The process is highly politicized, as MPs from different political parties may vote based on party lines rather than the merits of the case. The judiciary's independence can be compromised when decisions are influenced by political considerations.
    - In the case of **Justice V. Ramaswami (1993)**, the impeachment motion failed despite evidence of financial irregularities because Congress abstained from voting, protecting him from removal.
- **Lengthy and Cumbersome Process**: The multi-step process, involving inquiry committees, debates, and special majority voting in both Houses, can take years to complete. This delay allows judges under investigation to continue serving, potentially undermining public trust in the judiciary.
- **Proving Misbehaviour or Incapacity**: The grounds of "proved misbehaviour" or "incapacity" are not clearly defined in the Constitution, leading to subjective interpretations. Ambiguity makes it difficult to establish a case against a judge conclusively.
    - In the **Justice C.S. Karnan case (2017)**, his actions led to a contempt charge, but no impeachment proceedings were initiated, highlighting the lack of clarity in determining judicial incapacity.
- **Lack of an Independent Investigation Mechanism**: The inquiry committee is composed of members who are part of the judiciary and government, raising concerns about impartiality. The absence of a truly independent body may undermine the credibility of investigations.
- **Rarity of Successful Impeachments**: No judge in India has been successfully impeached to date, highlighting the practical difficulty of meeting the procedural and voting requirements. The lack of precedent reduces the deterrent effect of the impeachment process on judicial misconduct.
- **Impact on Judicial Independence**: While the impeachment process seeks accountability, its potential misuse could threaten judicial independence by subjecting judges to political pressure. Fear of politically motivated impeachment proceedings could influence judicial decisions.
- **Lack of Transparency**: The process lacks transparency as deliberations and decisions often occur behind closed doors, limiting public scrutiny The lack of openness can erode public trust in the integrity of the judiciary and the process itself.
- **Public Perception and Trust**: The prolonged and often inconclusive nature of impeachment proceedings can lead to a perception that judges are not held accountable. This undermines faith in the judiciary's ability to self-regulate and deliver justice.

WAY FORWARD

- **Establish a Judicial Accountability Commission**: Set up an independent body to investigate complaints against judges, as suggested by the **Law Commission of India (195th Report, 2006)**. The **Judicial Conduct Investigations Office (JCIO)** in the UK handles complaints about judicial misconduct impartially.
- **Clearly Define Grounds for Removal**: Specify "proved misbehaviour" and "incapacity" in constitutional or statutory provisions to avoid ambiguity, as suggested by the **National Commission to Review the Working of the Constitution (NCRWC)**. The **US Code of Conduct for Judges** explicitly lists actions that can lead to impeachment.
- **Streamline the Impeachment Procedure**: Simplify the process under the **Judges (Inquiry) Act, 1968**, to reduce delays. Introduce time-bound investigations and parliamentary debates. In **Japan**, a Judicial Impeachment Committee investigates cases and presents them directly to a tribunal, expediting the process.
- **Increase Transparency in Proceedings**: Ensure greater public access to the impeachment process to build trust, as suggested by various legal experts and jurists. In the **USA**, impeachment hearings for federal judges are publicly televised, ensuring transparency.
- **Establish Separate Investigative Mechanisms**: Decouple the investigative process from Parliament and the judiciary to avoid conflicts of interest. The **Judicial Commission of South Africa** independently investigates allegations against judges.
- **Promote Bipartisan Support in Parliament**: Encourage consensus-building mechanisms to minimize political interference. In **Australia**, bipartisan committees assess judicial conduct cases before Parliament debates them.
- **Provide Training on Judicial Ethics**: Establish mandatory ethics and accountability training for judges to prevent misconduct. The **Canadian Judicial Council** organizes workshops on judicial ethics to uphold standards.
- **Empower Civil Society Participation**: Allow civil society organizations and bar councils to present complaints to the Judicial Accountability Commission. The **Philippines Judicial and Bar Council** involves non-government members in assessing judicial accountability.

Judicial Ethics and Conduct:

- **Standards for judicial conduct**: 1985 UN Basic Principles on the Independence of the Judiciary: These principles seek to bridge the gap between ideal judicial independence and real-world practices, ensuring that -Justice is upheld, human rights are preserved, and the court acts without discrimination.

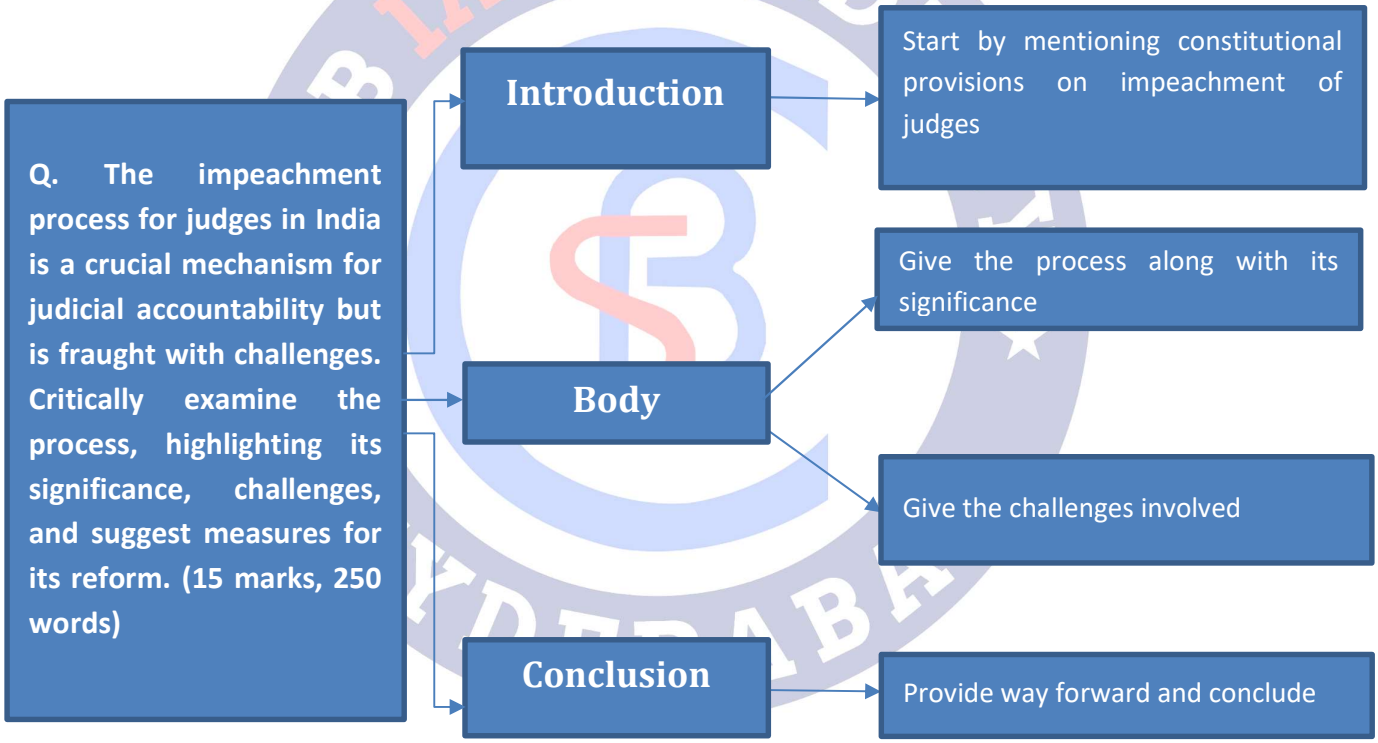
- **Restatement of values of judicial life (1997):** It is a code of judicial ethics (comprising 16 points) adopted by the SC. It emphasises impartiality and behaviour that reaffirms public confidence in the judiciary.

- **Bangalore principles of judicial conduct (2002):** The UN Economic and Social Council (ECOSOC) adopted a resolution to complement the 1985 UN Basic Principles. It requires judges to act with dignity, impartiality, and independence while respecting societal diversity.

PRACTICE QUESTION

Q. The impeachment process for judges in India is a crucial mechanism for judicial accountability but is fraught with challenges. Critically examine the process, highlighting its significance, challenges, and suggest measures for its reform. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The impeachment of judges in India is governed by **Articles 124(4)** and **217(1)(b)** of the Constitution and the **Judges (Inquiry) Act, 1968**. It ensures judicial accountability while safeguarding judicial independence. However, since independence, none of the six attempts to impeach judges have been successful, exposing procedural inefficiencies and systemic challenges.

PROCESS OF IMPEACHMENT OF JUDGES:

- **Initiation of Motion**: A motion for removal must be signed by **100 Lok Sabha MPs** or **50 Rajya Sabha MPs**. The motion is submitted to the **Speaker of Lok Sabha** or the **Chairperson of Rajya Sabha**.
- **Admissibility Check**: The Speaker/Chairperson examines the motion's admissibility. If admitted, a **three-member inquiry committee** is constituted to investigate the allegations. The committee comprises: CJI or a Supreme Court judge/A High Court Chief Justice/A distinguished jurist appointed by Speaker or Chairman.
- **Inquiry Committee Investigation**: The committee conducts an investigation, giving the judge an opportunity to defend themselves. Based on the findings, the committee submits its report to the presiding officer (Speaker/Chairperson). If the charges are not proven, the motion is dismissed.
- **Parliamentary Debate and Voting**: The motion must go through at least two-thirds of those "present and voting" in both Lok Sabha and Rajya Sabha must vote in favour of removing the judge — and the number of votes in favour must be more than 50% of the "total membership" of each House.
- **Presidential Approval**: After parliamentary approval, the motion is sent to the President. The President issues an order for the removal of the judge.

SIGNIFICANCE OF THE IMPEACHMENT PROCESS

1. **Judicial Accountability**: Ensures that judges are held responsible for misconduct, upholding public trust in the judiciary.
    - Example: The impeachment attempts against **Justice V. Ramaswami (1993)** and **Justice Soumitra Sen (2011)** highlighted the need for accountability.
2. **Preservation of Independence**: Requires a special majority in Parliament, preventing arbitrary removal of judges.
3. **Public Trust**: Reassures citizens that judicial misconduct will be addressed.
4. **Alignment with Global Standards**: Reflects principles followed in democracies like the USA, where federal judges can be impeached by Congress.

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CHALLENGES IN THE IMPEACHMENT PROCESS

1. **High Threshold for Initiation**: Requires signatures from **100 Lok Sabha MPs** or **50 Rajya Sabha MPs**, making it difficult to start proceedings.
2. **Lengthy and Complex Process**: Multi-step procedure delays justice, undermining public trust.
3. **Lack of Clarity**: Terms like "proved misbehaviour" and "incapacity" are not well-defined, leading to subjective interpretations.
4. **Political Interference**: Voting may follow party lines rather than merit, as seen in Justice Ramaswami's case.
5. **Lack of Transparency**: Closed-door deliberations limit public scrutiny.

WAY FORWARD

1. **Judicial Accountability Commission**: As suggested by the **195th Law Commission Report**, establish an independent body to investigate complaints.
2. **Define Misbehaviour and Incapacity**: Adopt clear definitions, as seen in the **US Code of Conduct for Judges**.
3. **Streamline the Procedure**: Introduce time-bound investigations and debates to expedite the process, like **Japan's Judicial Impeachment Committee**.
4. **Increase Transparency**: Publicize inquiry reports and debates, as practiced in the USA.
5. **Training on Judicial Ethics**: Regular workshops to prevent ethical violations, following **Canada's model**.

The impeachment process is essential for upholding the integrity of the judiciary. Reforms are necessary to ensure efficiency, transparency, and impartiality. A robust system will strengthen public trust, safeguard judicial independence, and reinforce India's democratic framework.

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9. PARDONING POWER OF THE PRESIDENT

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity >> Comparison of world constitutions >>> President of India and USA

REFERENCE NEWS:

Outgoing U.S. President Joe Biden has signed a **full and unconditional presidential pardon** for his son Hunter Biden, for any **federal crimes** that he "committed or may have committed or taken part in" between January 1, 2014, and December 1, 2024. After US President Joe Biden made a sudden announcement to pardon his son Hunter Biden for gun and tax evasion cases, President-elect Donald Trump called it an "**abuse and miscarriage of justice".**

POWER OF PARDON IN USA:

- The '**royal prerogative of mercy'** is a historic prerogative of the British monarch to grant pardons to convicted persons. This was originally used by the monarch to withdraw or provide alternatives to death sentences.
- At present it is used to grant **clemency** for any sentence or penalty based on ministerial advice.
- According to the **U.S. Constitution**, the **President can grant pardon except in cases of impeachment.** The U.S. President has absolute power of pardon for federal criminal offences. Such a pardon may be issued prior to the start of a legal case as well as prior to or after a conviction for a crime.
- Once accepted, the pardon grants relief from punishment and associated disqualifications but does not erase the conviction record.

INDIAN SYSTEM OF PARDONING POWER:

The **pardoning power in India** is vested in the **President and the Governors**, as per Articles **72** and **161** of the Indian Constitution, respectively.

President's Pardoning Power (Article 72): The President of India the power to grant **pardons, remit or commute sentences, grant respites or remissions of punishment, or reprieve the sentence of any person.** The President can grant pardons for:

- Offenses against Union laws.
- Punishments by court-martial.

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- Sentence involved Capital Punishment (Death sentences)

The President's pardoning power is an **executive authority**, separate from the judiciary, and is not used as a court of appeal. It serves two main purposes one is to **correct potential judicial errors**, and the other is to **provide relief from excessively harsh sentences**.

Governor's Pardoning Power (Article 161): The Governor can grant pardons for offenses against state laws, but this power does not extend to court-martial sentences or death sentences.

COMPARISON OF PARDONING POWER OF PRESIDENTS OF USA AND INDIA:

BASIS OF COMPARISON	**THE PRESIDENT OF USA**	**THE PRESIDENT OF INDIA**
Constitutional Basis	Article II, Section 2 of the **U.S. Constitution** grants the President the power to pardon offenses against federal laws, except in cases of impeachment. This includes **pardons, commutations, reprieves, and remissions** for federal offenses only.	Article **72** of the **Indian Constitution** grants the President pardoning power over: • Union laws. • Punishments by court-martial. • Death sentences (exclusive to the President).
Scope of Powers	The U.S. President's power is absolute and cannot be reviewed by courts or Congress. Pardons can be granted before conviction. **President Gerald Ford pardoned Richard Nixon** in 1974 for his role in the Watergate scandal, which was a controversial exercise of this absolute power and it was done before conviction.	The Indian President's power is **subject to judicial review**, ensuring it is not exercised arbitrarily, mala fide, or in violation of constitutional principles. In **Epuru Sudhakar v. Government of Andhra Pradesh (2006)** held that clemency powers in India are subject to judicial scrutiny.
Extend of Authority	Covers only **federal offenses** and does not extend to state crimes. The U.S. President has the sole authority to grant pardons for federal crimes without requiring approval or consultation. **Burdick v. United States (1915)** held that a pardon implies guilt and	Covers offenses under **Union laws**, including death sentences. However, state offenses are subject to the Governor's pardoning power under Article **161**. **Kehar Singh v. Union of India (1989)** confirmed that the President's power includes

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	must be accepted by the accused to be effective.	decisions on mercy petitions for death sentences.
Pardoning of Death Sentences	The President can pardon or commute federal death sentences but cannot intervene in death sentences imposed by state courts. **President Barack Obama commuted over 1,700 sentences during his presidency**, including death penalties in federal cases.	The President exclusively has the power to pardon or commute **all death sentences**, irrespective of whether they are under Union or state law.
Process and Advisory role	The U.S. President acts independently, often based on recommendations from the **Office of the Pardon Attorney** under the Department of Justice. The President has no obligation to follow the recommendations.	The President exercises pardoning powers **on the advice of the Council of Ministers**. **Maru Ram v. Union of India (1980)** clarified that the President must act in accordance with ministerial advice.
Notable Examples	**Donald Trump:** Granted clemency to 143 individuals on his last day in office (January 20, 2021), including controversial figures like Steve Bannon. **Barack Obama:** Focused on non-violent drug offenders, using commutation to reduce harsh sentences.	**Yakub Memon Case (2015):** The President rejected a clemency plea, leading to his execution for the 1993 Mumbai bomb blasts.

SIGNIFICANCE OF PARDONING POWER:

- **Correcting Judicial Errors:** The judiciary may occasionally deliver erroneous judgments. The pardoning power allows the President to rectify these mistakes, ensuring justice. It builds a **system of checks and balances** between executive and judiciary.
    - In **Epuru Sudhakar v. Government of Andhra Pradesh (2006)**, the Supreme Court emphasized that the clemency power must be used judiciously, particularly in cases of potential miscarriages of justice.
- **Providing Humanitarian Relief:** Clemency allows the President to consider factors like mercy, age, health, or mental state of the convict.
    - Convicts with terminal illnesses or pregnant women may have their sentences commuted or pardoned for compassionate reasons.

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- **Final Safeguard Against Death Penalty:** The President holds the exclusive power to pardon death sentences, acting as the last resort for those facing the capital punishment.
- **Maintaining Social Harmony:** In politically sensitive cases, the President's pardon can prevent unrest and maintain societal balance.
    - The pardoning power was instrumental in commuting sentences of convicts in the Rajiv Gandhi assassination case, which had wide public and political implications.
- **Promoting Reform and Rehabilitation:** Clemency acknowledges the rehabilitation of convicts who show genuine remorse or reform.
    - The commutation of the death sentence of AG Perarivalan in 2022 highlighted the importance of considering a convict's reform over decades in prison.
- **Symbol of Compassion in Governance:** The President's pardoning power reflects the state's commitment to tempering justice with mercy.
    - The release of prisoners during India's independence celebrations is often facilitated through clemency powers, demonstrating symbolic compassion.
- **Strategic and Political Importance:** Pardoning power can have diplomatic and political implications, particularly in cases involving foreign nationals. Clemency for foreign prisoners often serves as a diplomatic gesture, fostering better international relations.
- **Judicial Oversight of Pardoning Power:** Though discretionary, the President's clemency powers are subject to judicial review to prevent misuse.
    - **Kehar Singh v. Union of India (1989):** The Supreme Court affirmed the President's right to consider mercy petitions.
    - **Epuru Sudhakar (2006):** The Court held that clemency must not be arbitrary, mala fide, or in disregard of the Constitution.

The **Indian President's pardoning power** is broader than that of many other nations, as it extends to death sentences and court-martial cases.

CRITICISMS AGAINST PARDONING POWER IN INDIA:

- **Delays in Decision-Making:** Mercy petitions often remain pending for years, delaying justice and prolonging uncertainty for convicts and their families.
    - In the **Nirbhaya gang rape case (2012)**, delays in deciding the mercy petitions of the convicts led to widespread public criticism and frustration.
- **Lack of Transparency:** The process of deciding mercy petitions is opaque, leading to allegations of arbitrariness and political influence and **undermining Rule of Law.**

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- In **Epuru Sudhakar v. Government of Andhra Pradesh (2006)**, the Supreme Court observed that clemency decisions must be based on sound reasoning to avoid arbitrariness.

- **Political and Personal Influences:** Clemency decisions are often influenced by political considerations or personal biases, undermining their impartiality.
    - Controversial pardons like the release of some convicts in the **Rajiv Gandhi assassination case (2022)** raised questions about political motivations.
- **Judicial Delays and Overlap:** Pardoning power can conflict with ongoing judicial processes, causing confusion and delays.
    - The **Kehar Singh v. Union of India (1989)** case clarified that the President can act independently of judicial proceedings but must exercise discretion judiciously.
- **Public Backlash and Perception Issues:** Decisions to grant clemency in high-profile cases often lead to public outrage, especially in heinous crimes like rape or terrorism.
    - The rejection of mercy pleas in the **Yakub Memon case (1993 Mumbai blasts)** was lauded by some but criticized by others for its perceived harshness.
- **Inconsistent Exercise of Clemency:** The absence of clear guidelines for exercising the pardoning power leads to inconsistency in decisions.
    - The Supreme Court in **Shatrughan Chauhan v. Union of India (2014)** observed that mercy petitions must be decided consistently and expeditiously.
- **Psychological Impact on Convicts:** Prolonged delays and uncertainty in mercy petitions have severe psychological effects on convicts awaiting decisions.
    - In **Daya Singh v. Union of India (2001)**, the Court highlighted that prolonged delays in death row cases amount to mental torture, which is inconsistent with human rights principles.

RECOMMENDATIONS AND BETTER PRACTICES TO AVOID MISUSE AND ARBITRARINESS:

Establish Clear Guidelines for Clemency Decisions

- **Epuru Sudhakar Case (2006):** The Supreme Court emphasized that pardoning powers must not be exercised arbitrarily and should be supported by clear reasoning.

- **Law Commission of India (262nd Report):** Proposed guidelines for granting clemency, especially in cases involving death penalties, to avoid inconsistency.

- **United Kingdom:** Clemency decisions are guided by structured protocols under the **Royal Prerogative of Mercy**.

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Enhance Transparency and Accountability

- **Justice Venkatachaliah Committee:** Suggested reforms in clemency procedures to ensure transparency and fairness. Introduce public reporting mechanisms where clemency decisions are published with detailed justifications.
- **United States:** The Office of the Pardon Attorney publishes annual reports detailing the clemency cases handled.

Judicial Oversight

- The Supreme Court in **Maru Ram v. Union of India (1980)** and **Shatrughan Chauhan v. Union of India (2014)** affirmed that judicial review can act as a safeguard against arbitrary or mala fide exercise of pardoning powers.
- **Germany:** Clemency decisions are subject to judicial review to ensure they align with constitutional principles.

Time-Bound Decisions

- The **Law Commission of India** has highlighted the need to address delays in deciding mercy petitions, particularly in death penalty cases.
- Supreme Court rulings like **Daya Singh v. Union of India (2001)** and **Shatrughan Chauhan (2014)** called for expeditious processing of mercy pleas.
- **Japan:** Clemency petitions are processed within a fixed timeframe to avoid undue delays.

Minimize Political Influence

- **Arvind Panagariya Committee:** Advocated for mechanisms to reduce political interference in executive functions, including clemency powers.
- **Canada:** Clemency decisions are made by the Governor-General on the advice of independent committees, limiting political influence.

Focus on Rehabilitation and Humanitarian Concerns

- **Norway:** Focuses on reintegration and rehabilitation in clemency cases, ensuring that decisions align with the larger goal of societal welfare.

International Collaboration and Learning

- Engage with global organizations like the **United Nations Office on Drugs and Crime (UNODC)** to adopt best practices in clemency.

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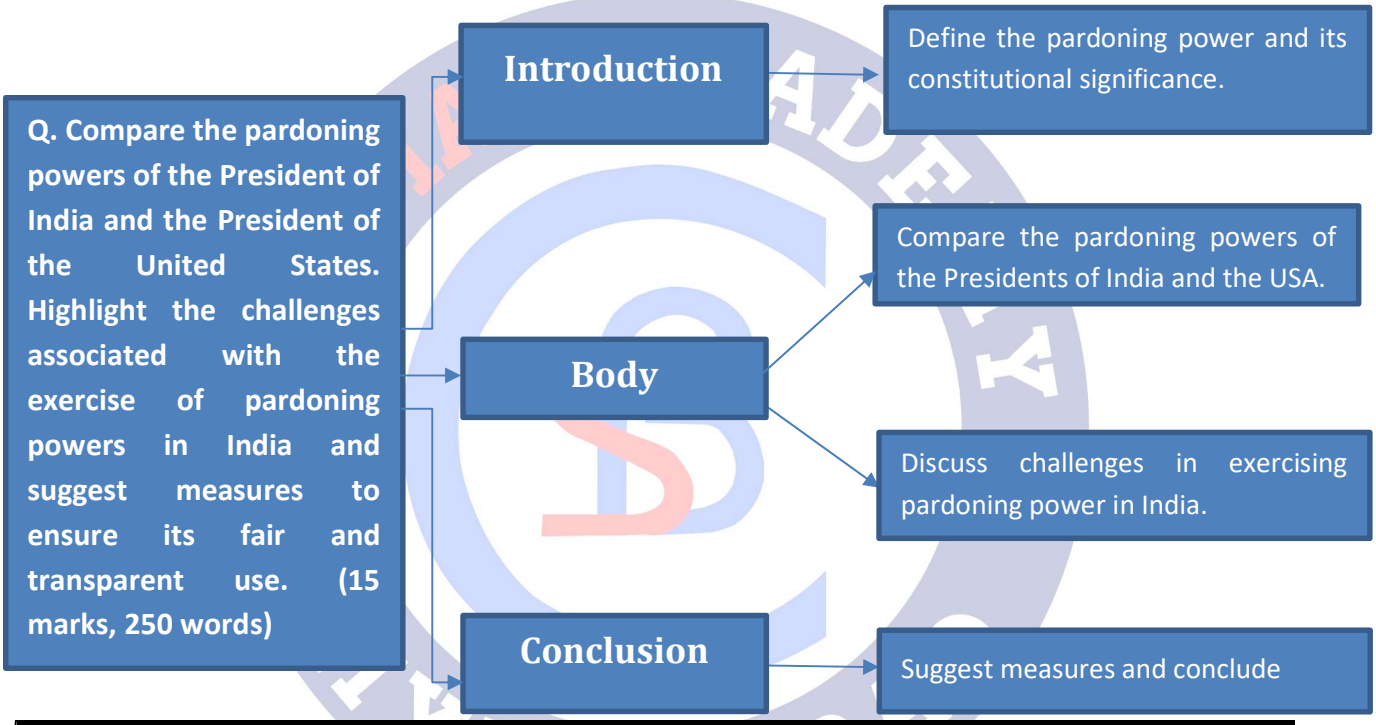
- Study systems like **South Africa's Truth and Reconciliation Commission**, which balances justice and clemency for societal harmony.

PRACTICE QUESTION

Q. Compare the pardoning powers of the President of India and the President of the United States. Highlight the challenges associated with the exercise of pardoning powers in India and suggest measures to ensure its fair and transparent use. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The pardoning power allows the head of state to grant clemency to convicted individuals, serving as a constitutional safeguard to temper justice with mercy. While the President of India exercises this power under **Article 72** of the Constitution, the President of the United States is empowered by Article II, Section 2 of the U.S. Constitution. Despite similar principles, their scope, application, and limitations differ significantly.

COMPARISON OF PARDONING POWERS

Aspect	President of India	President of the USA
Constitutional basis	Article 72 of Indian Constitution	Article II, Section 2 of the U.S. Constitution.

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Scope of Powers	Union laws, court-martial, and death sentences.	Federal crimes only; excludes state offenses.
Judicial Review	Subject to judicial review (*Epuru Sudhakar v. AP*).	Not subject to judicial or congressional review.
Advisory Role	Exercises power on the advice of the Council of Ministers.	Independent; guided by the Office of the Pardon Attorney.
Pardoning Death Sentences	Exclusive power to pardon all death sentences.	Limited to federal death sentences only.

CHALLENGES IN PARDONING POWER IN INDIA

1. **Delays in Decision-Making:** Mercy petitions remain pending for years, causing prolonged uncertainty.
    - The **Nirbhaya gang rape case (2012)** highlighted delays in mercy plea decisions.
2. **Lack of Transparency:** The clemency process is opaque, leading to allegations of arbitrariness and political influence.
    - **Epuru Sudhakar v. Government of Andhra Pradesh (2006)** emphasized the need for sound reasoning in clemency decisions.
3. **Political and Personal Influences:** Decisions may be influenced by political motives, undermining impartiality.
    - The release of convicts in the **Rajiv Gandhi assassination case (2022)** raised concerns over political considerations.
4. **Judicial Overlap:** Pardoning power may conflict with ongoing judicial proceedings, creating confusion.
    - **Kehar Singh v. Union of India (1989)** clarified that the President acts independently of courts but must exercise discretion.
5. **Inconsistent Exercise of Power:** Absence of guidelines leads to inconsistency in decisions.
    - The Supreme Court in **Shatrughan Chauhan v. Union of India (2014)** stressed timely and consistent processing of mercy petitions.

RECOMMENDATIONS AND BEST PRACTICES

1. **Establish Clear Guidelines:** Adopt structured protocols for clemency decisions to ensure consistency and fairness.
    - The **Royal Prerogative of Mercy** in the UK provides clear frameworks.

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2. **Enhance Transparency:** Publish detailed justifications for clemency decisions.
    - The U.S. **Office of the Pardon Attorney** publishes annual clemency reports.
3. **Judicial Oversight:** Allow judicial review to prevent arbitrary or mala fide decisions.
    - **Germany** mandates judicial scrutiny of clemency decisions.
4. **Time-Bound Processing:** Establish statutory timelines for mercy plea decisions.
    - **Japan** processes clemency petitions within a fixed timeframe.
5. **Independent Advisory Boards:** Form advisory committees of legal experts and retired judges to guide clemency decisions.
    - **Canada** uses independent committees to limit political interference.
6. **Public Awareness and Legal Aid:** Educate convicts and families about their rights to file mercy petitions and provide legal assistance.

The pardoning power is a vital constitutional mechanism to uphold justice and equity. While India's framework offers checks through judicial review, delays, opacity, and political influences undermine its effectiveness. Implementing clear guidelines, enhancing transparency, and adopting global best practices will ensure that this power is exercised fairly, strengthening public trust and maintaining the balance between justice and mercy.

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10. SOCIAL MEDIA AND DEMOCRACY

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity

REFERENCE NEWS:

- In a recent move, The Guardian newspaper in the UK announced its withdrawal from the social media platform, X. The decision was driven by concerns over the platform's toxic environment and the disproportionate influence of its owner, Elon Musk, in shaping political discourse. This action by The Guardian ignites a broader debate on the role of social media in democratic societies.

STATS:

Global Social Media Overview:

- Over **5 billion social media users** worldwide, making up about **62.3% of the global population.** This demonstrates the extensive reach of social media globally. (Source: 2024 Global Digital Overview, DataReportal)
- Daily social media usage worldwide totals **more than 12 billion hours**, highlighting the integral role of these platforms in daily life. (Source: 2024 Global Social Media Statistics, DataReportal)

Social Media in India:

- India has 821 million internet users with **462 million active social media accounts**, showing an annual increase of 19 million internet users or a 2.6% growth. (Source: 2024 Global Digital Overview, DataReportal)

POSITIVE IMPACTS OF SOCIAL MEDIA ON DEMOCRACY:

- **Amplification of Civic Participation:**
  - Social media has lowered barriers for political engagement, allowing citizens to discuss, debate, and mobilize around democratic causes.
  - **For instance**, in India, platforms such as Facebook and X (formerly Twitter) have been widely used to promote voter awareness campaigns, **especially targeting first-time voters.**
  - Also, during the **2020 U.S. Presidential elections**, platforms like Instagram and TikTok played a key role in engaging younger voters, contributing to record voter turnout

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- **Promotion of Freedom of Expression:**
  - Social media provides a platform for voices often silenced in traditional media, fostering democratic dialogue.
  - **For example**, during Myanmar's 2021 military coup, activists used X to share real-time updates and mobilize global support for democracy.
  - In India, **YouTube has been a vital outlet for independent journalists and activists** to share their perspectives amidst increasing restrictions on mainstream media.
- **Empowerment of Social Movements:**
  - Social media acts as a catalyst for grassroots movements, enabling them to gain visibility and momentum.
  - **For instance**, in India, the **2020-21 #FarmersProtest** relied heavily on social media to raise awareness, rally supporters, and counter misinformation.
  - **Also,** campaigns like **#BetiBachaoBetiPadhao (Save the Girl Child)** gained traction through Instagram and YouTube, illustrating the platforms' role in driving social change.
  - **The #MeToo movement**, initiated in the U.S., became a global phenomenon via platforms like X and Instagram.
- **Increased Political Engagement:**
  - Social media platforms have brought younger demographics into political discourse, often transforming them into active participants.
  - **For instance,** political parties prioritized platforms like **Instagram and WhatsApp** to connect with **first-time voters**, recognizing their substantial presence on these platforms.
- **Enhanced Transparency and Accountability:**
  - Social media allows political leaders and governments to communicate directly with citizens, reducing reliance on intermediaries.
  - **For example**, during the **COVID-19 pandemic**, the Indian government used platforms like X and WhatsApp to share vaccination updates and dispel rumours. Globally, **Ukraine's President Volodymyr Zelenskyy effectively used X** to communicate with international leaders and citizens during the Ukraine-Russia conflict.
- **Facilitation of Digital Campaigning:**
  - Political campaigns leverage social media for targeted outreach, reshaping election strategies.
  - **For instance**, Prime Minister Narendra Modi extensively utilizes platforms like X, Facebook, and WhatsApp for campaigns and initiatives like "Mann Ki Baat," fostering direct citizen engagement and inclusivity.
  -

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- **Fact-checking and Combating Misinformation:**
  - Social media platforms are increasingly incorporating tools to curb misinformation, which strengthens democratic discourse.
  - **For example**, during the **2022 French presidential elections, platforms like X flagged misleading posts** and redirected users to verified information, helping citizens make informed decisions

NEGATIVE IMPACTS OF SOCIAL MEDIA ON DEMOCRACY

- **Spread of Misinformation and Disinformation:**
  - Social media facilitates the rapid dissemination of false information, which can mislead the public and distort democratic discourse.
  - **For instance**, in India, platforms like WhatsApp have been **used to spread rumours and fake news**, leading to incidents of **mob violence and communal tensions.** The rapid spread of misinformation poses significant challenges to maintaining social harmony and informed democratic participation.
  - **Also**, during the 2016 U.S. presidential election, Russian operatives used social media to spread disinformation, aiming to influence voter behavior.
- **Political Polarization:**
  - Algorithms on platforms like Facebook and X (formerly Twitter) often prioritize content that **aligns with users' existing preferences, reinforcing their beliefs** and contributing to greater **political polarization.**
  - **For example**, a 2020 study by the Pew Research Center found that **64% of Americans believe social media has a mostly negative effect** on the country, with many citing increased division.
- **Manipulation by Political Actors**
  - Authoritarian regimes and political actors have exploited social media to manipulate public opinion and suppress dissent.
  - **For instance**, in India, political parties have been accused of **employing IT cells to spread propaganda and discredit opponents** on social media, affecting the fairness of the democratic process.
- **Undermining Electoral Integrity**
  - False information about voting procedures spread via social media can suppress voter turnout and undermine electoral integrity.
- **Erosion of Trust in Democratic Institutions**
  - The proliferation of fake news and conspiracy theories on social media erodes public trust in democratic institutions.
  - **For instance**, in India, the spread of misinformation about judicial decisions and parliamentary proceedings on social media has led to skepticism and reduced trust in these institutions.

- **Facilitation of Hate Speech and Violence**
  - Social media platforms have been used to incite violence and spread hate speech, leading to real-world consequences.
  - **For example**, in Myanmar, Facebook was used to incite violence against the Rohingya Muslim minority, contributing to a humanitarian crisis.
  - Also, in India, social media has been a **conduit for communal hate speech**, leading to incidents of violence and posing challenges to social cohesion and democratic stability.
- **Surveillance and Privacy Concerns**
  - Governments and corporations have used social media for surveillance, infringing on privacy rights and stifling free expression.
  - **For example**, **the Cambridge Analytica scandal** revealed how personal data from Facebook was harvested to influence voter behavior in multiple countries.
- **Economic Disparities in Political Advertising**
  - Wealthier candidates and parties can dominate social media advertising, leading to unequal representation and influence.
  - **For example**, in the 2019 UK general elections, the Conservative Party outspent Labour on Facebook ads by a significant margin, raising concerns about the influence of money on democratic fairness.
  - **For instance**, in India, major political parties with substantial resources have leveraged social media advertising to reach voters, potentially marginalizing smaller parties and independent candidates.

SOCIAL MEDIA REGULATION IN INDIA:

- **Information Technology Act, 2000 (IT Act)**:
  - The IT Act governs electronic communication, including social media, in India.
    - **Section 69A**: Empowers the government to block information to protect sovereignty, security, public order, or prevent incitement to offenses. **For instance**, apps like **TikTok and PUBG Mobile were banned** under this section for allegedly compromising data privacy and security.
    - **Section 79(1)**: Grants intermediaries (e.g., Facebook, X) immunity for third-party content if they only provide access and comply with due diligence requirements.
- **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**
  - Introduced to ensure accountability and online safety, these rules apply to social media intermediaries and digital media platforms.
  - **Key Provisions:**
    - Platforms must:

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- Appoint a **Chief Compliance Officer**, a **Nodal Contact Person**, and a **Resident Grievance Officer**.
- Remove unlawful content within **36 hours** of a court order or government directive.
- Enable traceability of the **first originator** of content for serious offenses (e.g., threats to national security).

- Users must be informed about:
  - Privacy policies and terms of service.
  - Prohibited activities, including sharing defamatory, copyrighted, or harmful content.

- **Challenges:** The requirement to trace the **"first originator"** raised concerns about **undermining end-to-end encryption**, especially for platforms like WhatsApp.

Fact-Checking Unit: In April 2023, the government proposed IT Rules amendments to establish a fact-checking unit to flag false information about government policies. However, the Supreme Court put the initiative on hold in March 2024 over freedom of speech concerns.

WAY FORWARD:

- **Strengthening Regulations**:
  - Establish a comprehensive framework that balances freedom of expression with the need for accountability.
  - Ensure transparency in implementing rules like the IT Act and Intermediary Guidelines to prevent misuse or overreach.
- **Promoting Media Literacy**:
  - Integrate media and digital literacy programs into school curriculums to help users identify fake news and avoid echo chambers.
  - Encourage public awareness campaigns on the responsible use of social media.
- **Enhancing Platform Accountability**:
  - Mandate platforms to improve their content moderation processes and invest in local language moderators to address regional nuances.
  - Develop AI tools to detect and reduce the spread of misinformation while respecting user privacy.
- **Strengthening Fact-Checking Mechanisms**:
  - Promote collaborations between social media platforms and independent fact-checking organizations to counter misinformation effectively.
- **Encouraging Ethical Use of Data**:
  - Enforce strict guidelines on data privacy and surveillance to prevent misuse of personal information for political or commercial purposes.
  - Penalize companies and political actors found engaging in unethical practices like targeted disinformation campaigns.

- **Ensuring Equal Access**:
  - Regulate political advertising on social media to create a level playing field for smaller parties and independent candidates.
  - Encourage subsidies or support for non-profit digital platforms to reduce monopolistic dominance.

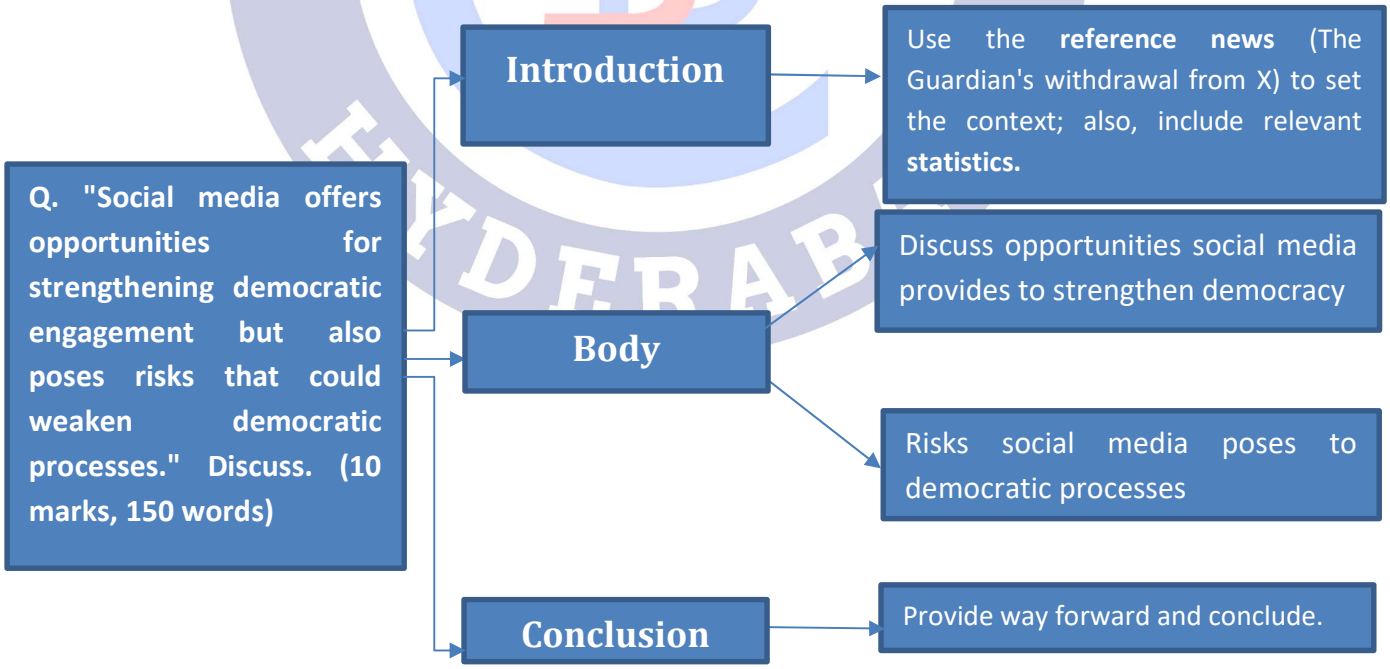
CONCLUSION:

Social media is a double-edged sword in the democratic landscape. While it empowers civic participation, freedom of expression, and transparency, it also poses challenges like misinformation, polarization, and privacy concerns. India's regulatory efforts and global best practices must converge to create an ecosystem where social media supports democratic values without infringing on individual rights. A collaborative approach involving governments, tech companies, civil society, and citizens is critical to harness the transformative potential of social media for democratic growth.

PRACTICE QUESTION

Q. "Social media offers opportunities for strengthening democratic engagement but also poses risks that could weaken democratic processes." Discuss. (10 marks, 150 words)

APPROACH



MODEL ANSWER

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Social media has revolutionized democratic processes, enabling engagement, transparency, and activism. However, it also amplifies risks like misinformation and polarization. The Guardian's recent withdrawal from **X** over concerns of toxicity underscores the need to evaluate social media's dual-edged impact. With **5 billion global users** (62.3% of the population) and **462 million active users in India** (DataReportal, 2024), its influence on democracy is undeniable.

Opportunities Social Media Provides to Strengthen Democracy

1. **Enhanced Civic Participation**: Social media fosters political discussions, opinion-sharing, and organizing around democratic causes.
    - **For example**, in India, platforms like Facebook and X have been key to voter awareness campaigns, especially for first-time voters.
2. **Amplification of Freedom of Expression**: These platforms empower marginalized voices, encouraging inclusive dialogue.
    - **For instance**, during Myanmar's 2021 coup, activists used X to share real-time updates and mobilize international support.
3. **Empowerment of Social Movements**: Grassroots movements leverage social media to gain visibility and momentum.
    - **For example**, the #FarmersProtest in India and global movements like #MeToo found widespread support through Instagram and X.
4. **Transparency and Direct Engagement**: Governments use social media to communicate with citizens, promoting accountability.
    - **For instance**, the Indian government used WhatsApp during the COVID-19 pandemic to disseminate vaccination updates and counter misinformation.
5. **Reshaping Political Campaigns**: Social media enables targeted political outreach, reshaping election strategies.
    - **For example**, Prime Minister Narendra Modi’s "Mann Ki Baat" uses platforms like X and Facebook to engage directly with citizens.

Risks Social Media Poses to Democratic Processes

1. **Spread of Misinformation and Disinformation**: Rapid dissemination of fake news distorts public opinion and creates confusion.
    - **For instance**, in India, WhatsApp has fueled rumors, resulting in mob violence and communal tensions.
2. **Political Polarization**: Algorithms reinforce users' biases, deepening ideological divides.
    - **For example**, a 2020 Pew Research study found that 64% of Americans believe social media increases political polarization.
3. **Manipulation by Political Actors**: Social media is exploited by political entities to suppress dissent and shape narratives.

- **For instance**, IT cells in India are accused of spreading propaganda to influence public opinion.

4. **Erosion of Trust in Institutions**: Fake news and conspiracy theories erode faith in democratic institutions.
    - **For example**, misinformation about judicial rulings in India has fueled public distrust.
5. **Facilitation of Hate Speech and Violence**: Social media has been used to incite violence and spread hate speech.
    - **For instance**, Facebook played a role in the Rohingya crisis in Myanmar, exacerbating violence.

Way Forward

- **Strengthening Regulations**
    - Balance freedom of expression with accountability through robust frameworks like the IT Rules.
    - Ensure transparency in enforcement to prevent misuse.
- **Promoting Media Literacy**
    - Incorporate digital literacy in schools to help users identify misinformation and engage responsibly.
- **Enhancing Platform Accountability**
    - Mandate platforms to improve content moderation and address regional language nuances effectively.
- **Encouraging Ethical Use of Data**
    - Enforce strict guidelines on data privacy and penalize unethical practices like targeted disinformation.
- **Creating Fair Advertising Policies**
    - Regulate political advertising to ensure equal opportunities for smaller parties and independents.

Social media is a transformative yet challenging force for democracy. While it promotes engagement and transparency, it also risks undermining democratic principles through misinformation and polarization. A collaborative effort involving governments, platforms, and civil society is essential to harness its potential while addressing its challenges, ensuring it strengthens democratic systems in the years ahead.

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11. DISRUPTIONS IN PARLIAMENTARY PROCEEDINGS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Polity > Parliament

REFERENCE NEWS:

- Recent trends in the Indian parliamentary system indicate a decline in standards, characterized by frequent disruptions and unruly behaviour.

MORE ON NEWS:

- A notable recent example is the on-going **Winter Session (December 2024)**, which has barely operated due to clashes between BJP and Congress **over issues involving billionaires Gautam Adani and George Soros.**
- Opposition parties **demanded discussions on bribery allegations,** leading to **repeated adjournments** in both Houses of Parliament.
- The chaos resulted in **suspended sessions**, reflecting how such disruptions hinder legislative business, **diminish parliamentary productivity**, and **leave urgent national issues unaddressed as political battles dominate the agenda.**

STATS:

- The **Winter Session 2024** has seen over **32% of its scheduled time lost** as protests erupted, demanding debates on controversial topics, including allegations against Gautam Adani.
- Parliament operates at a cost of **₹2.5 lakh per minute**, and during the 2021 Monsoon Session, disruptions led to a **loss exceeding ₹133 crore to the exchequer.** (Source: PRS Legislative Research).
- In the Monsoon Session 2023, Lok Sabha's **Question Hour lasted only 10 minutes daily**, with only 9% of questions answered (Source: PRS Legislative Research).
- The **17th Lok Sabha** has seen a sharp drop in sittings, with **59.26% fewer meetings** compared to the first Lok Sabha (source: *PRS Legislative Research*).

CAUSES OF DISRUPTIONS IN PARLIAMENTARY PROCEEDINGS:

- **Political Polarization and Lack of Consensus**:
  - The growing divide between the ruling party and the opposition often leaves little room for dialogue or compromise.

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- For instance, the **Winter Session 2024** saw **prolonged protests as BJP and Congress clashed** over allegations involving Gautam Adani and George Soros, leading to repeated adjournments. Without consensus, disagreements often escalate into disruptions.

- **Lack of Platform for Opposition Voices**:
  - Opposition parties sometimes **feel sidelined in legislative processes**, especially when **the ruling party or coalition enjoys a strong majority**, as seen in India with the BJP-led NDA's dominance in the Lok Sabha.
  - Without structured opportunities to voice their concerns, such as the **Opposition Day in the UK**, they often turn to **disruptions as a last resort** to draw attention to their issues.
- **Weak Enforcement of Rules and Decorum**:
  - Rules designed to maintain order in Parliament are not always enforced effectively, allowing unruly behavior to go unchecked. With outdated procedures that don't match the complexities of modern politics, disruptions often derail the legislative process.
- **Limited Time for Parliamentary Debates**:
  - Parliament **meets for an average of 70 days a year**, much fewer than countries like the UK, where sessions last 150 days (*PRS Legislative Research*). When disruptions eat into this already limited time, crucial legislative work often gets delayed or ignored.
- **Media and Public Attention**:
  - Disruptions tend to grab headlines more than debates do. MPs are often incentivized to disrupt proceedings to gain media coverage and show their commitment to causes, even at the cost of legislative productivity.
- **Resistance to Procedural Reforms**:
  - Both the government and the opposition have resisted reforms that could address these issues. This lack of political will perpetuates a culture where disruptions are seen as a viable tactic.
- **Erosion of Parliamentary Culture**:
  - Over time, the focus on meaningful debate has given way to shouting, sloganeering, and unruly conduct. Such behavior has become normalized, eroding the dignity and purpose of Parliament.

CONSEQUENCES OF PARLIAMENTARY DISRUPTIONS

- **Decline in Legislative Productivity:**
  - Essential functions like **passing laws and addressing issues such as inflation and unemployment are sidelined** by disruptions, leaving many bills in limbo or rushed through without proper scrutiny, weakening legislation quality.

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- For instance, only **2 bills were passed out of 19 planned** during a disrupted Budget Session 2024 (Source: *PRS Legislative Research*).
- The **Budget Session 2024** saw **17 opposition walkouts**, disrupting debates on key issues such as unemployment and inflation.
- Also, during the **Budget Session 2024**, key productivity metrics dropped:
  - **Lok Sabha** operated for only **45% of its planned time**.
  - **Rajya Sabha** worked for just **31%** (*PRS Legislative Research*).

- **Financial Costs to the Exchequer:**
  - Parliament's operations come at a high cost. When disruptions occur, this money is wasted.
  - For instance, in the **2021 Monsoon Session**, disruptions led to a staggering **loss of ₹133 crore**, with Parliament working for just **18 hours out of a scheduled 107 hours**.
  - These wasted resources are taxpayer money that could otherwise fund productive debates and meaningful reforms, leaving citizens frustrated
- **Public Trust and Disillusionment:**
  - Disruptions alienate ordinary citizens, who see Parliament as the cornerstone of democracy. When sessions are wasted, people **lose faith in its ability to address their problems.**
  - Important national issues, such as economic reforms and governance challenges, are **overshadowed by political theatrics**. This lack of accountability erodes public confidence in democratic institutions.
- **Missed Opportunities for Debate:**
  - **Question Hour**, a vital part of parliamentary functioning that holds ministers accountable, is often the first victim of disruptions.
  - For example, during the **Monsoon Session 2023**, Lok Sabha spent just **10 minutes daily** on Question Hour, with only **9% of listed questions answered** (*PRS Legislative Research*).
  - Key debates on urgent issues like unemployment, inflation, and national security often don't happen, leaving these concerns unresolved.
- **Damage to India's Democratic Image:**
  - India is celebrated worldwide as a symbol of democratic resilience. However, frequent disruptions paint a different picture.
  - A dysfunctional Parliament not only raises questions about governance but also undermines India's credibility as a global leader and an example of pluralistic democracy.

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- **Limited Parliamentary Business:**
  - Disruptions in Parliament have forced an **increasing reliance on ordinances**, **bypassing legislative scrutiny.** This undermines the role of Parliament in democratic governance. Such trends have led the V-Dem Institute's global democracy report to characterize **India's democracy as an "electoral autocracy."**
- **Erosion of Accountability:**
  - Disruptions prevent MPs from fulfilling their core responsibilities—scrutinizing government actions and holding ministers accountable.
  - Without rigorous debates, critical issues like environmental policies, public welfare schemes, and justice reforms are ignored, leaving governance gaps.

EXISTING MEASURES TO ADDRESS PARLIAMENTARY DISRUPTIONS:

India has several rules and mechanisms to ensure smooth parliamentary functioning and handle disruptions, though enforcement often falls short.

- **Constitutional Provisions**
  - **Article 105**: MPs have freedom of speech in Parliament, but it's subject to rules and decorum.
  - **Article 118**: Allows each House to create its own rules to maintain order.
- **Rules of Procedure**
  - **Lok Sabha Rule 374A**: MPs disrupting proceedings can be automatically suspended for up to five days.
  - **Rajya Sabha Rule 256**: The Chairperson can suspend unruly members for the day or longer with House approval.
- **Ethics Committees**: These committees investigate misconduct and enforce a code of conduct for MPs to uphold parliamentary decorum.
- **Code of Conduct:**
  - **A Code of Conduct for MPs** has been in place since 1952 and was updated in 1989 to address newer forms of protest.
  - The code requires MPs to maintain decorum and not disrupt proceedings. Its strict enforcement by presiding officers is critical for ensuring order.
- **Parliamentary Conventions**
  - **Question Hour and Zero Hour**: Provide MPs a platform to raise issues constructively.
  - **All-Party Meetings**: Used to resolve conflicts before they lead to disruptions.

Despite these measures, weak enforcement and political tactics often undermine their effectiveness. Stricter penalties and a commitment to constructive dialogue are essential for restoring order in Parliament.

WAY FORWARD:

- **Enhance Consensus-Building Mechanisms**
  - Foster dialogue between the ruling party and opposition through regular **all-party meetings** to address contentious issues before sessions begin.

    - Introduce structured opportunities for opposition voices, such as an **Opposition Day**, to ensure their concerns are formally debated.
- **Strengthen Enforcement of Rules and Code of Conduct**
    - Strictly enforce **existing rules**, such as Lok Sabha Rule 374A and Rajya Sabha Rule 256, to deter unruly behavior.
    - Implement and strictly adhere to the **Code of Conduct for MPs and MLAs**, which has been in place since 1952 and updated in 1989 to address newer forms of protest.
    - The Lok Sabha Speaker and Rajya Sabha Chairperson should suspend MPs violating these codes or obstructing parliamentary business.
- **Increase Parliamentary Sitting Days**
    - Extend the number of days Parliament meets annually, aligning with global standards like the UK, where sessions last for around 150 days.
    - This allows time to recover lost productivity caused by disruptions.
- **Promote Procedural Reforms**
    - Modernize parliamentary procedures to address current political complexities.
    - Introduce **longer Question Hours** and ensure more time is allocated for debates on key national issues.
- **Encourage Public Accountability**
    - Leverage **live-streaming of proceedings** to hold MPs accountable under public scrutiny.
    - Publish detailed disruption statistics to inform voters about their representatives' behavior in Parliament.
- **Cultural Shift Towards Constructive Debate**
    - Initiate workshops and training programs for MPs to promote parliamentary ethics and the importance of decorum.
    - Encourage political parties to instill a culture of dialogue and respect among their members.

CONCLUSION

- Parliamentary disruptions weaken democracy, waste resources, and erode public trust. Strengthening enforcement, fostering dialogue, and promoting a culture of respect are essential to restore Parliament's effectiveness and ensure it fulfills its democratic mandate.

PRACTICE QUESTION

Q. "Frequent disruptions in parliamentary proceedings reflect a growing challenge to legislative productivity and democratic accountability in India." Discuss the causes and consequences of disruptions in parliamentary proceedings in India. (10 marks, 150 words)

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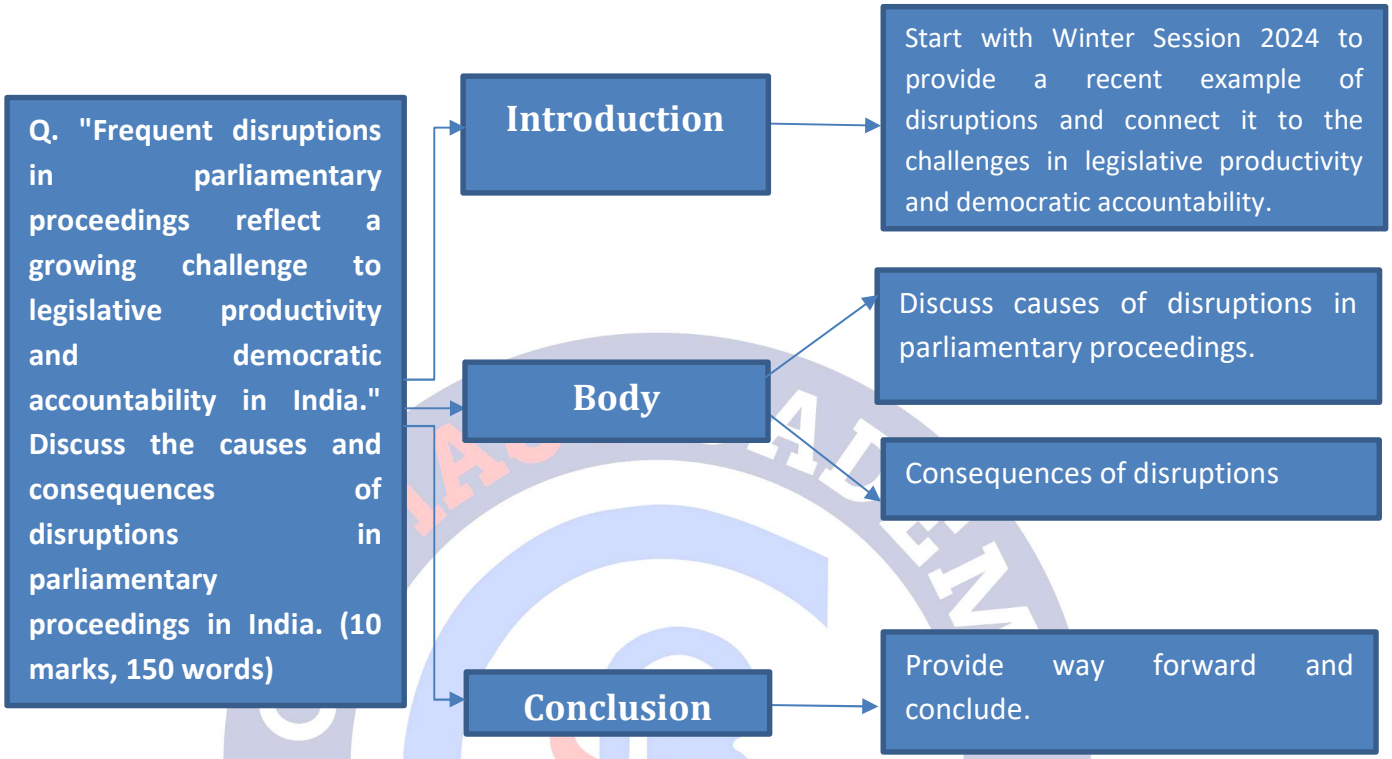
APPROACH



MODEL ANSWER

Frequent disruptions in parliamentary proceedings have emerged as a significant obstacle to legislative productivity and democratic accountability in India. The on-going Winter Session (December 2024) exemplifies this issue, with sessions repeatedly adjourned due to clashes between the BJP and Congress over allegations involving Gautam Adani and George Soros. Such disruptions not only hinder legislative business but also erode public trust in Parliament, leaving critical national issues unaddressed.

Causes of Disruptions in Parliamentary Proceedings

1. **Political Polarization and Lack of Consensus**: The growing divide between the ruling party and opposition often leads to an inability to reach agreements on contentious issues. For instance, the Winter Session 2024 was marred by protests over allegations against Adani and Soros, escalating into frequent adjournments.
2. **Lack of Platform for Opposition Voices**: Opposition parties often feel marginalized, especially when the ruling party enjoys a strong majority, such as the BJP-led NDA's

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dominance in the Lok Sabha. Without mechanisms like the UK's Opposition Day, opposition parties resort to disruptions to highlight their concerns.

3. **Weak Enforcement of Rules and Decorum**: Ineffective enforcement of parliamentary rules, such as Lok Sabha Rule 374A and Rajya Sabha Rule 256, allows unruly behavior to persist. Outdated procedures further exacerbate the problem.

4. **Limited Parliamentary Time**: With Parliament meeting for an average of 70 days annually, significantly fewer than the UK's 150 days, disruptions consume precious time, delaying critical legislative work (*PRS Legislative Research*).

5. **Media and Public Attention**: Disruptions often gain more media coverage than debates, incentivizing MPs to engage in confrontational tactics to draw attention to their causes.

6. **Erosion of Parliamentary Culture**: Over time, the focus on meaningful debate has given way to shouting and sloganeering, normalizing disruptions and undermining parliamentary dignity.

Consequences of Disruptions

1. **Decline in Legislative Productivity**: Essential legislative functions, such as passing bills and addressing key issues, are often sidelined. For instance, during the disrupted Budget Session 2024, only 2 bills out of 19 planned were passed, and Lok Sabha functioned for just 45% of its scheduled time (*PRS Legislative Research*).

2. **Financial Costs to the Exchequer**: Parliament's operations cost ₹2.5 lakh per minute, and disruptions during the 2021 Monsoon Session resulted in a loss of ₹133 crore to taxpayers (*PRS Legislative Research*).

3. **Erosion of Public Trust**: Disruptions alienate citizens, who view Parliament as a cornerstone of democracy. Repeated chaos and unproductive sessions erode confidence in its ability to address national issues.

4. **Missed Opportunities for Debate**: Question Hour, crucial for holding ministers accountable, is often the first casualty of disruptions. During the Monsoon Session 2023, Lok Sabha's Question Hour lasted only 10 minutes daily, with just 9% of questions answered.

5. **Damage to India's Democratic Image**: Frequent disruptions paint a negative picture of India's democracy, undermining its global reputation as a symbol of pluralism and governance.

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6. **Reliance on Ordinances**: Disruptions have forced the government to rely more on ordinances, bypassing legislative scrutiny, which weakens democratic accountability.

Way Forward

- **Strengthening Rules and Enforcement**
  - Enforce existing rules like Lok Sabha Rule 374A and Rajya Sabha Rule 256 strictly.
  - Ensure adherence to the Code of Conduct for MPs, updated in 1989, to curb disorder.
- **Enhanced Dialogue and Consensus-Building**
  - Conduct regular all-party meetings to resolve contentious issues.
  - Introduce mechanisms like the UK's Opposition Day to provide opposition parties with structured opportunities to voice their concerns.
- **Increase Parliamentary Sitting Days**
  - Align parliamentary sessions with global standards, increasing the number of sitting days to allow sufficient time for legislative debates and recovery from disruptions.
- **Cultural Shift in Parliamentary Decorum**
  - Promote workshops and training for MPs on ethics and the importance of constructive debate.
  - Encourage political parties to instill respect for parliamentary norms among their members.
- **Transparency and Accountability**
  - Live-stream parliamentary sessions to hold MPs accountable under public scrutiny.
  - Publish detailed statistics on disruptions and MPs' performance to inform voters.

Frequent disruptions in parliamentary proceedings not only impede legislative productivity but also weaken democratic accountability, as seen in the ongoing Winter Session 2024. Addressing this issue requires strict enforcement of rules, greater dialogue between political parties, and a cultural shift towards constructive debate. Strengthening parliamentary functioning is essential to restore public trust and uphold the integrity of India's democratic institutions.

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12. UNIVERSAL HEALTH COVERAGE

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social Justice >> Health

REFERENCE NEWS:

After nearly a decade of the UN Sustainable Development Goals (SDGs), and despite much progress, efforts to achieve **universal health coverage** (UHC) have "**largely stalled**" according to the World Bank. UHC is when everyone can access the health-care they need without suffering financially. But some **4.5 billion people still lack sufficient coverage** and the share of households using **more than 10% of their budget for out-of-pocket healthcare payments** has **increased** since 2015. Up to 1.3 billion people have been pushed further into poverty as a result of medical spending since the pandemic.

UNIVERSAL HEALTH COVERAGE:

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

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

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NEED OF UHC IN INDIA:

Disease Burden:

- **Dual Burden of Diseases**: India faces a dual burden of communicable diseases (e.g., tuberculosis, malaria) and non-communicable diseases (NCDs) like diabetes, hypertension, and cancer. NCDs account for **65% of total deaths** in India, while diseases like tuberculosis still affect around **2.6 million people annually** (WHO, 2023).
- The **Maternal Mortality Ratio (MMR)** in India is 97 per 100,000 live births (2020), which is higher than developed nations according to Ministry of Health and Family welfare.
- The **Infant Mortality Rate (IMR)** is 28 per 1,000 live births, indicating gaps in maternal and child health care as per Ministry of Health and Family welfare.
- **Pandemic Preparedness:** The COVID-19 pandemic exposed vulnerabilities in India's health care system, such as shortages of hospital beds, oxygen, and ventilators.

Socio-Economic Inequalities in Health Care

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

Economic and Social Necessity

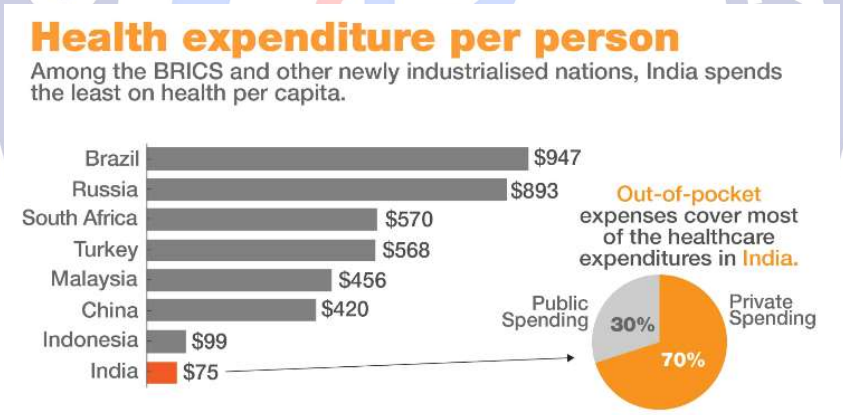
- **Economic Loss Due to Poor Health:** Productivity losses due to premature deaths, absenteeism, and poor health cost India an estimated **$4.58 trillion** between 2012 and 2030 (WHO).
- **Health and Poverty Nexus:** Poor health leads to reduced productivity and earnings, while high medical costs push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

Abhiyan aimed to reduce diarrheal diseases by improving sanitation, demonstrating how health initiatives boost productivity and reduce health care costs.

Health Infrastructure and Workforce Shortages

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

CHALLENGES OF IMPLEMENTING UHC IN INDIA:



- **Regional Disparities in Healthcare Spending**: States such as Himachal Pradesh, Kerala, and Tamil Nadu spend significantly more on healthcare per capita (₹3,829, ₹2,590, ₹2,039, respectively) compared to underperforming states like Uttar Pradesh (₹951) and Bihar (₹701). States with lower spending struggle to build the infrastructure and workforce required for UHC, creating inequalities in access to care.
- **High Out-of-Pocket Expenditure**: Out-of-pocket expenditure remains high in most states, including well-performing ones like Kerala and Punjab, where it exceeds 50% of total health spending.

- West Bengal has 67% out-of-pocket expenditure despite growing government spending on health. Andhra Pradesh has high out-of-pocket expenditure (64%) despite an increase in per capita health spending.

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

WAY FORWARD FOR IMPLEMENTING UHC IN INDIA:

- **State-Specific UHC Plans:** Develop UHC strategies tailored to the unique health profiles, challenges, and socio-economic realities of each state. Consider regional variations such as government spending, fertility rates, teenage pregnancy rates, and disease burden.
- **Strengthen Primary Healthcare:** Address the critical shortfall in primary health centres (PHCs) and health and wellness centres (HWCs). Expand access to preventive and primary care, especially in states with high disease burdens like West Bengal and Bihar.
- **Reduce Out-of-Pocket Expenditure (OOPE):** Reform health system designs to minimize OOPE by enhancing public sector capacity and ensuring free care. Avoid reliance on private healthcare schemes, like Swasthya Sathi, when public hospitals can adequately meet demand.
- **Region-Specific Interventions for Non-Communicable Diseases (NCDs):** Tailor public health strategies to address state-specific trends in NCDs such as high blood sugar or hypertension. Prioritize proactive measures like early screenings and primary care interventions for vulnerable populations.
- **Adopt Integrated Health System Design:** Move away from "one-size-fits-all" solutions to nuanced, interconnected approaches that consider cultural, historical, and local factors. Leverage regional strengths and address specific weaknesses to build a cohesive health ecosystem.
- **Enhance Public Investment in Health:** Increase per capita government spending on health to meet the inflation-adjusted requirements for UHC. Focus on equitable allocation of resources across states to reduce disparities in health access and outcomes.
- **Focus on Public Health Messaging and Awareness:** Develop region-specific public health campaigns addressing prevalent issues like NCDs or teenage pregnancies. Ensure that health awareness reaches even the poorest sections of society, regardless of income gradients.
- **Incorporate Climate Resilience in Healthcare:** Recognize the impact of climate-sensitive diseases and environmental factors on health systems. Build climate-resilient healthcare infrastructure to combat challenges like urban flooding and vector-borne diseases.

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

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

- **Financing through General Taxation**: Introduced the Universal Coverage Scheme (UCS) funded by general tax revenues, ensuring financial protection for the entire population.
- **Emphasis on Primary Health Care**: Strengthened primary care infrastructure with robust referral mechanisms.

- **Provider Payment Reforms**: Implemented capitation payments for primary care and case-based payments for hospital care to ensure cost efficiency.

Cuba's Preventive and Community-Based Health Care

- **Comprehensive Primary Care Network**: Every community is served by a family doctor and nurse team, ensuring doorstep access.
- **Preventive Health Focus**: Emphasis on early diagnosis and health promotion to reduce the disease burden.
- **Strong Public Health Spending**: High proportion of GDP allocated to health care.

Japan's Social Health Insurance System

- **Mandatory Health Insurance**: All citizens are required to enroll in health insurance plans.
- **Cost-Sharing Mechanisms**: Copayments are capped to protect against catastrophic expenditures.
- **Price Regulation**: Standardized fee schedules to ensure affordability.

Rwanda's Community-Based Health Insurance

- **Mutuelles de Santé**: Community-based health insurance schemes with premiums based on income levels.
- **Decentralized Health Services**: Health services delivered through local government units.
- **Public-Private Partnerships**: Collaboration with NGOs and private providers to enhance service delivery.

INITIATIVES FOR HEALTHCARE SECTOR IN INDIA:

India's public health expenditure is just 1.9% of GDP compared to 14.3% of USA, 2.9% of China, 3.9% of Brazil, 9.2% of Japan etc.

- **National Health Mission:** The main programmatic components include Health System Strengthening in rural and urban areas for - Reproductive-Maternal- Neonatal-Child and Adolescent Health (RMNCH+A), and Communicable and Non-Communicable Diseases. The NHM envisages achievement of universal access to equitable, affordable & quality health care services that are accountable and responsive to people's needs.
- **Ayushman Bharat:** The creation of health and wellness centres to bring health care closer to homes and the formulation of a Pradhan Mantri Jan Arogya Yojana (PMJAY) to protect poor and vulnerable families against financial risk arising out of catastrophic health episodes.
- **PM Jan Arogya Yojana:** PMJAY offers a sum insured of Rs. 5 lakh per family for secondary care (which doesn't involve a super specialist) as well as tertiary care (which does). For

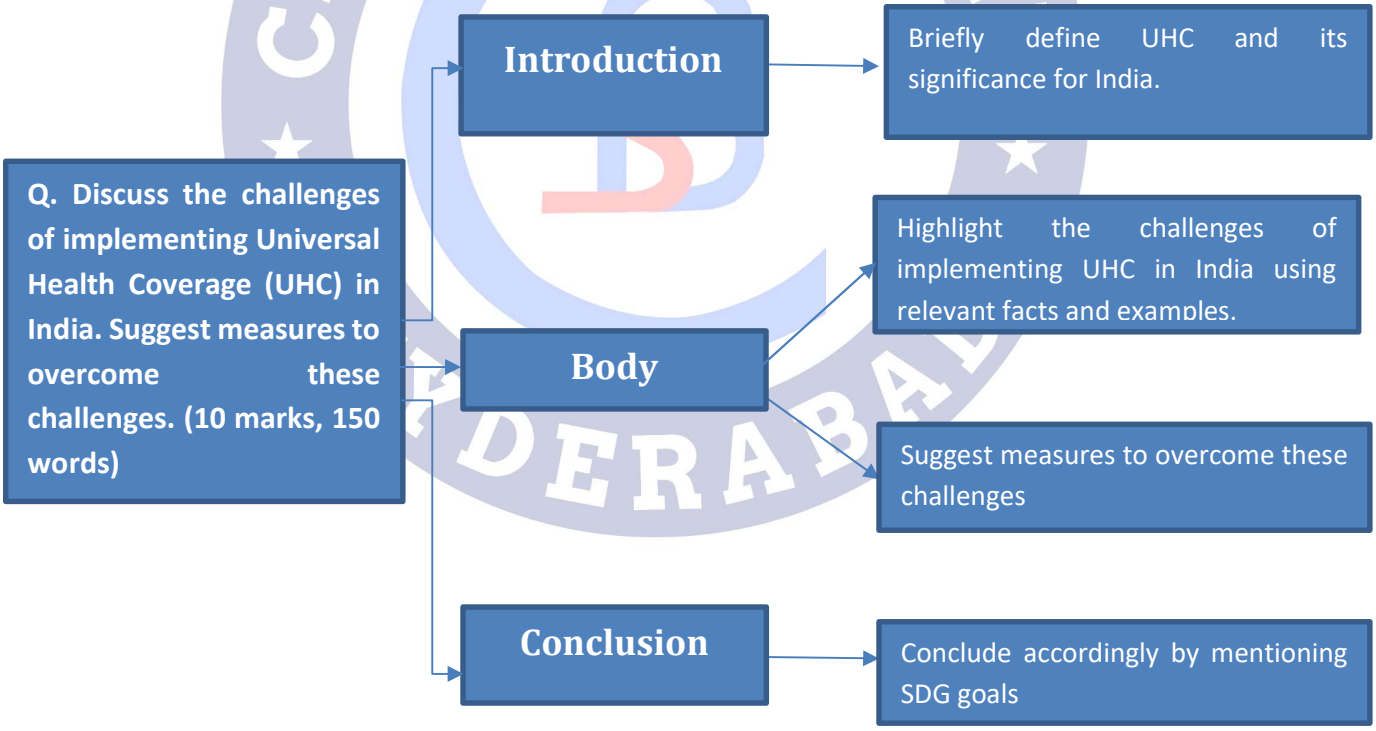
the beneficiaries, this is a free scheme. It is an entitlement-based scheme that targets the beneficiaries as identified by latest Socio-Economic Caste Census (SECC) data.

- **Janani Shishu Suraksha Karyakram:** It is an initiative to provide completely free and cashless services to pregnant women including normal deliveries and caesarean operations and sick newborn (up to 30 days after birth) in Government health institutions in both rural & urban areas. It will motivate those who still choose to deliver at their homes to opt for institutional deliveries.
- **E-Sanjeevani**: It is a **cloud-based integrated telemedicine solution** of the **Ministry of Health and Family Welfare**, Govt. of India. It is a **telemedicine app** that provides both **doctor-to-doctor** and **doctor-to-patient telecommunication.**

PRACTICE QUESTION

Q. Discuss the challenges of implementing Universal Health Coverage (UHC) in India. Suggest measures to overcome these challenges. (10 marks, 150 words)

APPROACH



MODEL ANSWER

Universal Health Coverage (UHC) ensures equitable access to quality health services for all without financial hardship. For India, achieving UHC is crucial to address its dual disease burden,

socio-economic inequities, and financial vulnerability due to high out-of-pocket expenditures (OOPE).

CHALLENGES OF IMPLEMENTING UHC IN INDIA:

1. **Regional Disparities in Healthcare Spending**: States like Himachal Pradesh (₹3,829 per capita) spend significantly more on health than Bihar (₹701) and Uttar Pradesh (₹951) (National Health Accounts, 2019-20). Such disparities create inequities in access to services and infrastructure across states.

2. **High Out-of-Pocket Expenditure (OOPE)**: OOPE accounts for 63% of health spending, pushing over 55 million people into poverty annually (National Health Accounts, 2020). Even states like West Bengal and Andhra Pradesh report OOPE of 67% and 64%, respectively, despite increased government health expenditure.

3. **Insufficient Primary Healthcare Infrastructure**: India faces a 58% shortfall in Primary Health Centres (PHCs) and Health and Wellness Centres (HWCs), critical for preventive and primary care. This shortage leads to over-reliance on secondary and tertiary care, increasing costs and inefficiencies.

4. **Diverse Health Profiles Across States**: Variations in health needs complicate UHC implementation. West Bengal has a low fertility rate (1.64) but high teenage pregnancy (16%), unlike Kerala (2.4%). Non-communicable diseases (NCDs) like high blood sugar dominate in West Bengal and Bihar, while Kerala has a dual burden of hypertension and diabetes.

5. **Overemphasis on Private Healthcare**: Public funds are often diverted to private healthcare schemes, such as West Bengal's Swasthya Sathi, despite adequate public hospital capacity. This limits sustainable investment in public infrastructure.

6. **Workforce and Infrastructure Deficits**: India has only 1.4 hospital beds and 0.65 physicians per 1,000 people, far below WHO recommendations. Rural areas suffer the most, with understaffed and under-equipped PHCs.

7. **Climate Resilience and Emerging Threats**: Vector-borne diseases and environmental factors exacerbate health vulnerabilities, especially in urban slums.

MEASURES TO OVERCOME CHALLENGES:

1. **State-Specific UHC Plans**: Tailor health policies to address regional variations in health profiles, disease burden, and socio-economic realities. Focus on reducing teenage pregnancies in West Bengal while prioritizing NCD management in Bihar.

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2. **Strengthen Primary Healthcare**: Expand PHCs and HWCs to ensure access to preventive and primary care. Leverage Ayushman Bharat initiatives to bridge infrastructure gaps.
3. **Reduce OOPE**: Enhance public hospital capacity to provide free care and reduce reliance on private healthcare schemes. Ensure universal health insurance coverage, minimizing exclusion and inclusion errors in schemes like PM-JAY.
4. **Invest in Public Health Infrastructure and Workforce**: Increase public health spending to 2.5% of GDP, as recommended by the National Health Policy, 2017. Train and deploy more health workers in rural and underserved areas.
5. **Adopt Integrated Health System Design**: Move away from "one-size-fits-all" policies to interconnected systems that address local socio-cultural factors. Integrate climate resilience into healthcare infrastructure.
6. **Learn from International Models**:
    - *Thailand*: Strengthen primary care and fund UHC through general taxation.
    - *Cuba*: Focus on preventive care and community-based health networks.
    - *Japan*: Introduce mandatory health insurance with cost-sharing caps.

Achieving UHC in India is not just a healthcare imperative but a socio-economic necessity to improve productivity and reduce poverty. With strengthened primary care, reduced OOPE, and increased public health investment, India can realize the vision of "Health for All" under Universal Health Coverage. Also One Health approach adds to inclusive treatment of health well being enhances transition to UHC thus attaining SDG 3.8.

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13. DRUG AND SUBSTANCE ABUSE

iMPACT ANALYSIS

SYLLABUS:

GS 2> Social justice > Health

REFERENCE NEWS:

- Recently, in a significant ruling, the Supreme Court has described drug abuse as a "generational threat" that jeopardizes the future of India's youth.
- The judgment was delivered in the context of a National Investigation Agency (NIA) probe into a heroin smuggling case linked to Pakistan. The court also broadened the NIA's authority under Section 8 of the NIA Act, allowing for more comprehensive investigations into drug-related crimes.

Section 8 of the **National Investigation Agency (NIA) Act, 2008** pertains to the **powers and responsibilities of the NIA during investigations**. It enables the agency to investigate offenses that fall under its jurisdiction with greater authority and coordination.

DRUG OR SUBSTANCE ABUSE:

- Drug or substance abuse **refers to the use of certain psychoactive substances for the purpose of creating pleasurable effects on the brain**.
- **Psychoactive substances include** alcohol, tobacco, cocaine from coca, opium and opioids from poppy plants. hashish or marijuana from cannabis, synthetic drugs such as heroin, ecstasy and LSD

STATISTICS

- The UNODC's(UN Office on Drugs and Crime) **World Drug Report 2024** highlights that **292 million people** used drugs in 2022, reflecting a **20% increase** over the past decade.
- Approximately **64 million people** globally suffer from drug use disorders, yet only **1 in 11 individuals** receive treatment.
- According to the **Ministry of Social Justice and Empowerment (2019)**, India's illicit drug markets are primarily dominated by **cannabis** and **opioids**.
    - There were **3.1 crore (31 million) cannabis users** in 2019, making it one of the most widely used substances in the country.
    - **2.3 crore (23 million) opioid users** were recorded in the same year, highlighting the severity of opioid dependence in India.

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- **Alcohol consumption** affects **16 crore (160 million)** people aged 10-75, with **5.2% of the population** classified as alcohol-dependent.
- Approximately **8.5 lakh** individuals in India are People Who Inject Drugs (PWID), engaging in high-risk behaviors.

CAUSES OF DRUG ABUSE

Social Factors

- **Curiosity and Peer Pressure:** Curiosity about new experiences and peer influence, especially during adolescence, often lead young individuals to experiment with drugs.
- **Recreational Purposes:** Drugs are sometimes used for leisure or social bonding, but this recreational use can quickly turn into dependency.
- **Creative Inspiration:** Artists and creators may resort to drugs, believing they enhance imagination or productivity.
- **Erosion of Moral Values:** A lack of moral guidance and societal values increases susceptibility to risky behaviors, including drug use.
- **Diversion of Prescription Drugs:** Medications like painkillers, meant for medical purposes, are often misused recreationally, leading to addiction.

Biological Factors

- **Family History and Genetics:** A family history of substance abuse or genetic predisposition increases the likelihood of addiction.
- **Pre-existing Disorders:** Individuals with mental health issues or personality disorders may use drugs to self-medicate, increasing dependency risks.

Psychological Factors

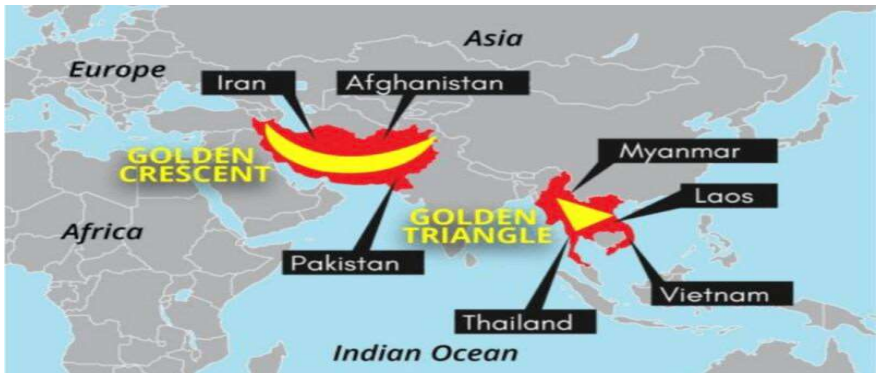
- **Mental Stress:** Work-related pressure, academic burdens, and challenges in personal life can drive individuals to drugs as a form of escapism.
- **Childhood Trauma:** Experiences like abuse, neglect, or family dysfunction during formative years can leave individuals vulnerable to addiction.

Economic Factors

- **Poverty and Unemployment:** Financial hardships often push individuals to seek solace in drugs, particularly in underserved communities.
- **Economic Inequality:** Frustration stemming from societal disparities and lack of opportunities makes youth more inclined toward substance abuse.

Other Factors

- **Proximity to the Golden Crescent and Golden Triangle:**
  - India's geographical closeness to major opium-producing regions exacerbates drug trafficking and availability.



- **Weak Law Enforcement:** Inadequate regulation and enforcement enable drug peddling and make substances easily accessible, even in urban centers.
- **Organized Crime Syndicates:** Drug trafficking networks backed by external state actors, like Pakistan, sustain a lucrative and dangerous black market.
- **Media Influence:** Popular culture, including Bollywood movies, often romanticizes drug use, portraying it as trendy or rebellious, which appeals to impressionable youth.

IMPACT

- **Health impact:**
  - Apart from the long term damage to the body drug abuse causes, drug addicts who use needles are also at **risk of contracting HIV and hepatitis B and C infections.**
  - Tobacco use is the **leading cause of cancer in the country.** For instance, according to the **National Cancer Registry Programme Report 2020** by the Indian Council of Medical Research (ICMR), **approximately 27% of all cancer** cases in India are attributable to tobacco consumption.
  - It also results in **low level work productivity** and **pre-mature deaths.**
- **Addicts and Crime:** Drug addiction often pushes individuals into petty crimes such as theft or burglary to sustain their habits.
- **Impairment of Judgment:** Drug and alcohol use often impair judgment and lower inhibitions, leading to violent behavior. The **National Crime Records Bureau (NCRB)** has recorded cases of crimes, including assaults and murders, committed under the influence of intoxicating substances.
- **Neglect of Vulnerable Groups:** A **2019 study by AIIMS** revealed that individuals battling both mental health issues and substance abuse are often underserved or mistreated in treatment facilities, leaving them without the care they need.
- **Rising Drug Abuse:** The **Ministry of Social Justice and Empowerment (2019)** noted a rise in drug abuse among women, especially in urban areas. Despite this, social stigma and a lack of exclusive rehabilitation facilities deter many women from seeking help.

- **Victimization:** Women struggling with addiction are particularly vulnerable to exploitation. A report by the **United Nations Office on Drugs and Crime (UNODC)** highlights the increased risks of sexual abuse and trafficking faced by women with substance use disorders.
- **Smuggling and Drug Cartels:** Drug cartels, often linked to external state actors, smuggle significant quantities of drugs into India. For instance, the **2021 seizure of 3,000 kg of heroin at Mundra Port** exposed the extent of the Golden Crescent drug trade's reach into India.
- **Loss of Productivity:** Substance abuse takes a heavy toll on the economy. A report by the **National Institute of Social Defence (NISD)** estimated that it costs India billions annually in lost productivity and healthcare expenses.
- **Drug-Impaired Driving:** According to the **Ministry of Road Transport and Highways**, 12% of road accidents in 2021 were attributed to drivers under the influence of drugs or alcohol, endangering lives on the road.
- **Impact on Education:** A **2019 AIIMS study** found rising substance abuse among college students in Delhi, with cannabis and alcohol being the most commonly used substances, often affecting their academic performance.
- **Impact on Families:** The **National Family Health Survey (NFHS-5)** documented a rise in domestic violence linked to alcohol consumption, with rural households being particularly affected.

GOVERNMENT EFFORTS TO COMBAT DRUG ABUSE

Policy and Legislation

- **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985:**
  - Defines narcotic drugs and psychotropic substances and lays out the framework for their prohibition, control, and regulation.
  - Imposes severe penalties for drug-related offenses, which are non-bailable.

Institutions and Coordination

- **Ministry of Social Justice and Empowerment:** Acts as the nodal ministry for drug demand reduction.
- **Narco-Coordination Centre (NCORD):** Operates under the Ministry of Home Affairs to combat drug trafficking and use.
- **Narcotics Control Bureau (NCB):** Established under the NDPS Act, the NCB coordinates with central and state agencies for drug law enforcement.

Key Initiatives

- **Nasha Mukt Bharat Abhiyaan (NMBA):** Launched in 2020 to focus on 272 most-affected districts through a three-pronged strategy involving enforcement, awareness, and treatment.

- **National Action Plan for Drug Demand Reduction (NAPDDR) 2018-2025:** Aims to reduce the adverse consequences of drug abuse through community outreach, awareness programs, and rehabilitation services.

International Cooperation

- India is a signatory to key UN drug conventions, including:
  - **Single Convention on Narcotic Drugs, 1961**
  - **Convention on Psychotropic Substances, 1971**
  - **Convention Against Illicit Traffic in Narcotic Drugs, 1988.**
- India has signed **37 bilateral agreements/Memoranda of Understanding** for coordination against drug trafficking.

State-Level Efforts

- **Punjab and Haryana:** Special Task Forces (STF), border patrols, and opioid-assisted treatment clinics are in operation to reduce drug supply and demand.
- **Alcohol Prohibition:** Enforced in Gujarat, Bihar, Nagaland, and Lakshadweep.

Awareness and Rehabilitation

- **National Tobacco Control Programme:** Includes media campaigns, integration into school curricula, and training for social workers.
- **Rehabilitation Support:** Financial assistance for NGOs and programs like Integrated Rehabilitation Centres for Addicts (IRCAs).

Four pillars and "Whole of the Government" approach:

- There are **four pillars** of the central government's campaign **to eliminate the menace of drugs** from the country:
  - **Detection of drugs**
  - **Destruction of Network**
  - **Detention of culprits**
  - **Rehabilitation of drugs abusers.**
- Also, the government has adopted a **"Whole of the Government"** approach against drugs, in which **all departments and agencies** should move forward to make a drug-free India by **increasing cooperation, coordination, and collaboration.**

CHALLENGES IN CURBING DRUG ABUSE

- **India as a Drug Trafficking Hub:** Positioned between the **Golden Triangle** and **Golden Crescent**, India's geography makes it a transit point for drug trafficking.
- **Flawed Approach to Drug Consumption:** India's punitive approach, influenced by the global "war on drugs" policy, criminalizes drug users instead of treating them as victims.
- **Organized Nature of Crime:** Drug trafficking operates as an organized network, making it difficult to dismantle from source to destination.
- **Police-Politician-Peddler Nexus:** Examples from Punjab reveal the involvement of law enforcement and political entities in the drug trade.

- **Legal Loopholes:** Small drug seizures (under five grams) lead to lighter penalties and easier bail, incentivizing trafficking in smaller quantities.
- **Treatment Gap:** National Mental Health Survey (2015-16) reported a **70% treatment gap** for drug use disorders and a shortage of psychiatrists and counsellors.
- **Revenue Dependency:** High taxation on tobacco and alcohol generates significant revenue, reducing governmental commitment to lowering consumption.
- **Advances in Technology:** The **dark web**, online pharmacies, and cryptocurrency make drugs more accessible.
- **Impact of COVID-19:** The pandemic exacerbated socio-economic vulnerabilities, increasing drug use disorders.
- **Lobbying and Advertising: Tobacco companies** and **surrogate advertising** for alcohol sustain demand despite regulatory efforts.

WAY FORWARD

- **Supply-Side Measures**
  - **Joint Mechanism:** Establish a coordinated platform for agencies like NCB, BSF, and state police for synergy and avoiding operational overlap.
  - **Border Surveillance:** Enhance security infrastructure along India-Pakistan and India-Myanmar borders.
  - **Anti-Corruption Measures:** Modernize police and judiciary to curb drug trade more effectively.
- **Demand-Side Measures**
  - **Community Policing:** Engage parents, educators, and community leaders in prevention efforts.
  - **Recreation and Skills Development:** Promote sports, recreational activities, and skill-building to divert youth from drugs.
  - **Policy Change:** Decriminalize possession of small quantities for personal use to focus on rehabilitation over punishment.
- **Evidence-Based Prevention Programs:** Address school dropouts, improve employability, and create opportunities for youth participation in society.
- **Improved Treatment and Awareness:** Invest in de-addiction facilities, enhance resource allocation for treatment, and run awareness campaigns to reduce stigma.
- **Stakeholder Participation: Integrate** health workers, community leaders, and religious figures to plan and implement prevention and rehabilitation activities.
- **Drug Diversion Control:** Strengthen coordination between the Central Drugs Standard Control Organisation (CDSCO) and Narcotics Control Bureau to prevent misuse of legal drugs.
- **Community-Based Approach:** Support addicts and their families with emotional and social reintegration through community programs.

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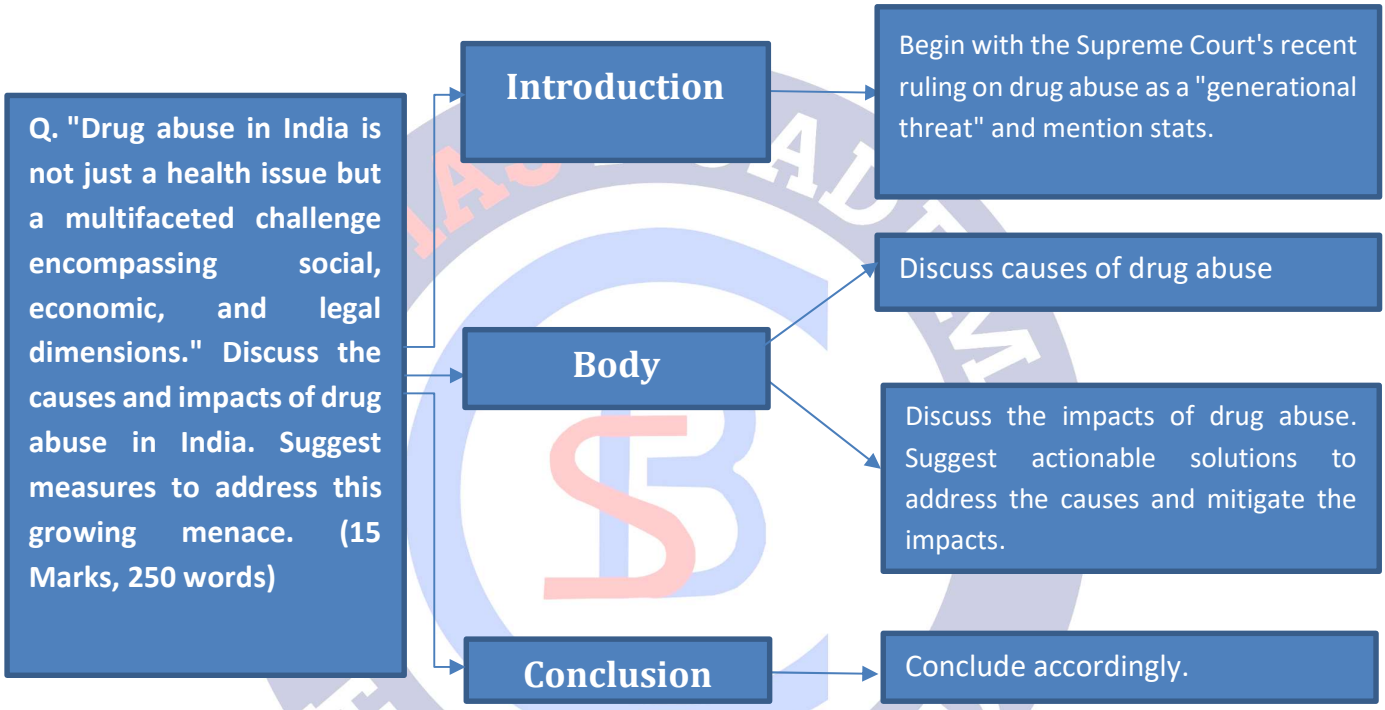
PRACTICE QUESTION

Q. "Drug abuse in India is not just a health issue but a multifaceted challenge encompassing social, economic, and legal dimensions." Discuss the causes and impacts of drug abuse in India. Suggest measures to address this growing menace. (15 Marks, 250 words)

APPROACH



MODEL ANSWER

The Supreme Court recently described drug abuse as a "generational threat," emphasizing its ability to erode the future of India's youth. The verdict, which expanded the investigative powers of the National Investigation Agency (NIA), highlights the urgency of tackling this issue. According to the **UNODC World Drug Report 2024**, 292 million people globally used drugs in 2022, a 20% increase over the last decade. In India, cannabis and opioids dominate the illicit drug market, with **3.1 crore cannabis users** and **2.3 crore opioid users** recorded in 2019.

Causes of Drug Abuse

1. **Social Factors**
    - **Curiosity and Peer Pressure:** Adolescents are often drawn to drugs due to curiosity or social influence.

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- **Recreational Use:** Many individuals use drugs for leisure or social bonding, which can quickly lead to dependency.
- **Media Glorification:** Movies and pop culture frequently romanticize drug use, normalizing it among impressionable audiences.

2. **Economic Factors**
   - **Poverty and Unemployment:** Financial hardships make vulnerable populations turn to drugs as an escape.
   - **Economic Inequality:** Frustration from disparities in wealth and opportunities makes marginalized youth susceptible to substance abuse.
3. **Psychological Factors**
   - **Mental Stress:** Academic pressure, job insecurity, and personal challenges often drive individuals to drugs.
   - **Childhood Trauma:** Experiences like abuse, neglect, or dysfunctional family environments significantly increase vulnerability.
4. **Biological Factors**
   - **Genetic Predisposition:** A family history of substance abuse can make individuals more likely to become addicted.
   - **Self-Medication:** People with mental health disorders often resort to drugs as a coping mechanism.
5. **Geographical and Political Factors**
   - **Proximity to Drug Hubs:** India's location near the **Golden Triangle** and **Golden Crescent** facilitates drug trafficking.
   - **Weak Enforcement:** Ineffective law enforcement and corruption make it easier for drug peddlers to operate.
6. **Technological Factors**
   - **Dark Web and Online Pharmacies:** Internet-based drug markets and cryptocurrency transactions have made drugs more accessible, bypassing traditional controls.

Impacts of Drug Abuse

1. **Health Impacts**
   - **Physical Health:** Drug use leads to long-term damage to organs and increased risk of **HIV and hepatitis B/C** from needle use.
   - **Cancer:** Tobacco accounts for **27% of cancer cases in India** (ICMR, 2020).
2. **Social Impacts**
   - **Criminal Activities:** Drug addiction pushes individuals into crimes like theft and burglary to sustain their habits.

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- **Victimization of Women:** Women addicts face exploitation, including sexual abuse and trafficking, as highlighted by the UNODC.

3. **Economic Impacts**
   - **Loss of Productivity:** Substance abuse costs India billions in lost productivity and healthcare, according to the National Institute of Social Defence (NISD).
   - **Drug Cartels:** Smuggling operations, such as the **3,000 kg heroin seizure at Mundra Port in 2021**, harm economic security.
4. **Educational Impacts**
   - **Academic Decline:** A **2019 AIIMS study** found rising drug abuse among college students, negatively affecting their academic performance.
   - **Dropout Rates:** Substance use increases school and college dropout rates, limiting future opportunities.
5. **Family Impacts**
   - **Domestic Violence:** The **NFHS-5** linked rising domestic violence cases to alcohol consumption, particularly in rural areas.
   - **Family Breakdown:** Addiction often leads to financial strain and emotional neglect, tearing families apart.
6. **Road Safety Impacts**
   - **Accidents:** The **Ministry of Road Transport and Highways** reported that **12% of road accidents in 2021** were caused by impaired driving, endangering lives.

Way Forward

- **Supply-Side Measures**
  - Strengthen surveillance along borders and establish coordinated platforms for agencies like NCB and BSF.
  - Modernize enforcement infrastructure to dismantle organized trafficking networks.
- **Demand-Side Measures**
  - Promote recreational and skill-building activities to provide healthier alternatives for youth.
  - Implement community policing to engage parents and educators in preventive efforts.
- **Policy Reforms**
  - Decriminalize small quantities of drug possession to focus on rehabilitation rather than punishment.
  - Increase penalties for large-scale trafficking and focus resources on dismantling cartels.

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- **Awareness and Rehabilitation**
  - Expand de-addiction centers and train mental health professionals to reduce the **70% treatment gap** (National Mental Health Survey, 2015-16).
  - Launch campaigns to reduce stigma and educate communities on the dangers of drug abuse.
- **Technological and Community-Based Approaches**
  - Enhance monitoring of the dark web and online pharmacies to curb illegal transactions.
  - Foster a sense of belonging among addicts through community-based programs and family support.

Drug abuse is a multifaceted challenge affecting health, society, and the economy. By addressing its root causes and impacts through a comprehensive strategy combining supply reduction, demand management, and community engagement, India can effectively mitigate this menace and secure the future of its youth.

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14. CASTE BASED CENSUS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > Social justice > Government Policies

REFERENCE NEWS:

- The demand for a caste census has gained momentum, with support from opposition leaders, NGOs, and more recently, the Rashtriya Swayamsevak Sangh (RSS), reflecting its growing importance across diverse groups.

CASTE CENSUS:

- The British conducted and published caste census data till 1931. Caste data were collected for Census-1941 but not published.
- After Independence**, only the data related to Scheduled Castes and Scheduled Tribes were collected and published**.
- The **Socio-Economic Caste Census (SECC)** was conducted in 2011. The data, excluding caste data was finalized and published in 2016. However, the caste data has not been released.
- **States are free to conduct an OBC census**. Karnataka has already conducted a caste-based census at the state level.

WHY IS A CASTE-BASED CENSUS NEEDED?

- **Step towards casteless society:**
  - In order to abolish caste, it is essential to first abolish caste-derived privileges. To do that, the state must first map castes and their socio-economic status privileges/deprivations, which is what a caste census seeks to do.
- **Absence of empirical data:**
  - Till date, there is **no clarity over the population of OBCs**. While the Mandal Commission had estimated the figure to be 52%, school enrolment data suggests it to be 45% and the NSSO survey of 2007 puts it at 41%.
- **Incoherence in reservation:**
  - On the basis of Census data, the SCs form about 15% of India's population and the STs about 7-8%. **This figure is also the basis of reservation**: 15 % for SCs and 7.5% for STs. However, such a basis is absent in case of OBC reservations.

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- **Address rising inequality:**
  - According to the World Inequality Report 2022, India stands out as a "poor and very unequal country, with an affluent elite", where the top 10% holds 57% of the total national income, while the bottom 50% holds just 13% in 2021. Such an unequal distribution of wealth demands a greater understanding of Indian society.
- **Rationalise welfare efforts:**
  - The panel on subcategorization of OBCs in 2017 had found that **less than 1 % OBC communities have cornered 50% of the reservation benefits**, while 20% of OBC communities did not get any quota benefit between 2014 and 2018. Counting the castes can help rationalize government programmes and efforts towards welfare of these marginalized OBC communities.
- **Make objective decisions on new demands:**
  - Several dominant communities in India have been demanding inclusion under the OBC category. Through a census, it is possible to objectively verify such demands.
- **Similar exercise is already in practice:**
  - The census already records a gamut of data, from religion to language to socio-economic status, and also counts SCs and STs. Hence there is no good reason not to count OBCs.
- **Global examples:**
  - It is far from uncommon for governments to do similar censuses. The United States counts people by race and the UK enumerates country of origin for its immigrant population.
- **Flawed SECC data:**
  - The SECC data of 2011 is not made public as it was found to be "flawed".
  - For example, in Maharashtra, the existing SC, ST and OBC categories, as per government records, are only 494. But the 2011 caste census yielded 4,28,677 castes. Hence, conducting a new census is justifiable.

CONCERNS OVER CASTE-BASED CENSUS:

- **Perpetuation of caste**:
  - Many historians believe that British census made India's caste system more rigid and prevented previous fluidity that allowed cross-caste movement. Today, opponents argue that caste census would lead to a similar perpetuation of caste identities.
- **New demands for reservation:**
  - The census could alter the current caste equations and bring Mandal politics back in play. Fresh demands will be raised for reservations and it will not be easy to accommodate all the castes and their demands.

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- **Breach of reservation limits:**
  - If the share of OBCs increases or decreases in India's population, it would call for a restructuring of reservation system and removal of the 50% reservation cap introduced through the Indra Sawhney (Mandal case) judgement.

- **Resurgence of violent conflicts:**
  - Implementation of Mandal commission recommendations witnessed several anti-Mandal protests, some of which involved violence and self-immolations. The new census might trigger similar type of protests and violence.
- **Challenges Posed by Caste Mobility**
  - Individuals misreport caste to align with perceived social prestige (upward mobility).
  - Historical instances (1921-1931) show groups changing their reported caste identities, e.g., Sonar members claiming Kshatriya, Rajput, Brahmin, and Vaishya identities in different Censuses.
  - Post-independence, some groups claim lower caste identities (downward mobility) to access reservation benefits.
  - Examples include upper castes seeking OBC status.
  - Such mobility undermines the reliability and accuracy of caste Census data.
- **Polarization of Indian society:**
  - Reservations have become a major political tool. Political parties, in order to appease vote bank communities, continue to expand reservation. A new census could aggravate this situation and rekindle divisive feelings.
- **Encourages apathetic governance:**
  - Affirmative action was designed to correct the historical wrong that certain groups experienced for centuries. However, governments, instead of taking reformative efforts towards development, have come to use reservation as a poverty alleviation and employment measure.
- **Absence of caste registry:**
  - There is no uniform registry of castes in India. Hence, there is no consistent way to aggregate or segregate same or similar castes with variant spellings. Conducting a caste census without this could result in the ballooning of caste categories, like it did in the 2011 SECC.
- **Caste Misclassification:**
  - Confusion arises from similar-sounding surnames.
  - For example, in Rajasthan: 'Dhanak' (SC), 'Dhanka' (ST).
  - Bengal: 'Sen' (upper caste), 'Sain' (OBC).
  - Enumerators may rely on assumptions, leading to errors.

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WAY FORWARD:

- **Conduct a Reliable Caste Census:**
  - A caste Census is essential to address the gaps in welfare policies. To make it effective, the government should first create a uniform caste registry to ensure accuracy and avoid the inconsistencies seen in previous attempts.
- **Ensure Fair Distribution of Benefits:**
  - Introduce subcategorization within reserved groups to ensure that benefits reach the most marginalized communities instead of being concentrated among a few dominant groups.
- **Add an Economic Filter:**
  - Make economic status a key factor in reservation policies to ensure that only those who genuinely need support benefit, moving beyond caste as the sole criterion.
- **Prioritize Structural Reforms:**
  - Focus on improving access to quality education, healthcare, and skill development. These reforms will empower disadvantaged groups, reducing the overreliance on reservations as a tool for upliftment.
- **Increase Awareness and Access:**
  - Run awareness campaigns to inform marginalized communities about their rights and simplify the process to access benefits, especially for those in remote and underserved areas.
- **Promote Development Over Reservations:**
  - Tackle the root causes of inequality by fostering economic growth, creating jobs, and modernizing agriculture. A strong economy will reduce the demand for reservations by offering better opportunities to everyone.
- **Avoid Divisive Outcomes:**
  - Take proactive measures to prevent societal polarization that could arise from a caste Census. Encouraging dialogue and ensuring the data is used for welfare, not politics, will help maintain harmony.

CONCLUSION:

- A caste Census is a critical step towards addressing inequalities and making policies more inclusive. However, its success depends on coupling it with broader reforms in education, economy, and governance. By balancing the realities of caste with the vision of unity and development, India can pave the way for a more just and equitable society.

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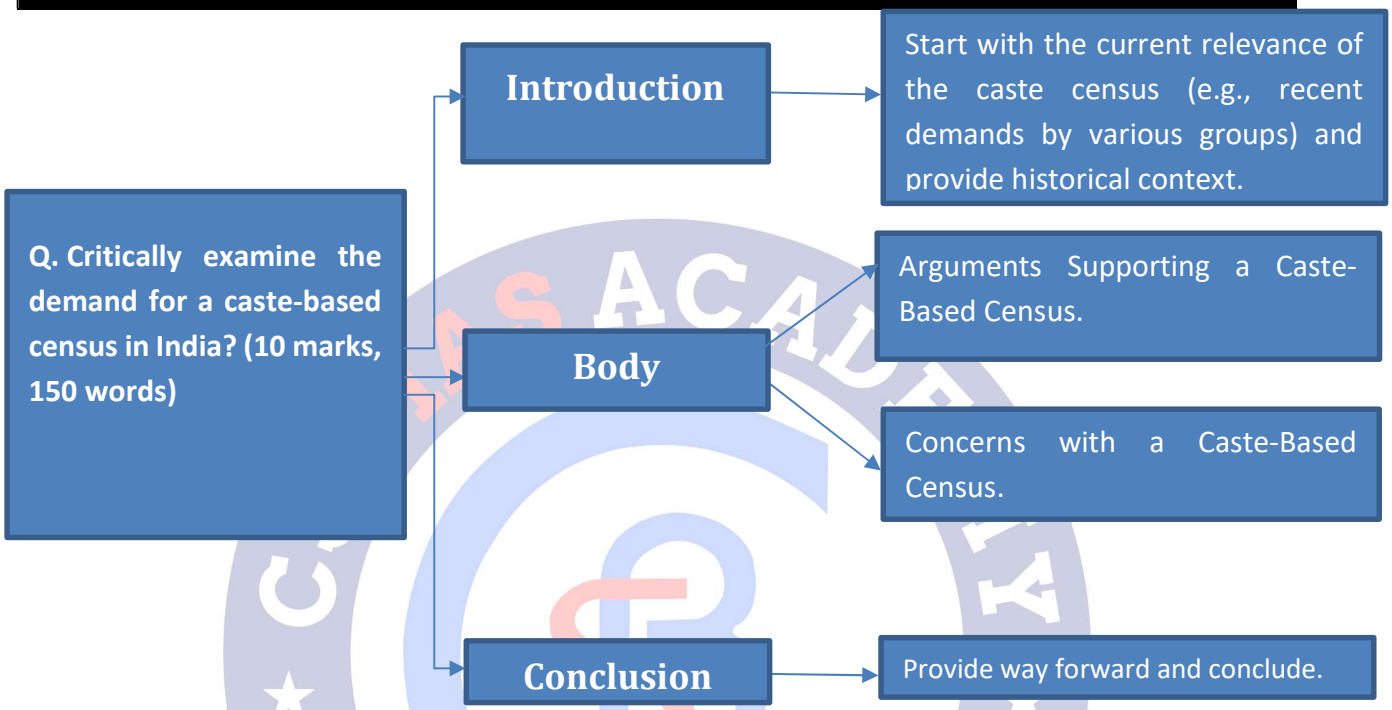
PRACTICE QUESTION

Q. Critically examine the demand for a caste-based census in India? (10 marks, 150 words)

APPROACH



MODEL ANSWER

The call for a caste-based census in India has gained significant traction in recent times, supported by political leaders, NGOs, and even organizations like the Rashtriya Swayamsevak Sangh (RSS). While caste data collection ceased after the 1931 Census, with exceptions for SC/ST data, **the Socio-Economic Caste Census (SECC) conducted in 2011 aimed to bridge this gap.** However, while the socio-economic data from SECC was finalized and published in 2016, **the caste data remains unreleased.** Advocates argue that a caste census is crucial to address socio-economic inequalities, while opponents highlight its potential risks and divisive impact.

Arguments Supporting a Caste-Based Census

1. **Step Towards a Casteless Society**: Mapping caste-based socio-economic conditions can help identify and address caste-derived privileges, a vital step toward reducing inequalities.

2. **Filling the Data Gap**: Estimates of the OBC population range widely—from 41% (NSSO, 2007) to 52% (Mandal Commission). Reliable data is necessary for crafting evidence-based policies.

3. **Rationalizing Reservations**: SC/ST reservations are aligned with population data, but OBC quotas lack a similar basis. A caste census could provide the clarity needed for equitable distribution.

4. **Addressing Inequality**: India's wealth disparity is stark—while the top 10% hold 57% of the national income, the bottom 50% share just 13% (World Inequality Report, 2022). Accurate data can guide better targeting of welfare programs.

5. **Equitable Welfare Distribution**: The SECC (2011) revealed that dominant OBC groups monopolized most reservation benefits. Sub-categorization informed by caste data can help reach the most marginalized.

Concerns with a Caste-Based Census

1. **Reinforcing Caste Identities**: Critics fear that a caste census could entrench caste divisions, making them more rigid, much like what happened during British rule.

2. **Political Polarization**: The census could rekindle Mandal-era politics, leading to competing demands for reservations and social unrest.

3. **Challenges of Caste Mobility**: Upward or downward misreporting of caste for social or economic advantages undermines the reliability of census data.

4. **Logistical Complexities**: A lack of a uniform caste registry risks inflating caste categories, as seen in the 2011 SECC, which identified an impractical number of castes.

5. **Risk of Violence**: Historical experiences, such as the protests during the implementation of the Mandal Commission recommendations, highlight the potential for social conflicts.

Way Forward

1. **Uniform Caste Registry**: Create a standardized registry to ensure accuracy and avoid previous inconsistencies.

2. **Sub-Categorization**: Address inequities within reserved categories by ensuring benefits reach the most deprived communities.

3. **Integrate Economic Criteria**: Use economic indicators alongside caste data to create a more equitable welfare framework.

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4. **Structural Reforms**: Focus on empowering marginalized groups through education, healthcare, and skill development, reducing dependency on reservations.

5. **Prevent Polarization**: Ensure the data is used exclusively for policy-making and welfare, avoiding any misuse for political purposes.

A caste-based census holds immense potential to uncover socio-economic realities and shape inclusive welfare policies. However, its success hinges on careful planning, robust structural reforms, and measures to safeguard social harmony. By addressing these challenges, India can use the census as a tool to build a more just and equitable society while advancing its vision of unity and development.

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15. INDIA-KUWAIT RELATIONS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations >> Bilateral Relations

REFERENCE NEWS:

Addressing the Indian diaspora at the **'Hala Modi' event** in Kuwait, Prime Minister Narendra Modi said that **India has the skill, technology, innovation and manpower** that the "**new Kuwait**" needs. He said the two countries are connected with the bonds of the heart. The Prime Minister noted during the address that it was after 43 years that an Indian prime minister has visited the country.

EVOLUTION OF INDIA-KUWAIT RELATIONS:

India and Kuwait enjoy **traditionally friendly relations**, which are rooted in history and have stood the test of time. India has been a natural trading partner of Kuwait and **until 1961 Indian Rupee was the legal tender in Kuwait**.

Historical Foundations: From Cultural Links to Formal Ties

- **Civilizational Connect**: The India-Kuwait relationship traces back to **civilizational ties** through trade during ancient times, with Indian spices, textiles, and pearls being traded for Kuwaiti dates and pearls.
- **Post-Independence Formalization**: India recognized Kuwait upon its independence in 1961, establishing **bilateral diplomatic relations**. Kuwait was among the first Gulf countries to extend support to India during its post-independence economic rebuilding.

Defence and Strategic Cooperation

- **Security and Counterterrorism**: India and Kuwait cooperate on **counterterrorism**, maritime security, and intelligence sharing to combat regional threats.

Humanitarian and Multilateral Engagements

- **Humanitarian Assistance**: During the COVID-19 pandemic, India provided Kuwait with **"Vaccine Maitri"** support, including vaccines, medical supplies, and healthcare workers. Kuwait reciprocated by sending oxygen supplies to India during the second wave of the pandemic.

- **Multilateral Forums**: Both countries engage actively in multilateral platforms like the **United Nations (UN)**, **Non-Aligned Movement (NAM)**, and **Indian Ocean Rim Association (IORA)**, advocating for global peace and regional stability.

Contemporary Engagements

- **Recent Developments**: The signing of agreements on **investment promotion**, **renewable energy**, and **cybersecurity** marks the shift toward a **comprehensive strategic partnership**. In 2022, India and Kuwait initiated high-level consultations on climate change and green energy cooperation.

SIGNIFICANCE OF INDIA-KUWAIT RELATIONS:

Political Significance

- **Strong Bilateral Relations**: Diplomatic relations between India and Kuwait were established in 1961, following Kuwait's independence. Regular high-level visits and engagements have reinforced mutual respect and cooperation.
    - In 2021, External Affairs Minister S. Jaishankar visited Kuwait to commemorate 60 years of diplomatic ties and signed agreements on labour mobility and cooperation.
- **Support in Multilateral Forums**: Kuwait has consistently supported India's aspirations in global platforms like the **United Nations**, including backing India's candidacy for a non-permanent seat in the UN Security Council.

Economic Significance

- **Energy Security**: Kuwait is **India's sixth largest crude supplier** and **fourth largest LPG supplier**, meeting **3% of the country's energy needs.** As India emerges as the world's third largest energy, oil and LPG consumer, and Kuwait holds around 6.5% of global oil reserves, the scope for further collaboration is immense.
    - Kuwait Petroleum Corporation collaborates with Indian oil companies to support refinery upgrades and petrochemical projects.
- **Strategic Economic Interdependence**: India is among Kuwait's top trading partners and **two-way trade was worth $10.47 billion during 2023-24**. Energy is an important pillar of bilateral ties and it reflects the deep trust and mutual benefit underpinning the partnership between the two sides. Kuwait benefits from India's **pharmaceutical diplomacy**, with Indian companies meeting a substantial portion of its medicine demands.

- **Remittances**: Over **1 million Indians** in Kuwait contribute significantly to India's economy through remittances, amounting to billions annually.

Strategic Significance

- **Maritime Security**: Located in the Gulf, Kuwait plays a vital role in ensuring the security of oil trade routes, aligning with India's **SAGAR (Security and Growth for All in the Region)** policy.
- **Regional Stability**: As a Gulf Cooperation Council (GCC) member, Kuwait's stability is crucial for India's energy and expatriate interests. India's neutral stance in Gulf conflicts, including the Qatar crisis, reflects its strategic balancing act, preserving ties with Kuwait and other Gulf nations.

Cultural Significance

- **Diaspora Diplomacy**: Over **1 million Indian expatriates** reside in Kuwait, forming the largest expatriate community in the country. Indian workers contribute significantly to Kuwait's economy, particularly in sectors like construction, healthcare, and services. For example, the Gulf Spic Labour Camp, where more than 90% inhabitants are Indians.
- **Cultural Agreements**: India and Kuwait have signed agreements promoting cultural exchanges and people-to-people ties, strengthening their bilateral bond.
    - Cultural events like '**Splendors of India'** and 'Namaste Kuwait' were held in 2022. A 'Festival of India' was held in Kuwait in March 2023 under the aegis of Ministry of Culture, India.
- There are 26 Schools in Kuwait following CBSE curriculum with over 60,000 students, mainly Indians and some Arab and South Asian expats as well. '**India Corners'** were setup in Gulf University for Science and Technology (GUST), Kuwait Technical College, and Kuwait College of Science and Technology in 2024.

Technological Significance

- **Collaboration in Digital Transformation**: India's expertise in IT and digital services offers avenues for collaboration in Kuwait's digital transformation initiatives. Indian IT firms are increasingly offering solutions in Kuwait for banking, healthcare, and infrastructure.
    - India and Kuwait signed an S&T Agreement in April 2009. Director General of Kuwait Institute of Scientific Research (KISR) led a two-member delegation to India in 2019 and held fruitful discussions with various research institutions, including ISRO, CSIR, and IISC.

Defence Significance

- **Gulf War Evacuation**: During the 1990-91 Gulf War, India conducted the world's largest evacuation, rescuing over **170,000 nationals** from Kuwait. This operation highlighted India's commitment to its diaspora and enhanced its image globally.
- **Defence Training**: Kuwaiti defence personnel receive training at Indian military institutions, showcasing growing defence ties.

CHALLENGES IN INDIA-KUWAIT RELATIONS:

Labor Rights and Expatriate Concerns

- **Exploitation of Indian Workers**: Indian workers, particularly in the construction and domestic sectors, often face exploitation, including delayed wages, poor working and living conditions, and limited labour rights.
    - 45 Indian migrant workers died in a fire in a residential building packed beyond capacity in Mangaf city of Kuwait in June 2024. The building is said to lack adequate safety provisions.
- **Kafala System**: Kuwait's **kafala system** ties foreign workers to their employers, restricting their mobility and increasing vulnerability to exploitation.
- **Impact of Workforce Nationalization**: Kuwait's **Kuwaitization** policy aims to reduce dependence on expatriate workers, posing challenges for Indian labour, which constitutes a significant portion of the workforce. Recent moves to limit expat workers have led to job losses and uncertainty among the Indian diaspora.

Energy Transition Challenges

- **Dependence on Hydrocarbons**: India relies heavily on Kuwait for crude oil, with hydrocarbons dominating bilateral trade. However, India's push towards **renewable energy** and reduced fossil fuel imports could impact this energy-driven relationship.
    - India's ambitious target of achieving 50% of its energy from renewable sources by 2030 could reduce oil imports from Kuwait.
- **Kuwait's Economic Diversification**: Kuwait's efforts to diversify its economy under **Vision 2035**, reducing reliance on oil exports, may alter trade dynamics with India.

Geopolitical and Regional Tensions

- **Gulf Instability**: Kuwait's proximity to conflict zones and its role in the volatile Gulf region expose India to risks, including potential disruptions in energy supplies and risks to expatriates.
    - The 1990-91 Gulf War highlighted the vulnerability of Indian nationals in Kuwait, requiring a large-scale evacuation. Also the recent escalations in Syria, Israel-Palestine etc are apprehensive to Indian diaspora.
- **Tensions within the GCC**: Intra-GCC tensions, such as the **Qatar blockade (2017-2021)**, challenge India's neutral stance, requiring diplomatic balancing to maintain ties with Kuwait and other Gulf nations.
- **Strain from Global Alignments**: Kuwait's alignment with Arab League positions on issues like Palestine occasionally contrasts with India's growing ties with Israel, requiring careful diplomacy.

Policy Asymmetries and Bureaucratic Hurdles

- **Complex Labor Migration Policies**: Lengthy bureaucratic processes for work visas and lack of streamlined labour agreements create hurdles for Indian workers seeking employment in Kuwait.
- **Trade Barriers**: Despite significant trade volumes, non-oil trade remains underdeveloped due to regulatory barriers and lack of diversification in traded goods. Limited Indian exports in value-added sectors like IT and machinery indicate untapped potential.
- **Lack of Comprehensive Agreements**: The absence of robust agreements on areas like cybersecurity, renewable energy, and digital transformation limits the scope of cooperation.

Cultural and Social Challenges

- **Integration of the Diaspora**: The large Indian diaspora often faces challenges in integrating into Kuwaiti society due to cultural differences and restrictions on civil liberties.
    - Reports of discrimination against expatriates, including Indians, during the COVID-19 pandemic, highlighted societal tensions.
- **Negative Perception**: Isolated incidents of labour strikes or non-compliance by Indian workers can lead to negative perceptions, affecting diplomatic goodwill.

Climate Change and Environmental Concerns

- **Impact of Climate Policies**: Both countries face challenges in aligning their economic and energy strategies with global climate commitments.
    - Kuwait's reliance on oil exports and India's energy transition require recalibrated trade and investment strategies to meet climate goals.

WAY FORWARD FOR MUTUALLY BENEFICIAL AND SUSTAINABLE INDIA-KUWAIT RELATIONS

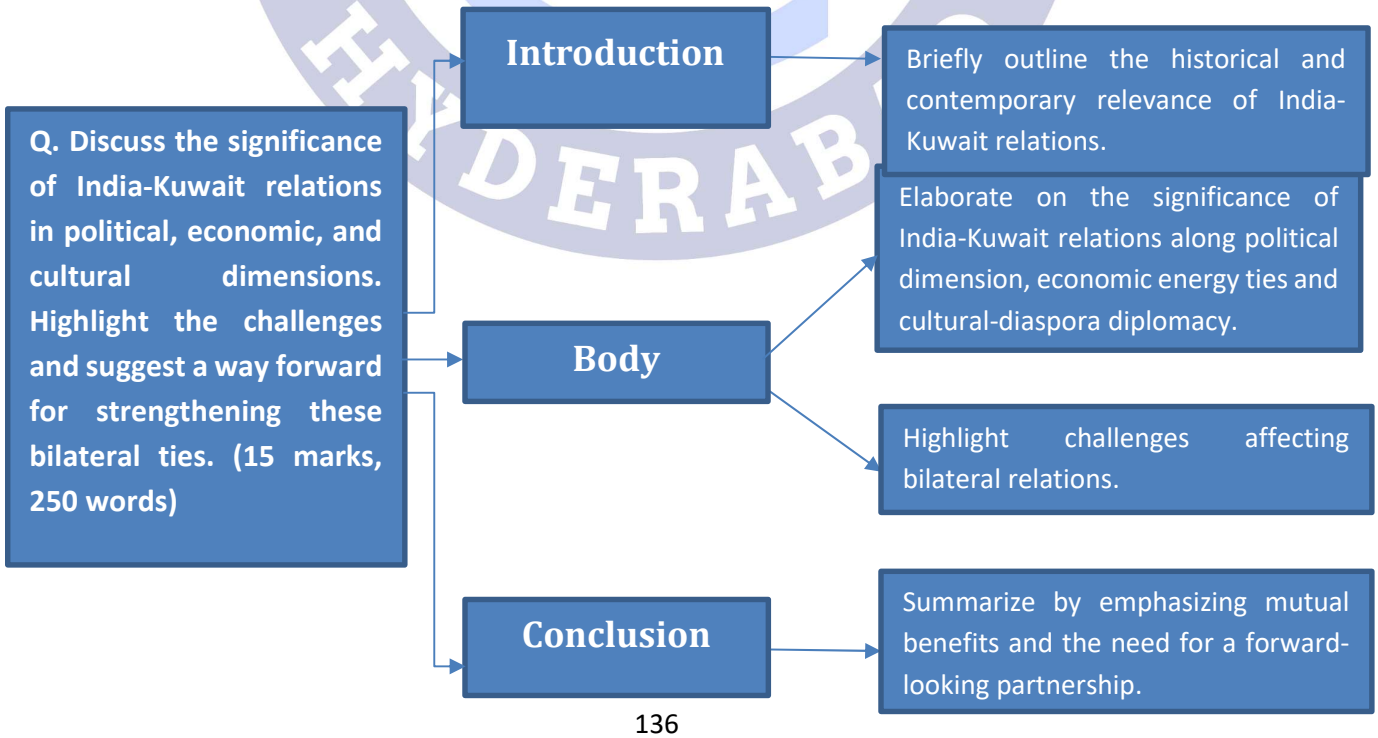
- **Diversification of Trade:** Move beyond hydrocarbons to diversify trade into sectors like pharmaceuticals, IT, renewable energy, and agriculture. Establish a **Bilateral Economic Partnership Council** to identify and promote non-oil trade opportunities.
- **Boosting Investments:** Encourage Kuwaiti investments in India's **infrastructure**, **smart cities**, and **renewable energy** projects. Facilitate Indian companies' participation in Kuwait's **Vision 2035** development plans, particularly in technology and healthcare. Joint ventures in green hydrogen and solar power could align with global climate goals.
- **Digital Collaboration:** Expand partnerships in **cybersecurity**, **artificial intelligence**, and **fintech** to meet Kuwait's digital transformation goals. Sign an **India-Kuwait Digital Cooperation Agreement** to enhance IT exports and build tech ecosystems.
- **Reforming the Kafala System**: Work towards labour reforms that ensure better mobility, fair wages, and improved rights for Indian workers in Kuwait. A labour welfare framework modelled on the **India-UAE labour cooperation agreement** can improve conditions for Indian expatriates.
- **Skill Development Initiatives:** Launch joint programs for **skill development** in sectors like construction, healthcare, and digital services to align the Indian workforce with Kuwait's requirements. Establish a **Skill Training and Certification Hub** in India for potential workers headed to Kuwait.
- **Social Security Framework:** Negotiate a **bilateral social security agreement** to provide expatriate workers access to pensions and healthcare benefits.
- **Energy Security and Transition**: Secure long-term agreements for crude oil and LNG supplies to ensure India's energy security. Expand Kuwaiti investments in Indian refineries and petrochemical complexes. Leverage India's expertise in solar and wind energy to support Kuwait's energy transition goals under **Vision 2035**.
- **Enhance Maritime Security Cooperation:** Strengthen naval collaborations to ensure the safety of oil trade routes and counter maritime threats in the Gulf region. Conduct **joint naval exercises** under the framework of India's **SAGAR (Security and Growth for All in the Region)** policy.

- **Cultural and People-to-People Ties:** Strengthen cultural diplomacy through events showcasing Indian arts, cuisine, and films in Kuwait and vice versa. Establish a **Kuwait-India Cultural Forum** to promote dialogue and collaboration in arts and heritage.
- **Tourism Cooperation:** Promote tourism through eased visa policies and direct connectivity, encouraging travel for both business and leisure. Introduce **India-Kuwait Tourism Festivals** to highlight cultural attractions.
- **Addressing Geopolitical Challenges:** Continue India's neutral stance in Gulf conflicts, ensuring balanced ties with all GCC nations while prioritizing Kuwait's partnership. Collaborate in multilateral forums like the **United Nations**, **Non-Aligned Movement (NAM)**, and **Indian Ocean Rim Association (IORA)** to address regional and global challenges. Support Kuwait's mediation efforts in GCC disputes, reflecting shared values of peace and stability.
- **Climate Change and Environmental Sustainability:** Jointly work on sustainable development projects and contribute to global climate action commitments. Develop a **Green Energy Task Force** to explore innovative solutions for carbon neutrality.

PRACTICE QUESTION

Q. Discuss the significance of India-Kuwait relations in political, economic, and cultural dimensions. Highlight the challenges and suggest a way forward for strengthening these bilateral ties. (15 marks, 250 words)

APPROACH



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MODEL ANSWER

India and Kuwait share a historical relationship, rooted in ancient trade ties and reinforced by mutual cooperation over the decades. From being a crucial energy supplier to hosting over one million Indian expatriates, Kuwait is an indispensable partner for India. With the Prime Ministerial visit to Kuwait after 43 years, Kuwait-India relations are stronger with India supplying tech, skill and manpower to the country.

SIGNIFICANCE OF INDIA-KUWAIT RELATIONS:

1. **Political Dimension:**
    - **Strong Diplomatic Relations**: Established formal ties in 1961 after Kuwait's independence. Regular high-level engagements, such as the **2021 visit of External Affairs Minister S. Jaishankar**, have fostered deeper collaboration.
    - **Support in Multilateral Forums**: Kuwait has backed India's candidacy for a non-permanent seat in the **UN Security Council**. Both nations advocate for global peace through platforms like the **Non-Aligned Movement (NAM)** and **Indian Ocean Rim Association (IORA)**.
2. **Economic and Energy Ties:**
    - **Energy Security**: Kuwait is India's sixth-largest supplier of crude oil and fourth-largest supplier of LPG, meeting nearly 3% of India's energy needs. Collaborative projects between **Kuwait Petroleum Corporation** and Indian oil companies strengthen energy infrastructure.
    - **Trade Relations**: Bilateral trade in 2023-24 exceeded **$10.47 billion**, with hydrocarbons dominating but opportunities in pharmaceuticals and IT expanding.
3. **Cultural and Diaspora Diplomacy:**
    - **Indian Diaspora**: Indian expatriates form the largest foreign community in Kuwait, significantly contributing to its construction, healthcare, and services sectors.
    - **Cultural Initiatives**: Events like **'Namaste Kuwait'** and the **Festival of India (2023)** highlight India's soft power. The establishment of **India Corners** in Kuwaiti educational institutions promotes academic and cultural exchange.
    -

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CHALLENGES IN INDIA-KUWAIT RELATIONS:

1. **Labor Rights and Expatriate Concerns:** Exploitation of Indian workers under the **Kafala system**, restricting mobility and rights. Kuwait's **Kuwaitization policy** has led to job losses among expatriates.
2. **Energy Transition Issues:** India's push for renewable energy may reduce crude oil imports from Kuwait, affecting trade dynamics.
3. **Geopolitical Tensions:** Regional instability, such as the Gulf War and the Qatar blockade, exposes vulnerabilities for Indian expatriates and energy supplies.
4. **Policy and Bureaucratic Hurdles:** Lack of streamlined labour agreements and comprehensive pacts in cybersecurity and renewable energy.
5. **Cultural Integration Issues:**Reports of discrimination and societal tensions during crises like COVID-19 highlight the need for better integration of the diaspora.

WAY FORWARD:

1. **Economic Diversification:** Expand trade to include **IT, agriculture, and renewable energy**. Establish a **Bilateral Economic Partnership Council** to explore non-oil trade opportunities.
2. **Labour Reforms and Welfare:** Negotiate a **labour welfare framework** modelled on the India-UAE agreement to improve rights and conditions for workers. Establish a **Skill Training Hub** in India to align Indian workers with Kuwait's needs.
3. **Energy Collaboration:** Strengthen crude oil supply agreements while exploring joint ventures in **solar energy, green hydrogen**, and carbon capture technologies.
4. **Cultural and People-to-People Ties:** Promote tourism and cultural exchanges through **visa simplifications** and events like **India-Kuwait Tourism Festivals**. Establish a **Kuwait-India Cultural Forum** to foster mutual understanding.
5. **Defence and Strategic Engagement:** Conduct **joint naval exercises** under India's **SAGAR policy** to ensure maritime security. Enhance intelligence-sharing mechanisms for counterterrorism and cybersecurity.

India-Kuwait relations exemplify a blend of historical connections and modern aspirations. By addressing existing challenges through labour reforms, trade diversification, and strategic cooperation, both nations can strengthen their partnership. This will ensure a mutually beneficial relationship that aligns with their shared vision of sustainable development and regional stability.

16. SYRIAN CRISIS

iMPACT ANALYSIS

SYLLABUS:

GS 2 > International Relations > India and Global Regions > India & West Asia

REFERENCE NEWS:

- Recently, Bashar al-Assad, who had **ruled Syria since 2000**, was ousted by the Islamist rebel group **Hayat Tahrir al-Sham (HTS)**, marking a pivotal shift in the country's political landscape and ushering in an era of uncertainty.

THE SYRIAN CIVIL WAR:

- **Origins of the Civil War (2011):**
  - The Syrian civil war began in 2011 as part of the **Arab Spring**, with citizens demanding democratic reforms and economic justice.
  - **President Assad's authoritarian crackdown** on protests escalated tensions, igniting a full-blown conflict.
- **Diverse Stakeholders and Global Involvement:**
  - The war became a proxy battleground for international powers:
    - **Russia, Iran, and Hezbollah** backed Assad's regime.
    - **United States and Gulf countries** supported rebel factions.
  - Allegations of **chemical weapons** use by Assad's forces further inflamed international outrage.
- **Devastating Impact:**
  - The war displaced millions, devastated Syria's economy, and left cities in ruins.
  - Regional instability worsened with the rise of extremist groups like the Islamic State (ISIS).

REASONS FOR ASSAD'S OUSTING:

- **Internal Discontent and Governance Failures:**
  - Assad's governance, marked by **economic liberalization without social justice**, **deepened inequality** and alienated the lower strata.
  - Corruption and a lack of inclusive policies fueled dissatisfaction across social and economic lines.
- **Frozen Conflict and Rising Rebel Strength:**
  - After years of stalemated conflict, rebel groups like **Hayat Tahrir al-Sham (HTS)** regrouped and gained strength, waiting for the right opportunity.

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- The military's inability to defend key cities, such as Aleppo and Damascus, highlighted the regime's weakened position.

- **Shifting Regional Dynamics:**
  - Syria's traditional allies faced distractions:
    - **Russia:** Preoccupied with its war in Ukraine.
    - **Iran:** Strained by conflicts with Israel and the neutralization of Hezbollah.
  - **Turkey's support for HTS** gave the rebels a decisive edge, allowing them to consolidate power.
- **HTS's Strategic Pragmatism:**
  - Under leader **Abu Muhammad al-Jawlani**, HTS evolved into a **more politically focused group**, distancing itself from global jihadist organizations like al-Qaeda.
  - HTS capitalized on local grievances and promised stability, attracting support from various factions.
- **Immediate Context of Assad's Fall**
  - Assad's regime suffered significant setbacks in 2024, culminating in the fall of Aleppo and Damascus.
  - The Syrian military offered little resistance as HTS advanced, enabling Assad to flee to Russia.
  - HTS's leadership promised no reprisals against former officials, focusing on civilian protection and stability to gain legitimacy.

IMPLICATIONS OF THE ONGOING SYRIAN CRISIS ON INDIA:

- **Oil and Gas Sector:**
  - India has longstanding stakes in Syria's energy sector:
    - A **2004 agreement** between ONGC and IPR International for oil and gas exploration.
    - A joint venture between ONGC and China's CNPC, which secured a 37% stake in a Canadian firm operating in Syria.
  - With the political landscape in flux, these investments now face serious jeopardy.
- **Infrastructure Projects:**
  - The **$240 million Line of Credit** extended for Syria's **Tishreen Thermal Power Plant** and India's investments in IT and fertilizers may suffer delays or restructuring due to the ongoing instability.
- **Extremist Threats:**
  - HTS's Islamist agenda and the **potential resurgence of ISIS** pose serious risks to global and regional security.
  - This instability could indirectly affect India, particularly in terms of heightened terrorism and radicalization risks.

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- **Safety of Indian Diaspora:**
  - Over **9 million Indians** live and work in the Gulf and West Asia. Any spillover of unrest from Syria could endanger their safety and disrupt the region's economy, which heavily relies on their labor.
- **Supply Disruptions:**
  - West Asia is vital for India's oil and gas imports. Any escalation in Syria could disrupt these critical energy supplies.
  - Continued instability may drive global oil prices upward, straining India's economy and increasing import bills.
- **Ambitious Trade Corridors:**
  - India's plan to establish the **India-Gulf-Suez Canal-Mediterranean Corridor**, connecting South Asia to Europe via Syria, could be derailed, impacting its broader trade ambitions.
- **Iran's Diminished Position:**
  - Iran, a key regional ally and India's partner in projects like the **Chabahar Port**, has been weakened by its ongoing conflict with Israel and the decline of Hezbollah.
  - This could undermine regional stability, impacting India's West Asia strategy.
  - Iran's reduced influence could hinder India's connectivity projects, especially its plans to access Central Asia via **Chabahar Port**.
- **Implications for Israel-India Ties:**
  - A rise in anti-Israel sentiment under HTS could prompt Israeli military interventions in Syria.
  - While India's defense ties with Israel remain strong, such actions might complicate India's position in the region.
- **Engaging the New Syrian Leadership:**
  - India's historical ties with Assad's regime and its **non-interference policy** may face scrutiny as the new regime consolidates power.
  - Balancing old relationships while forging new ones will require strategic diplomacy.
- **Turkey's Growing Role:**
  - Turkey's support for HTS has strengthened its influence in the Syrian political landscape.
  - However, Ankara's recent decision to avoid raising the **Kashmir issue** at the UN offers a window for improved India-Turkey relations.
- **Strengthening Relations with Arab States:**
  - Arab nations share India's concerns about regional stability. Collaborating with them can help India advocate for peace and mitigate risks to its interests.

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- **Broader Regional Integration:**
  - Prolonged unrest in Syria may slow India's efforts to strengthen trade and connectivity networks across West Asia.

WAY FORWARD: INDIA'S RESPONSE TO THE ONGOING SYRIAN CRISIS:

The ousting of Bashar al-Assad and the rise of Hayat Tahrir al-Sham (HTS) in Syria demand a measured and strategic approach from India. To safeguard its interests and navigate the complexities of the crisis, India must take proactive steps across multiple fronts.

- **Building Ties with the New Leadership:**
  - While maintaining its historical relationship with Syria, India should engage constructively with the emerging leadership. Open dialogue can help ensure that India's investments and strategic goals remain secure.
  - Advocate for a stable and inclusive political process that respects Syria's sovereignty and territorial integrity.
- **Collaborating with Arab Nations:**
  - Leverage partnerships with **Gulf countries** like Saudi Arabia and the UAE, which share India's concerns about stability in the region. These alliances can help shape a more peaceful outcome in Syria.
- **Sustaining Iran Ties:**
  - Despite Iran's challenges, India should continue to deepen cooperation, particularly around **Chabahar Port** and access to Central Asia.
  - Support diplomatic measures to help stabilize Iran while avoiding entanglement in regional rivalries.
- **Managing Israel's Interests:**
  - India's strong defense and technology ties with Israel need careful handling as the crisis evolves. Encouraging restraint from Israel in its military interventions in Syria can contribute to regional stability.
- **Safeguarding Investments:**
  - Monitor developments closely to assess the impact on key projects, including the Tishreen Thermal Power Plant and trade corridor plans.
  - Consider multilateral collaborations to protect and revive economic partnerships in Syria.
- **Ensuring Energy Security:**
  - Diversify energy imports to reduce reliance on volatile West Asian markets, mitigating risks of disruptions and price fluctuations.
- **Countering Extremism:**
  - Strengthen cooperation with regional allies to track and counter threats from HTS and the potential resurgence of ISIS.

- Bolster domestic counter-terrorism efforts to address any spillover of radicalization or extremist activities from the region.

- **Protecting the Indian Diaspora:**
  - Develop contingency plans to ensure the safety of over **9 million Indians** living in the Gulf and West Asia, prioritizing their welfare and security.
- **Pushing for Peace:**
  - Use platforms like the **United Nations** to back Syrian-led peace processes and advocate for a stable, inclusive resolution.
  - Promote international cooperation to prevent Syria from becoming a breeding ground for extremist activities.
- **Providing Humanitarian Support:**
  - Extend humanitarian aid and developmental assistance for Syria's rebuilding process, showcasing India's commitment to regional peace and stability.
- **Preserving Regional Projects:**
  - Work with partners like Iran and Central Asian countries to maintain momentum on connectivity initiatives like the **India-Gulf-Suez Canal Corridor**.
  - Explore alternative trade routes and diversify linkages to safeguard India's West Asia strategy from further disruptions.

CONCLUSION:

India's response to the Syrian crisis must be pragmatic and multi-dimensional. By engaging diplomatically, balancing relationships with key players, protecting investments, and addressing security challenges, India can secure its interests and play a constructive role in stabilizing the region. A forward-looking, collaborative approach will ensure that India emerges as a reliable and responsible global actor amidst the ongoing crisis.

PRACTICE QUESTION

Q. "Examine the implications of the ongoing Syrian crisis on India's strategic and economic interests in West Asia. Suggest measures to safeguard its national interests." (10 marks, 150 words)

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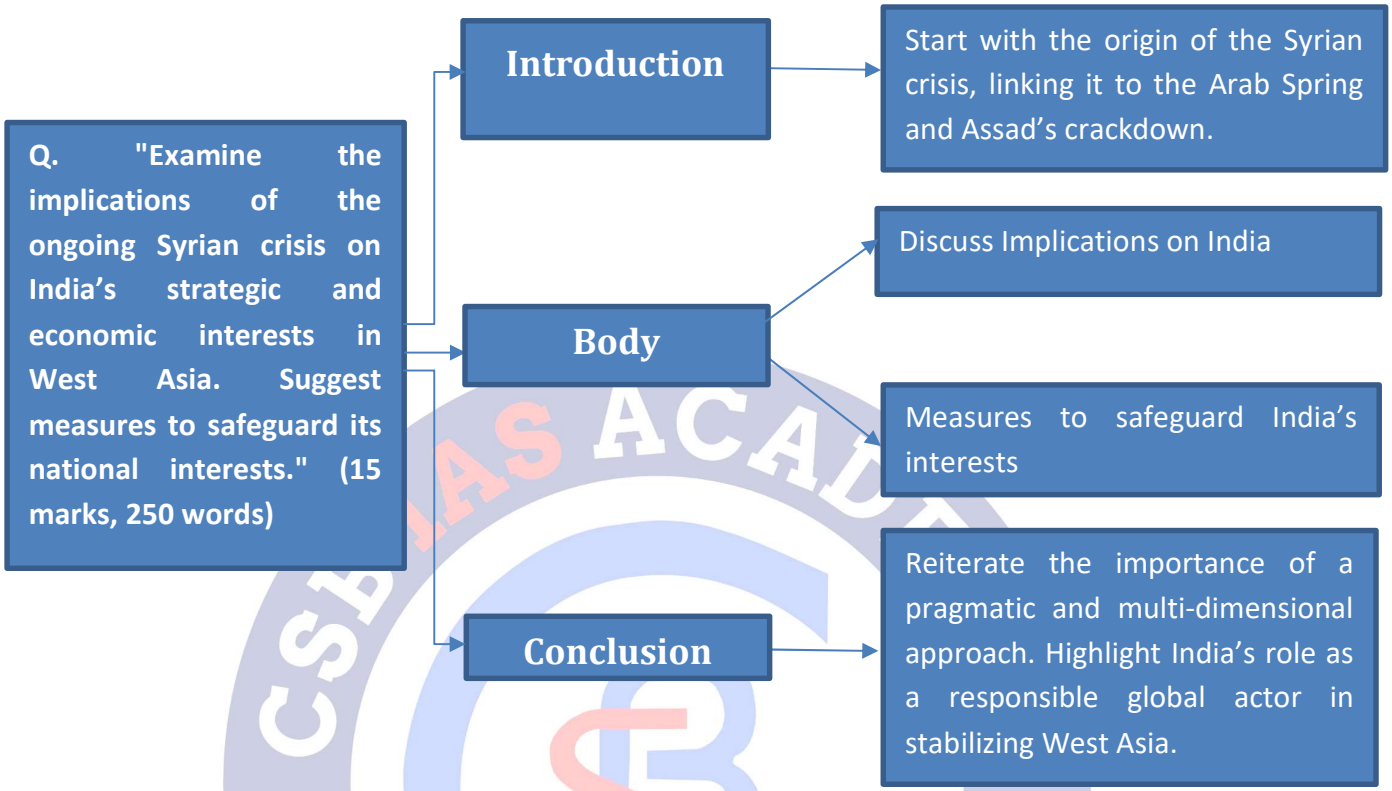
APPROACH



MODEL ANSWER

The Syrian crisis, originating **from the 2011 Arab Spring** protests demanding democratic reforms and economic justice, spiraled into a devastating civil war following President Bashar al-Assad's harsh crackdown on dissent. Assad's recent ousting by **the Islamist group Hayat Tahrir al-Sham (HTS)** has created a new wave of uncertainty, significantly impacting India's strategic and economic stakes in West Asia.

Implications of the Syrian Crisis on India:

Economic Impacts

- **Oil and Gas Sector**: Indian investments in Syria's energy sector, including ONGC's projects, are now at risk due to the political upheaval.
- **Infrastructure Projects**: Delays or restructuring of India's initiatives, such as the $240 million Tishreen Thermal Power Plant, are expected amid instability.
- **Trade Disruption**: Instability in Syria could derail India's ambitious trade projects, like the India-Gulf-Suez Canal-Mediterranean Corridor.

Security Concerns

- **Extremism and Terrorism**: The rise of HTS and the potential resurgence of ISIS amplify security risks for India, both regionally and globally.
- **Diaspora Safety**: Over 9 million Indians in West Asia could face threats from the ripple effects of the Syrian unrest.

Geopolitical Challenges

- **Shifting Alliances**: Iran's diminishing role impacts India's connectivity projects like Chabahar Port. Additionally, heightened anti-Israel sentiment complicates India's efforts to balance its relationships in the region.
- **Energy Security**: Any disruption in West Asian oil supplies could escalate global prices, straining India's economy.

Measures to Safeguard India's Interests:

Diplomatic Engagement

- India must constructively engage with HTS while maintaining its historical ties with Syria.
- Collaborating with Gulf allies like Saudi Arabia and UAE is crucial for promoting stability.

Strategic Partnerships

- Strengthening ties with Iran remains critical to sustaining connectivity projects and accessing Central Asia.
- Managing relations with Israel carefully can help India avoid unnecessary complications in the region.

Economic Diversification

- Diversify energy imports to reduce over-reliance on volatile West Asian markets.
- Protect existing investments through multilateral collaborations and proactive measures.

Counter-Terrorism Measures

- Strengthen cooperation with regional allies to counter extremist threats like HTS and ISIS.
- Enhance domestic security measures to mitigate any spillover effects.

Humanitarian Support

- Extend aid for Syria's reconstruction to position India as a reliable partner in regional stability.

The Syrian crisis, deeply rooted in the Arab Spring and now redefined by Assad's ousting, demands a nuanced approach from India. **A balance of strategic diplomacy, economic foresight, and proactive counter-terrorism efforts** will be essential for safeguarding India's national interests. Through a collaborative and forward-looking approach, India can contribute to the **stability of West Asia while bolstering its global standing.**

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GENERAL STUDIES-III

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17. INDIA STATE OF FOREST REPORT 2023

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment and Ecology >> Forest Resources

REFERENCE NEWS:

India's **net forest cover** has increased by 156.41 sq km between 2021 and 2023, as per the **2023 India State of Forest Report (ISFR),** taking the geographical area under forest cover to **21.76 per cent**, a paltry rise of 0.05 per cent compared to the 2021 assessment. Taking into account **tree cover**, which has increased by 1,285.4 sq km. The **total green cover** put together has increased by 1,445.81 sq km, compared to 2021, covering a geographical area of **25.17 per cent.**

The country has also lost old-growth forest and mangrove cover and saw a decline in forest cover across the Western Ghats.

INDIA STATE OF FOREST REPORT, 2023:

- The ISFR is brought out by the **Forest Survey of India (**FSI) on a **biennial basis** since 1987.
- FSI carries out in-depth assessment of the **forest and tree resources** of the country based on interpretation of Remote Sensing satellite data and field based National Forest Inventory (NFI), and the results are published in the ISFR.
- The India State of Forest Report 2023 is 18th such report in the series.
- The report contains information on **forest cover, tree cover, mangrove cover, growing stock, carbon stock in India's forests, instances of forest fire, Agroforestry,** etc.
- To present a detailed picture of the forest health at country level, special thematic information on forest cover and important characteristics of forests have been reported in the ISFR.
- As per the present assessment, the **total Forest and Tree cover** is 8,27,357sq km, which is **25.17 percent** of the geographical area of the country. The **Forest Cover** has an area of about 7,15,343sq km (**21.76%)** whereas the **Tree Cover** has an area of 1,12,014 sq km (**3.41%).**
- Top four states showing **maximum increase in forest and tree cover** are **Chhattisgarh** (684 sq km) followed by **Uttar Pradesh** (559 sq km), **Odisha** (559 sq km) and **Rajasthan** (394 sq km).
- Top three states showing **maximum increase in forest cover** are **Mizoram** (242 sq km) followed by **Gujarat** (180 sq km) and **Odisha** (152 sq km).

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- Area wise top three states **having largest forest and tree cover** are **Madhya Pradesh** (85,724 sq km) followed by **Arunachal Pradesh** (67,083 sq km) and **Maharashtra** (65,383 sq km).
- Area wise top three states having **largest forest cover** are **Madhya Pradesh** (77,073 sq km) followed by **Arunachal Pradesh** (65,882 sq km) and **Chhattisgarh** (55,812 sq km).
- In terms of **percentage of forest cover with respect to total geographical area**, **Lakshadweep** (91.33 percent) has the highest forest cover followed by **Mizoram** (85.34 percent) and **Andaman & Nicobar Island** (81.62 percent).
- **Inside Recorded Forest Areas** such as reserved and protected forests, the maximum increase was in Mizoram followed by Odisha, Karnataka, West Bengal and Jharkhand.
- The present assessment also reveals **that 19 states/UTs have above 33 percent of the geographical area under forest cover**. Out of these, eight states/UTs namely Mizoram, Lakshadweep, A & N Island, Arunachal Pradesh, Nagaland, Meghalaya, Tripura, and Manipur have forest cover above 75 percent.
- The extent of **bamboo bearing area** for the country has been estimated as 1,54,670sq km. As compared to the last assessment done in 2021 there is an **increase of 5,227 sq km** in bamboo area.
- The **total annual potential production of timber from trees outside forest** has been estimated as 91.51 million cum.
- In the present assessment **total carbon stock in country's forest** is estimated to be 7,285.5 million tonnes. There is an **increase of 81.5 million tonnes** in the carbon stock of country as compared to the last assessment.
- Regarding status on achievement of target under NDC related to carbon sequestration, the current assessment shows that India's carbon stock has reached 30.43 billion tonnes of CO_2 equivalent; which indicates that as compared to the base year of 2005, India has already reached **2.29 billion tonnes of additional carbon sink as against the target of 2.5 to 3.0 billion tonnes by 2030**.
- **Forest Fire:** The top three states with the most fire incidents in the 2023-24 season are **Uttarakhand, Odisha, and Chhattisgarh.**
- **Regional Performance:** The Western Ghats Eco-sensitive areas cover 60,285.61 km², with 44,043.99 km² (73%) under forest cover. The total forest and tree cover in the **Northeastern region** is 1,74,394.70 km^2, which is **67%** of the geographical area of these states.
- **Mangrove Cover:** India's mangrove cover is 4,991.68 km², representing **0.15%** of the total geographical area, with a **net decrease of** 7.43 km² since 2021. **Gujarat** saw a **decrease** of 36.39 km² in mangrove cover, while **Andhra Pradesh** and **Maharashtra** experienced increases of 13.01 km² and 12.39 km², respectively.

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- Tree cover refers to the **total area of land that is covered by trees, regardless of whether or not the trees** are part of a forest ecosystem. **Forest cover,** on the other hand, r**efers specifically to the area of land that is covered by a forest ecosystem**, which is defined as an area with a **tree canopy density of more than 10%** and an **area of more than 1 hectares.**

SIGNIFICANCE OF FOREST SURVEYS:

- **Assessing Forest Cover**: Forest surveys provide a comprehensive assessment of forest cover and its changes over time. This is crucial for understanding **deforestation, afforestation, and degradation trends.**
    - The 2023 ISFR report revealed that India has **7,13,789 sq. km of forest cover**, accounting for 21.71% of its geographical area.
- **Biodiversity Conservation**: Forest surveys help in identifying regions rich in biodiversity and those under threat. This aids in prioritizing conservation efforts.
    - Surveys have been instrumental in identifying biodiversity hotspots like the **Western Ghats** and **Northeast India**, leading to initiatives like Project Tiger and Elephant Corridors.
- **Climate Change Mitigation**: Forests act as carbon sinks, mitigating climate change. Surveys quantify the carbon stock and assess forest health, contributing to climate strategies.
    - According to ISFR 2023, India's forests sequestered an estimated **7,204 million tons of carbon**, aligning with India's commitment under the **Paris Agreement**.
- **Policy Formulation and Monitoring**: Data from forest surveys informs national policies and programs like the **National Afforestation Programme (NAP)** and **Green India Mission**.
    - Forest surveys highlighted a decline in mangrove cover in certain regions, prompting focused restoration efforts in states like **West Bengal** (Sundarbans) and **Andhra Pradesh**.
- **Addressing Human-Wildlife Conflicts**: By mapping forest habitats and corridors, surveys help mitigate human-wildlife conflicts and design wildlife-friendly infrastructure.
    - Surveys in Madhya Pradesh identified critical tiger corridors, leading to the construction of wildlife overpasses on highways near **Kanha National Park**.
- **Enhancing Livelihoods**: Forest surveys identify resources like Non-Timber Forest Products (NTFPs), which are crucial for the livelihoods of forest-dependent communities.
    - Surveys in **Chhattisgarh** and **Jharkhand** have led to better management of NTFPs like tendu leaves and sal seeds, benefiting tribal populations.

- **Monitoring Compliance with Laws**: Forest surveys ensure compliance with environmental regulations like the **Forest Conservation Act (1980)** and **Compensatory Afforestation** policies.
- **International Commitments**: India's forest surveys contribute to global frameworks such as the **United Nations Framework Convention on Climate Change (UNFCCC)** and **Sustainable Development Goals (SDGs)**.
    - The ISFR data is used for India's reporting on SDG Indicator **15.1.1** (forest area as a proportion of total land area).
- **Disaster Management**: Forest surveys assess forests' role in disaster mitigation, such as controlling soil erosion and acting as natural barriers against floods and cyclones.
    - Mangrove restoration projects in the Sundarbans were guided by survey data to protect against cyclones like **Amphan**.
- **Technological Advancements**: Forest surveys in India have embraced cutting-edge technologies like **remote sensing**, **GIS**, and **LiDAR**, improving accuracy and efficiency.

CHALLENGES TO INDIA STATE OF FOREST SURVEYS:

- **Lack of a Clear Definition of Forests**: There is ambiguity in defining what constitutes a forest. The government uses a broad definition that includes plantations and orchards but excludes community forests, leading to inconsistencies. This approach artificially inflates the forest cover statistics while masking the degradation of natural and biodiverse ecosystems. The inclusion of commercial plantations in forest cover reduces the ecological and carbon sequestration value of the forests.
- **Discrepancies in Forest Cover Data**: The 25% forest and tree cover figure, though seemingly robust, hides critical issues such as:
    - Loss of natural forests in the Western Ghats, Nilgiris, and the Northeast.
    - Shrinking mangroves in areas like Kutch and the Andamans.
    - Endangerment of open natural ecosystems.
- **Weak Carbon Sequestration Assessment**: The report lacks clarity on whether degraded lands' carbon sequestration potential accounts for their current usage and ecosystem value. Misleading data on carbon sinks could undermine India's climate commitments under the Paris Agreement.
- **Overemphasis on Plantations**: Compensatory afforestation often relies on monoculture plantations, which have lower ecological and biodiversity value and provide reduced carbon sequestration compared to natural forests. Replacement of biodiverse forests with plantations fails to replicate their ecological roles.
- **Inadequate Response to Forest Fires**: Reports of increased forest fire incidents, especially in northern districts, highlight shortages in human resources and lack of skills and

equipment to manage and control fires. Recurrent forest fires degrade forest health, biodiversity, and carbon sequestration capacities.

- **Poor Implementation of Forest Laws**: Laws like the Forest (Conservation) Act 1980 and the Forest (Rights) Act 2006 face challenges in implementation due to industrial development pressures and administrative decisions that weaken safeguards (e.g., the Forest (Conservation) Amendment Act 2023).
- **Data Distortion and Inventory Issues**: The government distorts official inventories by including low-value plantations while excluding community forests. This distorts the actual picture of forest health and misrepresents India's progress towards environmental sustainability goals.
- **Insufficient Ground-Truthing**: Remote sensing and satellite imagery dominate forest surveys, with limited on-ground verification. This leads to discrepancies between reported data and the actual status of forests, especially in areas affected by human activities.
- **Gaps in Financial and Human Resources**: A lack of investment in forest management and monitoring, insufficient funds for fire control and conservation and limited skilled personnel for field surveys and restoration efforts.
- **Neglect of Community Forests**: Excluding community forests from official inventories undermines local efforts in conservation and sustainable management. This disconnects forest-dependent communities from policy benefits and conservation incentives.

WAY FORWARD:

- **Strengthening Forest Definitions**: The **Kasturirangan Committee on Western Ghats** recommended classifying forests based on ecological sensitivity rather than broad definitions. Countries like **Finland** and **Brazil** adopt ecosystem-specific classifications in their forest inventories.
- **Enhancing Ground-Truthing**: The **National Forest Policy Draft 2018** emphasized the use of technology and on-ground verification. **Canada** employs a hybrid approach, integrating remote sensing with field-based surveys to maintain accuracy.
- **Strengthening Institutional Capacity**: The **Subramanian Committee on Environmental Laws** called for bolstering the capacity of forest departments and local institutions. **Germany's Nature Conservation Act** integrates well-funded local conservation bodies into national frameworks.
- **Leveraging Technology:** The **Gadgil Committee** advocated for geospatial technology and big data analytics in conservation planning. **Norway** uses AI and machine learning to predict forest growth patterns and assess biodiversity.
- **Empowering Communities**: The **N.C. Saxena Committee** emphasized participatory forest management through the implementation of the **Forest Rights Act (2006)**. **Costa Rica** has

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achieved remarkable reforestation by incentivizing local communities through Payments for Ecosystem Services (PES).

- **Promoting Natural Regeneration**: The **Compensatory Afforestation Management and Planning Authority (CAMPA)** suggested prioritizing natural regeneration over monoculture plantations. **Japan** uses native species for afforestation, which improves biodiversity and ecological resilience.
- **Addressing Forest Fires**: The **Partha Dasgupta Report on Biodiversity** stressed the need for proactive fire management strategies. **Australia** uses advanced fire monitoring systems and community fire management practices.
- **Reforming Policies and Safeguards**: The **Subramanian Committee** proposed stricter compliance with environmental laws. **United States** enforces stringent environmental impact assessments under the **National Environmental Policy Act (NEPA)**.
- **Integrating Biodiversity into Climate Policies**: The **National Action Plan on Climate Change (NAPCC)** calls for mainstreaming biodiversity conservation into climate action. The **EU Green Deal** integrates biodiversity conservation as a key pillar of climate action.
- **Financing and Incentives**: The **High-Level Committee on Environmental Regulation** suggested innovative financing for conservation efforts. The **UN REDD+ Program** incentivizes countries for reducing emissions from deforestation and forest degradation.

PRACTICE QUESTION

Q. The India State of Forest Report (ISFR) 2023 highlights the challenges and opportunities in forest governance and conservation in India. Mention the findings of the report and suggest a way forward for sustainable forest management. (15 marks, 250 words)

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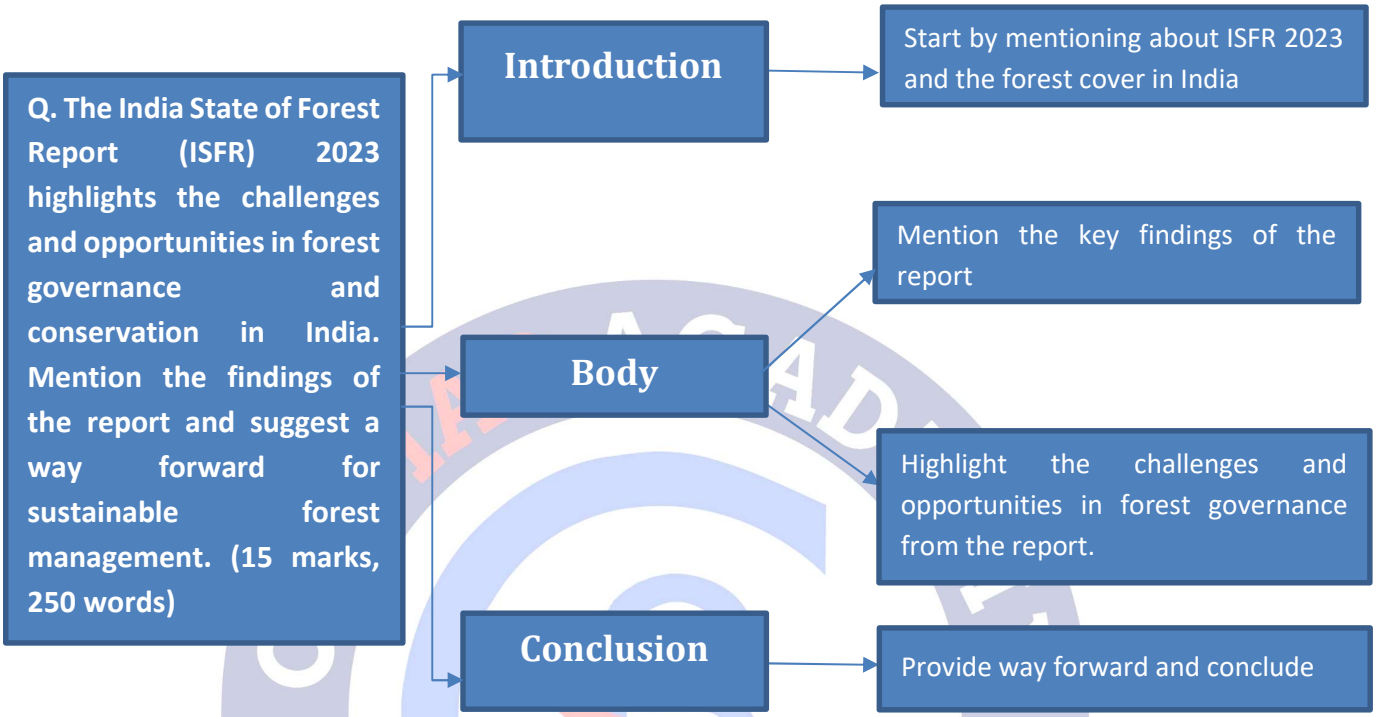
APPROACH



MODEL ANSWER

Forests play a pivotal role in ecological balance, climate regulation, and the livelihoods of millions. The ISFR 2023 reports that India's forest and tree cover has reached 25.17% of its geographical area, with a net increase of 1,445.81 sq km since 2021. However, this figure masks significant issues, including the degradation of old-growth forests, shrinking mangroves, and forest fires.

KEY FINDINGS OF ISFR 2023

1. **Positive Trends**:
    - Increase in forest and tree cover by 1,445.81 sq km.
    - Growth in bamboo-bearing area by 5,227 sq km.
    - Carbon stock increase of 81.5 million tonnes, contributing to India's climate goals under the Paris Agreement.

2. **Areas of Concern**:
    - Loss of forest cover in biodiversity-rich areas like the Western Ghats, Nilgiris, and Northeast India.
    - Decline of mangrove cover by 7.43 sq km, notably in Gujarat.
    - Increase in forest fire incidents, especially in Uttarakhand, Odisha, and Chhattisgarh.

CHALLENGES IN FOREST GOVERNANCE

- **Lack of a Clear Definition of Forests**: There is ambiguity in defining what constitutes a forest. The government uses a broad definition that includes plantations and orchards but excludes community forests, leading to inconsistencies.
- **Discrepancies in Forest Cover Data**: The 25% forest and tree cover figure, though seemingly robust, hides critical issues such as:
    - Loss of natural forests in the Western Ghats, Nilgiris, and the Northeast.
    - Shrinking mangroves in areas like Kutch and the Andamans.
    - Endangerment of open natural ecosystems.
- **Weak Carbon Sequestration Assessment**: The report lacks clarity on whether degraded lands' carbon sequestration potential accounts for their current usage and ecosystem value. Misleading data on carbon sinks could undermine India's climate commitments under the Paris Agreement.
- **Inadequate Response to Forest Fires**: Reports of increased forest fire incidents, especially in northern districts, highlight shortages in human resources and lack of skills and equipment to manage and control fires. Recurrent forest fires degrade forest health, biodiversity, and carbon sequestration capacities.
- **Poor Implementation of Forest Laws**: Laws like the Forest (Conservation) Act 1980 and the Forest (Rights) Act 2006 face challenges in implementation due to industrial development pressures and administrative decisions that weaken safeguards (e.g., the Forest (Conservation) Amendment Act 2023).
- **Insufficient Ground-Truthing**: Remote sensing and satellite imagery dominate forest surveys, with limited on-ground verification. This leads to discrepancies between reported data and the actual status of forests, especially in areas affected by human activities.

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OPPORTUNITIES OF FOREST GOVERNANCE THROUGH ISFR:

- **Biodiversity Conservation**: Forest surveys help in identifying regions rich in biodiversity and those under threat. This aids in prioritizing conservation efforts.
- **Climate Change Mitigation**: According to ISFR 2023, India's forests sequestered an estimated **7,204 million tons of carbon**, aligning with India's commitment under the **Paris Agreement**.
- **Policy Formulation and Monitoring**: Data from forest surveys informs national policies and programs like the **National Afforestation Programme (NAP)** and **Green India Mission**.
- **Addressing Human-Wildlife Conflicts**: By mapping forest habitats and corridors, surveys help mitigate human-wildlife conflicts and design wildlife-friendly infrastructure.
    - Surveys in Madhya Pradesh identified critical tiger corridors, leading to the construction of wildlife overpasses on highways near **Kanha National Park**.
- **International Commitments**: India's forest surveys contribute to global frameworks such as the **United Nations Framework Convention on Climate Change (UNFCCC)** and **Sustainable Development Goals (SDGs)**. The ISFR data is used for India's reporting on SDG Indicator **15.1.1** (forest area as a proportion of total land area).

WAY FORWARD

1. **Revise Definitions**: Adopt ecosystem-specific classifications as recommended by the **Kasturirangan Committee**. Align with global practices like Brazil's biome-based classification.

2. **Promote Natural Regeneration**: Prioritize native species over monoculture plantations, as practiced in Japan.

3. **Leverage Technology**: Integrate AI and machine learning for forest growth predictions, akin to Norway's approach. Use geospatial tools for real-time fire monitoring and biodiversity mapping.

4. **Empowering Communities**: Strengthen participatory governance under the **Forest Rights Act (2006)**, as recommended by the **N.C. Saxena Committee**. Introduce Payments for Ecosystem Services (PES), modeled on Costa Rica's success.

5. **Addressing Forest Fires:** Establish advanced fire monitoring systems, following Australia's community-based approach. Increase funding and equip forest departments with modern firefighting tools.

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6. **Policy Reforms and Safeguards**: Reassess the Forest (Conservation) Amendment Act 2023 to restore stringent safeguards. Ensure compliance with environmental impact assessments, drawing from the U.S. NEPA model.

7. **Enhancing Carbon Sequestration**: Expand afforestation under the **Green India Mission** with biodiversity-centric goals. Utilize international mechanisms like REDD+ for financial support.

The ISFR 2023 underscores the dual challenges of conserving biodiversity while meeting developmental goals. A sustainable path forward requires integrating robust definitions, community participation, and global best practices. By strengthening institutional capacity and leveraging advanced technologies, India can achieve a balance between ecological conservation and economic growth, fulfilling its national and international commitments.

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18. HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY 2023-24

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development >> Consumption Pattern

REFERENCE NEWS:

The **Ministry of Statistics and Programme Implementation** (MoSPI) decided to conduct two consecutive surveys on **household consumption expenditure** during 2022-23 and 2023-24, once situation normalized after the Covid-19 pandemic. The first survey was conducted during the period August 2022 to July 2023 and the summary results of the survey in the form of a factsheet was released in February 2024.

The fieldwork of the second survey on the subject has been undertaken during August 2023 to July 2024 throughout the entire country. The summary results of the Household Consumption Expenditure Survey: 2023-24 (HCES:2023-24) has been prepared at state and broad item groups level and is being released in the form of a factsheet.

HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY:

Household Consumption Expenditure Survey is considered under the category of a **socio-economic survey** conducted for all India **quinquennially** by **National Sample Survey Office under Ministry of Statistics and Programme Implementation.** Since 1972, NSSO has been conducting the Consumer Expenditure Survey.

- HCES is designed to collect information on **consumption and expenditure of the households** on goods and services.
- The survey provides data required to assess trends in economic well-being and to determine and update the **basket of consumer goods and services** and weights used for the calculation of the Consumer Price Index.
- Data collected in HCES is also used to measure **poverty, inequality, and social exclusion**.
- The survey also collects some auxiliary information on **household characteristics and demographic particulars of the households.** Information collected in HCES is useful for understanding **the consumption and expenditure pattern, standard of living and well-being of the households**.

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- The Monthly Per Capita Consumption Expenditure (MPCE) compiled from HCES is the primary indicator used for most analytical purposes. The estimates of MPCE of 2023-24 are based on the data collected from 2,61,953 Households (1,54,357 in rural areas and 1,07,596 in urban areas) in the central sample spread over all States and Union Territories in the country.
- As in HCES:2022-23, in HCES:2023-24 also two sets of estimates of MPCE have been generated: (i) **without considering imputed values of items received free of cost by the households through various social welfare programmes and** (ii) **considering imputed values of items received free of cost by the households through various social welfare programmes**.
- In the present survey, three 3 questionnaires were used, covering **food items, consumables and services items, and durable goods used.**
- The number of items covered has increased from 347 to 405 items.
- There have been changes in the **questionnaire of the survey.** Instead of a single questionnaire as used in earlier surveys, HCES 2022-23 introduced **four separate questionnaires** for food, consumables and services items, and durable goods. Thus, there have been **multiple visits for data collection** instead of the usual practice of a single visit in the earlier surveys.

IMPORTANT FINDINGS OF HOUSEHOLD CONSUMPTION SURVEY:

Rising Consumption Expenditure

- **Average Monthly Per Capita Expenditure (MPCE)**:
  - Rural: Rs. 4,122 (without imputation), Rs. 4,247 (with imputation).
  - Urban: Rs. 6,996 (without imputation), Rs. 7,078 (with imputation).
- **Growth Trends**: MPCE in 2023-24 increased by **9% in rural areas** and **8% in urban areas** compared to 2022-23, reflecting improved economic conditions and increased consumption capacity.
- **Rural-Urban Gap**: The urban-rural MPCE gap reduced from **84% in 2011-12** to **71% in 2022-23**, and further to **70% in 2023-24**, indicating a narrowing disparity in consumption levels.

Improved Consumption for Lower Income Groups

- **Higher Growth for Bottom Fractiles**: The **bottom 5% of the rural population** witnessed a **22% increase** in MPCE, while their urban counterparts saw a **19% rise**. This suggests

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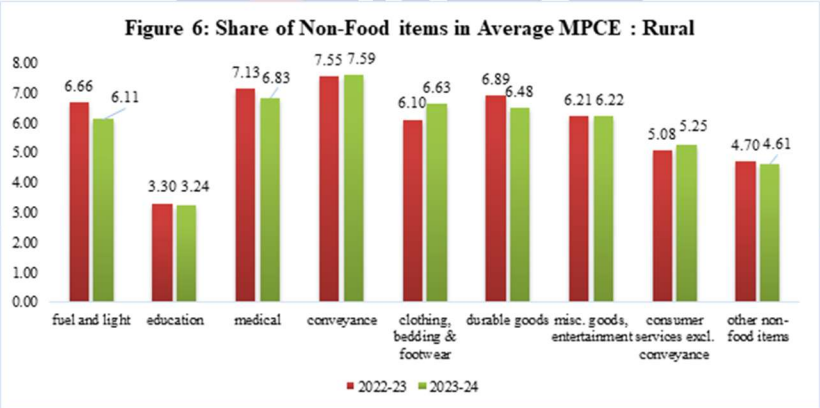
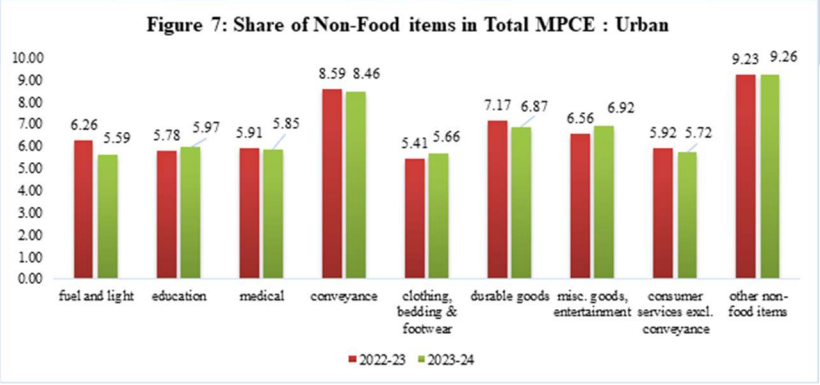
effective targeting of social welfare programs and a positive impact on the poorest sections of society.

Consumption Patterns: Food vs Non-Food

- **Non-Food Dominance**: Non-food items accounted for **53%** of rural MPCE and **60%** of urban MPCE. Major contributors: Conveyance, clothing, bedding, footwear, durable goods, and entertainment. Rent (7% of urban MPCE) remains a significant component of non-food expenditure.
- **Food Expenditure**: Beverages, refreshments, and processed food dominate the food basket. Milk and milk products, along with vegetables, follow as major contributors.





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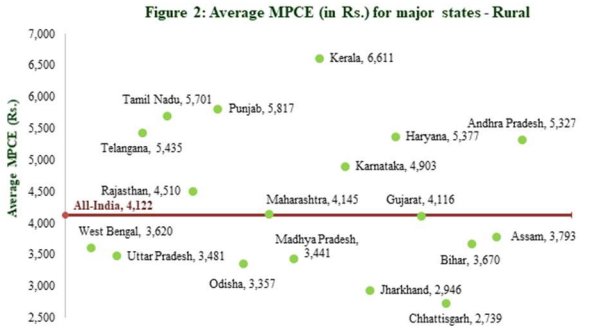
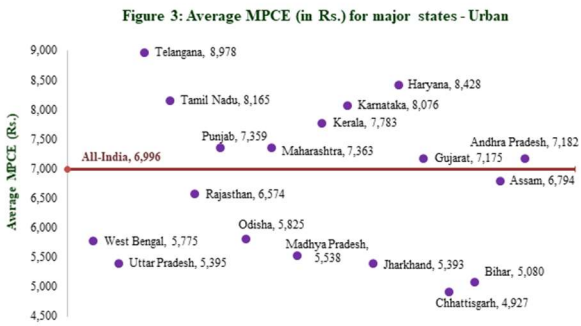
Regional Variations





- **Rural-Urban Gap**: Meghalaya (104%) has the highest rural-urban MPCE gap, followed by Jharkhand (83%) and Chhattisgarh (80%).

Declining Consumption Inequality

- **Gini Coefficient**:
  - Rural: Reduced from **0.266 (2022-23)** to **0.237 (2023-24)**.
  - Urban: Reduced from **0.314 (2022-23)** to **0.284 (2023-24)**.
  - This indicates a decline in consumption inequality across both rural and urban populations, reflecting greater economic inclusivity.

Impact of Social Welfare Programs

- **Free Items Imputation**: Inclusion of free items received through government programs increases MPCE figures, especially in rural areas. Programs like **PM-JAY** provide significant health benefits, but their imputed value is excluded due to complexities in estimation.

Focus on Durable Goods and Services

- **Durable Goods**: Significant contributors to non-food expenditure include clothing, footwear, and electronics like laptops, tablets, and mobile phones.
- **Healthcare**: Despite widespread health interventions like PM-JAY, complexities in imputing free healthcare costs leave gaps in MPCE estimates for health services.

Structural Shifts in Consumption Behaviour

- **Bottom-Up Growth**: Higher growth in MPCE for the poorest sections reflects improved livelihood opportunities and better targeting of subsidies and welfare schemes.

- **Non-Food Expenditure Rise**: Increased spending on durable goods, conveyance, and entertainment indicates lifestyle shifts and growing aspirations in both rural and urban areas.

State-Level Outliers

- **Sikkim** consistently emerges as the highest spender, showing high economic performance and development. **Chhattisgarh** has the lowest MPCE, highlighting persistent economic challenges in the region.

CHALLENGES OF THE SURVEY:

- **Recall Bias**: The survey relies heavily on respondents' memory to report expenditures, leading to inaccuracies, particularly for items purchased infrequently or in bulk. Recall periods of 30 days for food and 365 days for durable goods often result in underreporting or overreporting due to memory lapses.
- **Underestimation of Free and Subsidized Services**: Proper imputation of the value of items received free or at subsidized rates through welfare programs is difficult. Programs like **PM-JAY** (healthcare) or food grains under the **Public Distribution System (PDS)** may not be adequately captured.
- **Non-Response and Sample Coverage**: Some households may refuse participation or provide incomplete information, particularly in urban areas with higher mobility and privacy concerns. Wealthier households tend to underreport their consumption, leading to skewed data.
- **Challenges in Capturing Non-Food Expenditures**: Rising expenditure on non-food items like rent, education, healthcare, and durable goods is difficult to track comprehensively. Rent in urban areas forms 7% of MPCE but is often underreported or generalized.
- **Infrequent Surveys:** The HCES is conducted roughly every five years, leading to outdated data that may not reflect current consumption trends. Rapid economic changes, inflation, and evolving spending habits make older data less relevant for policy-making.
- **Digital and Informal Economy Challenges**: The rise of digital payments and informal consumption transactions are not fully captured by traditional survey methods. E-commerce and app-based services like food delivery are underrepresented in expenditure data.
- **Complexity in Estimating Consumption Inequality**: Accurately capturing inequality through metrics like the Gini coefficient requires granular data, which is often missing or generalized in the survey. The Gini coefficient showed a decline in inequality for 2023-24, but nuances like regional disparities or urban-rural divides might remain underexplored.

WAY FORWARD TO SEAL THE LOOPHOLES IN SOCIO-ECONOMIC SURVEYS:

- **Leveraging Technology for Real-Time Data Collection: Estonia** integrated its e-Governance system with socio-economic surveys, linking surveys with national databases for validation and cross-verification. Recommendations from the **Expert Group on Socio-Economic Indicators (2011)** advocate for a **digital-first approach** to improve data accuracy and timeliness.
- **Shorter Recall Periods and Mixed Recall Methodology**: **UK (Living Costs and Food Survey)** collects data using diary methods where participants record expenditures daily over a shorter recall period. Adopt the **Modified Mixed Recall Period (MMRP)**, as recommended by the **Tendulkar Committee**, for more accurate reporting of household consumption.
- **Incorporating Administrative Data**: **Nordic Countries** use tax, health, and social security records to supplement household surveys, reducing reliance on respondent memory.
- **Dynamic Sampling and Frequent Surveys: USA (Consumer Expenditure Survey)** conducted continuously with rotating panels to capture changing consumption patterns. **South Africa** implements quarterly household surveys to address seasonal and economic variations.
- **Enhanced Training and Capacity Building: Japan** conducts extensive training for numerators on survey techniques and respondent engagement. **Germany** uses standardized training modules for surveyors, ensuring uniformity in data collection. Expand capacity-building programs for enumerators and supervisors as recommended by the **C. Rangarajan Committee**.
- **Capturing Informal and Digital Economy: China** adapts surveys to include informal transactions, barter trade, and rural consumption through village-level enumerations.
- **Addressing Regional Disparities: Canada (National Household Survey)** employs region-specific oversampling to capture diverse socio-economic conditions. Oversample in tribal, remote, and underdeveloped regions to ensure their consumption patterns are adequately captured. Follow the **Suresh Tendulkar Committee** recommendation to focus on regional and caste-based inequalities.
- **Inclusion of Behavioural and Lifestyle Indicators**: **New Zealand** includes qualitative questions about well-being and lifestyle to complement quantitative expenditure data.
- **Triangulation with Big Data and Satellite Imagery: USA (Big Data Analytics)** uses big data for tracking economic trends, combining it with survey data for robust insights.

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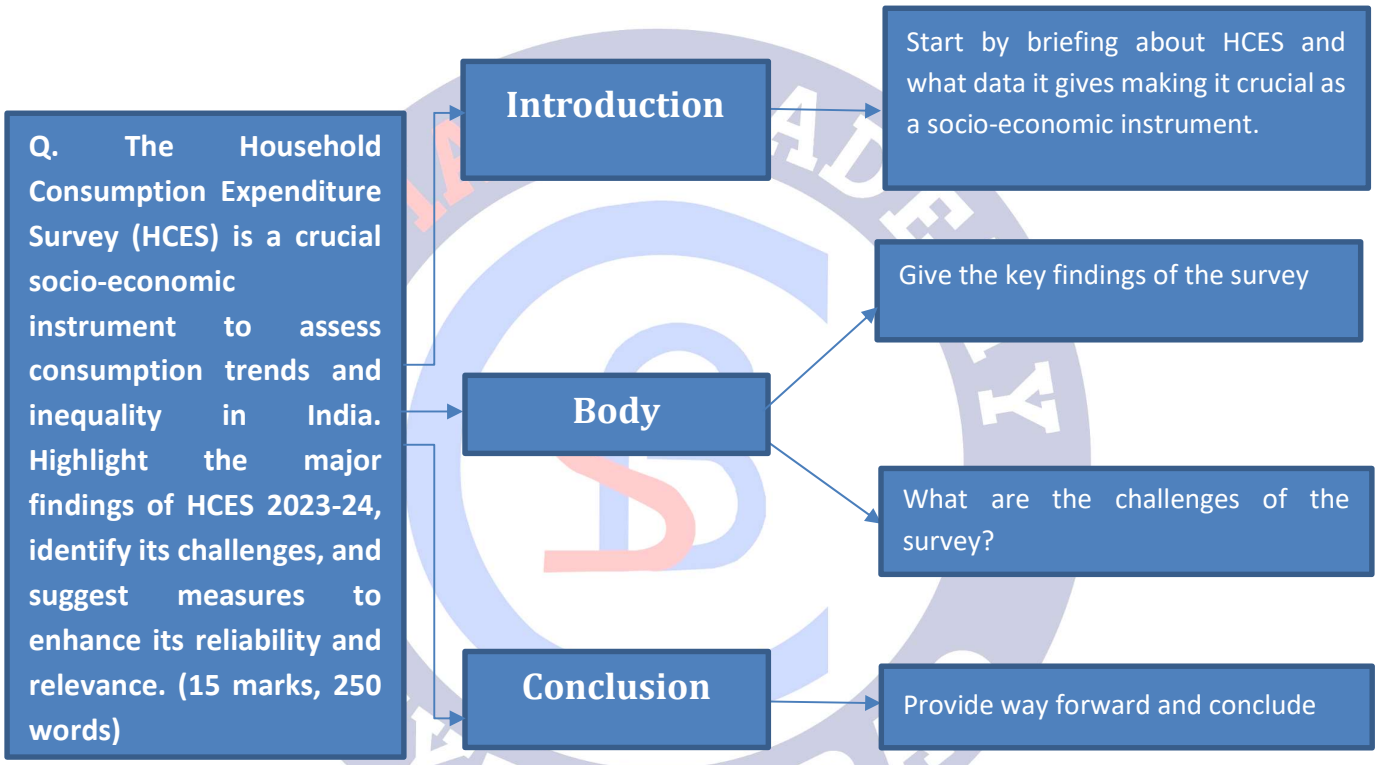
PRACTICE QUESTION

Q. The Household Consumption Expenditure Survey (HCES) is a crucial socio-economic instrument to assess consumption trends and inequality in India. Highlight the major findings of HCES 2023-24, identify its challenges, and suggest measures to enhance its reliability and relevance. (15 marks, 250 words)

APPROACH



MODEL ANSWER

The **Household Consumption Expenditure Survey (HCES)**, conducted by the National Statistical Office (NSO), provides critical data on consumption patterns, inequality, and poverty in India. The **2023-24 HCES** reflects the socio-economic impact of post-COVID-19 recovery and highlights structural shifts in household expenditure.

- HCES is designed to collect information on **consumption and expenditure of the households** on goods and services.

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- The survey assess trends in economic well-being and to determine and update the **basket of consumer goods and services** and weights used for the calculation of the Consumer Price Index.
- Information collected in HCES is useful for understanding **the consumption and expenditure pattern, standard of living and well-being of the households**.

KEY FINDINGS OF HCES 2023-24

1. **Rising Consumption Expenditure**: Rural: Rs. 4,122 (without imputation), Rs. 4,247 (with imputation). Urban: Rs. 6,996 (without imputation), Rs. 7,078 (with imputation). MPCE increased by **9% in rural** and **8% in urban areas** from 2022-23, reflecting improved economic conditions.

2. **Narrowing Rural-Urban Gap**: The urban-rural MPCE gap reduced from **84% (2011-12)** to **70% (2023-24)**, indicating better rural consumption growth.

3. **Consumption Patterns**:
    - **Non-Food Dominance**: Non-food expenditure accounts for **53% (rural)** and **60% (urban)** of MPCE, driven by conveyance, durable goods, and entertainment.
    - **Food Expenditure**: Beverages, processed food, milk, and vegetables dominate the food basket.

4. **Declining Consumption Inequality**:
    - Gini Coefficient: Rural: Reduced from **0.266 (2022-23)** to **0.237 (2023-24)**. Urban: Declined from **0.314 (2022-23)** to **0.284 (2023-24)**.

5. **Regional Variations**: **Highest MPCE**: Sikkim (Rural: Rs. 9,377, Urban: Rs. 13,927). **Lowest MPCE**: Chhattisgarh (Rural: Rs. 2,739, Urban: Rs. 4,927). Meghalaya shows the highest rural-urban disparity (104%).

6. **Impact of Welfare Programs**: Social welfare programs like PM-JAY and PDS have contributed to increased MPCE, especially in rural areas.

CHALLENGES OF HCES

1. **Recall Bias**: Reliance on memory for reporting expenditure leads to inaccuracies, particularly for long recall periods (30 days for food, 365 days for durable goods).

2. **Underestimation of Subsidized Services**: Challenges in imputing values for items received through welfare schemes like PM-JAY and PDS.

3. **Non-Response and Sample Coverage**: Wealthier households often underreport, while some rural and urban populations face non-response issues.
4. **Infrequent Surveys**: Conducted every five years, leading to outdated data amid rapidly changing economic conditions.
5. **Digital and Informal Economy**: Expenditure on e-commerce, digital payments, and informal transactions is underrepresented.
6. **Regional Disparities**: Uneven sample representation in tribal and remote areas limits insights into localized consumption patterns.

WAY FORWARD

1. **Leveraging Technology**: Use tablet-based data collection and real-time validation to reduce recall bias. Follow **Estonia's e-Governance model**, integrating survey data with national databases.
2. **Dynamic Sampling and Frequent Surveys**: Implement quarterly or annual surveys, as done in **South Africa**, to capture real-time trends.
3. **Integration with Administrative Data**: Link surveys with Aadhaar, PDS, and health databases to validate and enrich survey findings.
4. **Capturing Informal Economy**: Include informal transactions and digital economy data by partnering with fintech and e-commerce platforms.
5. **Regional Focus**: Oversample in remote and tribal areas to address underrepresentation, as suggested by the Suresh Tendulkar Committee.
6. **Behavioral Indicators**: Incorporate qualitative questions on well-being and aspirations, following **New Zealand's survey model**.

The HCES 2023-24 provides a valuable snapshot of India's consumption patterns and inequality trends. Addressing its challenges through technology, dynamic sampling, and integration with administrative data can enhance its reliability and relevance, making it a robust tool for evidence-based policymaking and socio-economic planning.

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19. THE RAILWAYS (AMENDMENT) BILL, 2024

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development > Infrastructure > Railways

REFERENCE NEWS:

- The Railways (Amendment) Bill, 2024, was recently passed in the Lok Sabha, despite disruptions, five months after its introduction.
- The Bill aims to establish a **unified and streamlined legal framework** for Indian Railways **by repealing** the century-old **Indian Railway Board Act, 1905, and integrating its provisions into the Railways Act, 1989.**
- This initiative simplifies the legal structure governing Indian Railways, making it more efficient and accessible.

HISTORICAL CONTEXT:

- Indian Railways, established as part of the **Public Works Department** during colonial rule, expanded rapidly, necessitating legal and administrative changes:
  - **Indian Railways Act, 1890**: Created to regulate railway operations.
  - **Railway Board Act, 1905**: Separated railway administration from the Public Works Department.
  - **Railways Act, 1989**: Replaced the outdated 1890 law to modernise railway governance. However, the **Railway Board** continued operating through executive decisions **without statutory backing.**

KEY FEATURES OF THE BILL:

- **Statutory Backing to the Railway Board**:
  - For the first time since its inception in 1905, the Railway Board will receive **statutory recognition.**
  - The Central government will determine key aspects of the Board, such as:
    - The number of members.
    - Their terms of service.
    - Their qualifications and experience.
  - This provision aims to improve the independence and functioning of the Railway Board.

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- **Decentralisation and Autonomy**:
  - The Bill proposes **greater autonomy for Railway Zones**, a long-standing demand supported by committees like the **Sreedharan Committee (2014)**.
  - Decentralisation is expected to improve efficiency by empowering regional zones to make quicker and more effective decisions.
- **Independent Regulator**:
  - A new regulatory body is proposed to:
    - Oversee tariffs and pricing.
    - Ensure compliance with safety standards.
    - Facilitate private sector participation in railway operations.
  - The idea of an independent regulator aligns with the recommendations of the **2015 Committee on Restructuring Railways (headed by Bibek Debroy)**.

- **Simplified Legal Framework**:
  - By incorporating the Indian Railway Board Act, 1905 into the Railways Act, 1989, the Bill **eliminates the need to rely on two separate laws**, making governance more streamlined and efficient.
- **Infrastructure Expansion and Superfast Operations**:
  - The Bill prioritises speeding up infrastructure projects and approvals for new train services.
  - Example: The proposed extension of the **Arunachal Express** via Siwan, Thawe, Kaptanganj, and Gorakhpur will improve connectivity and benefit under-served regions like Bihar.

SIGNIFICANCE OF THE RAILWAYS (AMENDMENT) BILL, 2024:

The Railways (Amendment) Bill, 2024, introduces several significant reforms aimed at enhancing the efficiency and governance of Indian Railways.

- **Faster Approval of Services and Projects:**
  - The Bill is expected to expedite the introduction of new services and the execution of projects, reducing delays and improving service delivery.
- **Accelerated Infrastructure Development:**

- By streamlining administrative processes, the Bill aims to facilitate quicker infrastructure development, particularly in regions with limited connectivity, thereby promoting regional economic growth.

- **Statutory Recognition of the Railway Board**:
  - Granting legal status to the Railway Board clarifies its role and responsibilities, strengthening its institutional framework and enhancing decision-making processes.
- **Simplification of Legal Framework**:
  - By repealing outdated laws and consolidating provisions, the Bill simplifies the legal structure governing Indian Railways, reducing complexity and improving administrative efficiency.
- **Establishment of an Independent Regulator**:
  - The creation of a regulatory body to oversee tariffs, safety standards, and private sector participation ensures compliance and promotes transparency, leading to improved safety and operational efficiency.
- **Attracting Private Investment**:
  - A clear and unified regulatory framework is anticipated to attract more private sector investment in railway projects, fostering innovation, improving services, and reducing the financial burden on the public exchequer.

CONCERNS AND CRITICISMS:

- **Lack of Adequate Deliberation:**
  - Critics argue that the Bill was introduced without sufficient discussion or stakeholder engagement.
  - Suggestions have been made to establish an **all-party committee to discuss amendments**, following historical practices like the **Robertson Committee (1905),** to ensure a more inclusive and transparent process.
- **Concerns Over Railway Board Autonomy:**
  - The Bill grants the **Central Government control** over the composition and appointments to the Railway Board, raising fears that it may **limit the Board's autonomy.** Critics believe this could undermine the Board's ability to make **impartial and independent decisions**, affecting its operational efficiency.
- **Independent Regulator: Gaps in Clarity:**
  - While the Bill proposes the establishment of an independent regulator, it provides **limited details about its composition, roles, and operational framework.** This vagueness has raised questions about the regulator's effectiveness in overseeing tariffs, safety, and private sector participation.
  -

- **Fears of Privatization:**
  - Concerns have been voiced about the Bill potentially paving the way for the privatization of Indian Railways.
  - Critics argue that increased private sector involvement **might prioritize profitability over accessibility**, **disadvantaging poor and vulnerable sections** of society who rely on affordable railway services.
- **Representation and Inclusivity in Appointments:**
  - The lack of provisions ensuring representation of Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), and women in the Railway Board has been questioned. Calls have been made for a more **inclusive approach to appointments, focusing on diversity, qualifications**, and expertise rather than political affiliations.
- **Broader Issues Left Unaddressed:**
  - The Bill does not sufficiently address longstanding challenges such as:
    - Operational delays and inefficiencies.
    - Accident prevention and safety measures.
    - Slow adoption of modern technologies.
    - Issues with implementing Public-Private Partnership (PPP) models.
- **Transparency and Accountability Concerns"**
  - The Central Government's enhanced control over the Railway Board has raised concerns about **bypassing parliamentary oversight.**
  - Ensuring a balance of power is essential to maintain accountability and transparency within the railway administration.

WAY FORWARD:

- **Decentralization and Empowerment:**
  - Granting greater autonomy to General Managers (GMs) and Divisional Railway Managers (DRMs) can lead to more responsive and effective decision-making. This approach aligns with the Bibek Debroy Committee's recommendations to empower field officers, fostering a more efficient operational environment.
- **Safety Enhancements**:
  - Prioritizing safety measures is essential. The Anil Kakodkar Committee emphasized the need for substantial investment in safety infrastructure, including the adoption of advanced signaling systems and regular maintenance protocols. Allocating dedicated funds for safety can significantly reduce accidents and enhance passenger confidence.
- **Financial Transparency and Accounting Reforms:**
  - Transitioning to an accrual-based accounting system, as recommended by the Bibek Debroy Committee, can improve financial transparency and accountability.

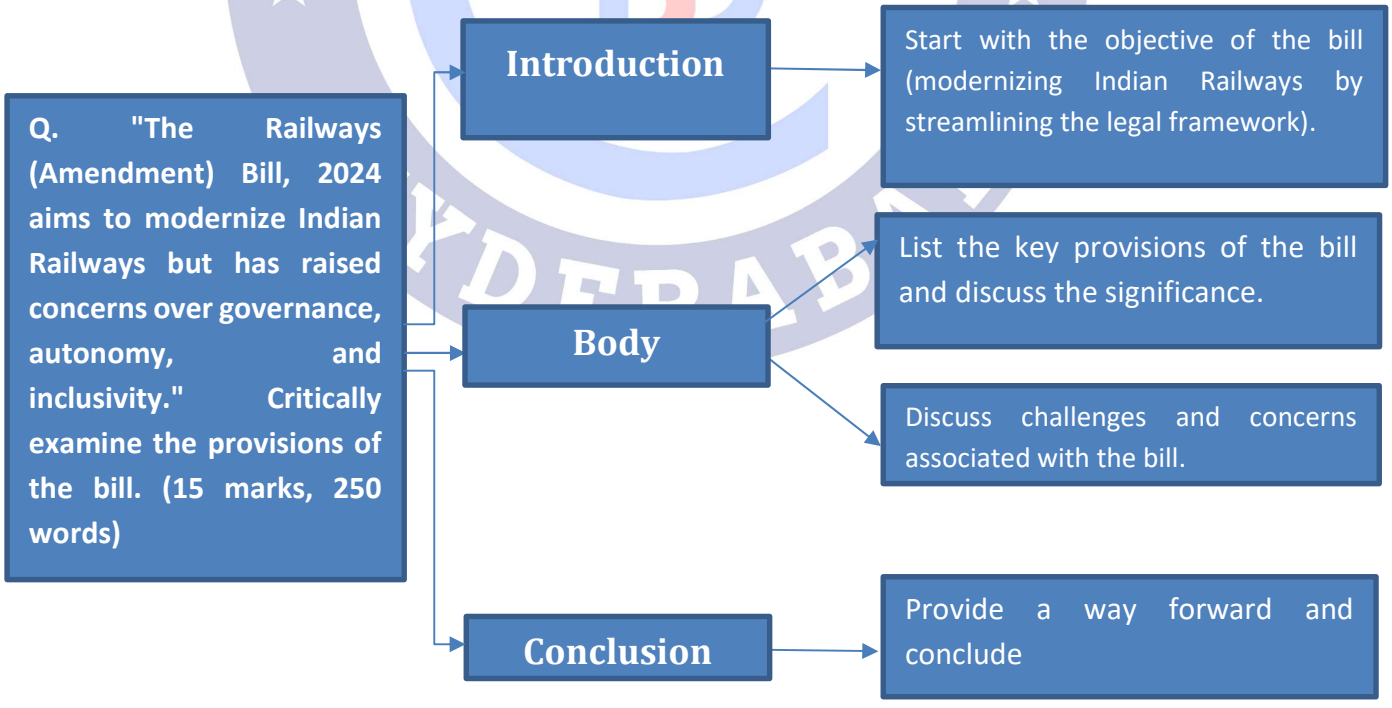
This reform would enable better financial management and decision-making within Indian Railways.

- **Inclusive Representation**:
  - Ensuring diverse representation within the Railway Board, including members from Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs), and women, is vital. This inclusivity can lead to more equitable policies and a broader perspective in decision-making processes.
- **Stakeholder Consultation and Deliberation**:
  - Engaging in comprehensive consultations with all stakeholders, including opposition parties, industry experts, and the public, can lead to more robust and widely accepted reforms. Establishing an all-party committee to discuss amendments, akin to the historical Robertson Committee (1905), can ensure a more inclusive and transparent legislative process.

PRACTICE QUESTION

Q. "The Railways (Amendment) Bill, 2024 aims to modernize Indian Railways but has raised concerns over governance, autonomy, and inclusivity." Critically examine the provisions of the bill. (15 marks, 250 words)

APPROACH



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MODEL ANSWER

The Railways (Amendment) Bill, 2024, recently passed in the Lok Sabha, seeks to modernize Indian Railways by unifying its legal framework. By repealing the Indian Railway Board Act, 1905, and incorporating it into the Railways Act, 1989, the Bill aims to simplify governance, improve operational efficiency, and promote infrastructure development. However, it has also drawn criticism regarding its impact on governance, autonomy, and inclusivity.

Provisions of the Bill

- **Statutory Recognition of the Railway Board**: Grants legal status to the Railway Board, allowing the Central Government to determine its structure and qualifications.
- **Decentralization**: Empowers Railway Zones to make faster and more localized decisions.
- **Independent Regulator**: Proposes a regulatory body to oversee tariffs, ensure safety compliance, and facilitate private sector participation.
- **Simplified Governance**: Consolidates outdated laws into a single framework for streamlined administration.
- **Infrastructure Expansion**: Focuses on accelerating project approvals, especially in under-served regions, like the proposed extension of the Arunachal Express.

Significance of the Bill:

1. **Improves Governance**: Strengthens the Railway Board's institutional framework and decision-making capabilities.
2. **Boosts Infrastructure Development**: Streamlines approvals to enhance connectivity in remote regions.
3. **Promotes Safety and Transparency**: Establishes a regulatory body to enforce compliance and accountability.
4. **Encourages Innovation**: Opens doors for private investment, reducing financial burdens on the government.
5. **Simplifies Administration**: Eliminates legal redundancies for better operational efficiency.

Challenges and Concerns

1. **Governance and Autonomy**: Centralized control over appointments may compromise the Board's independence.

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2. **Exclusion in Representation**: Fails to ensure leadership roles for marginalized groups, such as SCs, STs, OBCs, and women.
3. **Privatization Fears**: Risk of prioritizing profit over affordability, which could disadvantage low-income users.
4. **Unclear Regulatory Framework**: Vagueness about the independent regulator's composition and functions raises doubts about its effectiveness.
5. **Persistent Issues**: Neglects key challenges like operational delays, outdated safety measures, and slow adoption of new technologies.

Way Forward

- Delegate greater authority to zonal and divisional authorities for localized governance.
- Implement safety reforms recommended by the Anil Kakodkar Committee.
- Ensure diverse representation in the Railway Board for equitable decision-making.
- Clarify the structure and functions of the independent regulator for better transparency.
- Facilitate wider stakeholder engagement to address concerns and improve the Bill's scope.

By addressing these challenges, the Railways (Amendment) Bill, 2024, has the potential to modernize Indian Railways while ensuring inclusivity, accountability, and equitable development.

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20. LAND DEGRADATION AND DESERTIFICATION

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment & Ecology > Degradation & Deforestation

REFERENCE NEWS:

- Recently, a landmark report was released by the United Nations Convention to Combat Desertification (UNCCD) in collaboration with Germany's Potsdam Institute for Climate Impact Research before the UNCCD's COP16 started in Riyadh, Saudi Arabia.
- The report, titled ***Stepping Back from the Precipice: Transforming Land Management to Stay Within Planetary Boundaries***, delivered a sobering message about the state of our planet's land.

MORE ON NEWS:

- As per the report, **over 15 million square kilometres of land**, an area **larger than Antarctica**, has already been degraded, and every year, an additional **1 million square kilometres** suffers the same fate.
- The report highlighted that this isn't just about losing land; **it's about losing Earth's ability to sustain human life.**
- The report also highlighted how this degradation is wreaking havoc on key planetary systems. It's **not just affecting the land; it's intensifying problems like climate change, water scarcity, and biodiversity loss.**
- For instance, the report said land degradation has **reduced the capacity of land ecosystems** such as trees and soil **to absorb human-caused carbon dioxide by 20%** in the last decade. Previously, these ecosystems **could absorb nearly one-third** of this kind of pollution.

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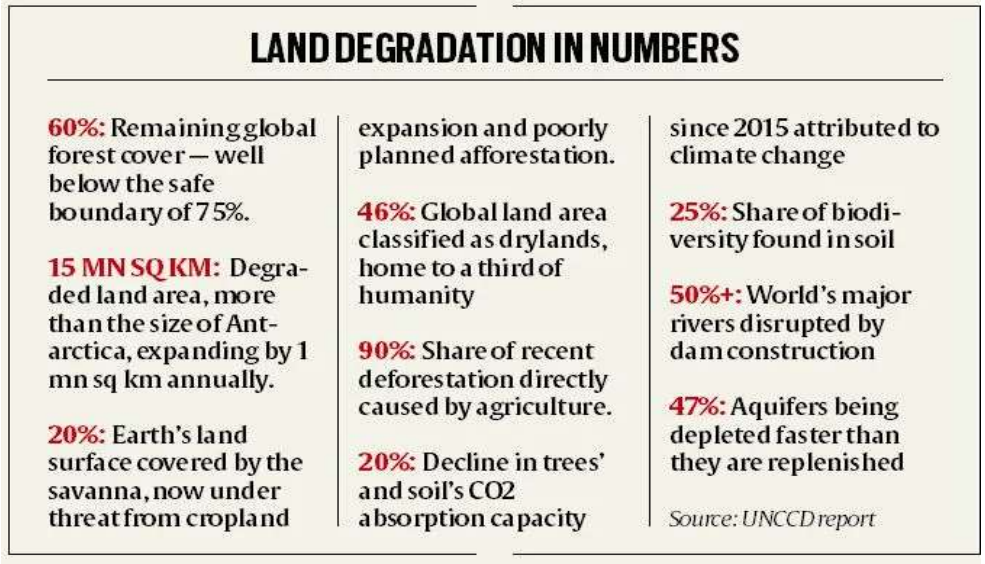


LAND DEGRADATION IN NUMBERS

60%: Remaining global forest cover — well below the safe boundary of 75%.

15 MN SQ KM: Degraded land area, more than the size of Antarctica, expanding by 1 mn sq km annually.

20%: Earth's land surface covered by the savanna, now under threat from cropland expansion and poorly planned afforestation.

46%: Global land area classified as drylands, home to a third of humanity

90%: Share of recent deforestation directly caused by agriculture.

20%: Decline in trees' and soil's CO_2 absorption capacity since 2015 attributed to climate change

25%: Share of biodiversity found in soil

50%+: World's major rivers disrupted by dam construction

47%: Aquifers being depleted faster than they are replenished

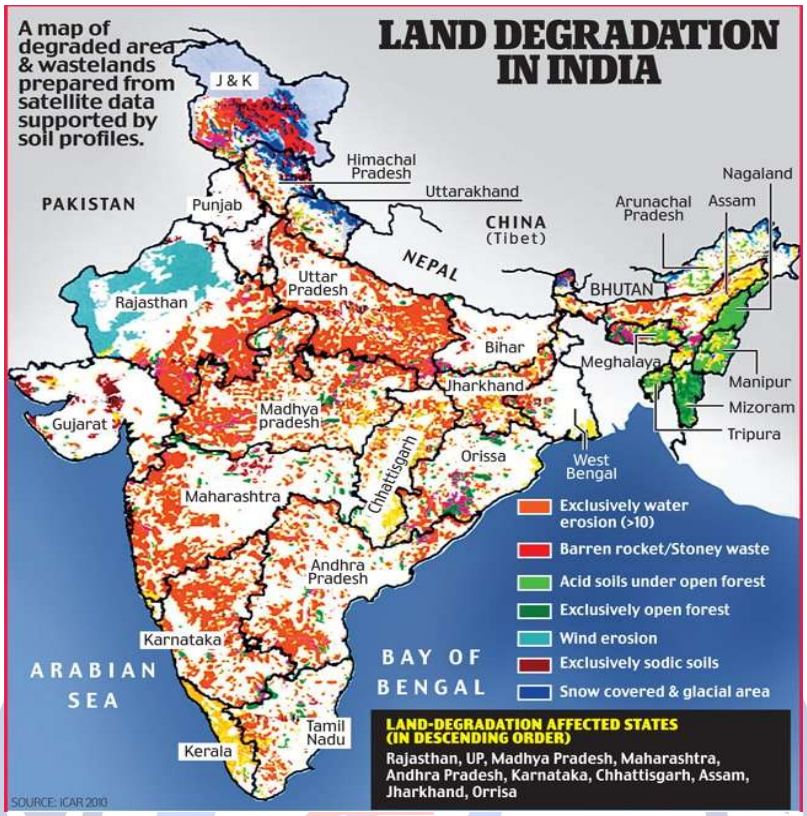
Source: UNCCD report

LAND DEGRADATION AND DESERTIFICATION:

- UNCCD defines **desertification as "land degradation in arid, semi-arid and dry sub-humid areas** resulting from various factors, including climatic variations and human activities".
- **Land degradation** is defined as "the persistent **reduction of the production capacity of a land,** which may be manifest through any combination of several interrelated processes, such as soil erosion, deterioration of soil nutrients, loss of biodiversity, deforestation, or declining vegetative health".

LAND DEGRADATION IN INDIA:

- As per the United Nations Convention to Combat Desertification (UNCCD) data dashboard, from 2015–2019, **30.51 million hectares** of India's total reported **land was degraded**. This means that **9.45 percent** of the country's landmass was degraded as of 2019. This was **4.42 percent in 2015.**
- According to UNCCD, India's **total degraded land** is equivalent to the size of **43 million football pitches.**
- The UNCCD data also reflected that 251.71 million Indians, constituting **18.39 percent of the country's population,** were exposed to land degradation during 2015–2019.
- From 2015 to 2019, the world lost at least **100 million hectares** of healthy and productive land each year, according to the data.



CAUSES OF LAND DEGRADATION AND DESERTIFICATION:

Natural Causes	**1. Erosion by elements-Water erosion and wind erosion:** ○ The most significant process of desertification/ land degradation in the country is due to **water Erosion, followed by wind erosion.** ○ For instance, **loss of soil cover, mainly due to rainfall and surface runoff**, was responsible for **11.01 percent of the desertification** in the country, as per the Desertification and Land Degradation Atlas by ISRO. ○ **Wind erosion** was found to be responsible for **5.46 per cent** of the desertification in India, as per ISRO atlas.
	2. Mass movement: ○ Mass movement, delineating the **movement of masses of soil and rock due to gravity,** also causes land degradation.
	3. Loss of soil moisture ○ Soil can lose its moisture due to several reasons, **like deficit in annual rainfalls, prolonged droughts or**

	depletion of groundwater. Continued loss of moisture can eventually lead to degradation and desertification. ○ Eg: In Andhra Pradesh, low rainfall and increased dependence on borewells have led to soil aridity, while less snow and more rainfall has deepened the desertification crisis in Himachal Pradesh.
Anthropogenic causes	**1. Unsustainable land use practices:** ○ Unplanned and unscientific activities, which **outweigh the carrying capacity of the soil**, can lead to soil erosion. ○ For eg. the **monoculture of water intensive crops** in the semi-**arid Punjab plains (green revolution regions)** has resulted in groundwater depletion and desertification. In Nagaland, **shifting cultivation** causes land degradation **.**
	2. Removal of natural vegetation: ○ **Clearing of forests and green cover for urbanisation and developmental activities** aggravates the effect of natural elements of erosion on soil. In fact, vegetation Degradation is the second most significant cause of land degradation in India after water erosion. ○ For eg. The **degradation in Aravalli hills**, due to clearing of natural vegetation for real estate.
	3. Mining: ○ Large scale mining, especially open pit mining, results in the removal of top soil and vegetation, leading to soil erosion and degradation. This is evident along the **mineral belts of Jharkhand.**
	4. Pollution: ○ Acid rains, overuse of fertilizers, dumping of wastes in landfills, leaching of heavy metals etc can lead to soil degradation.
	5. Overgrazing: ○ Uncontrolled grazing of pastures is the largest cause of desertification in the world. In India, overgrazing and encroachment of grassland for agricultural activities are the causes for land **degradation in Gujarat.**
Climate change	Climate change **exacerbates land degradation processes** through increases in rainfall intensity, flooding, increase in temperature,

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	drought frequency, as well as severity, dry spells, and sea-level rise. For instance, a report by the Intergovernmental Panel on Climate Change (IPCC) noted that global warming has **worsened land degradation by increasing frequency, intensity and/ or amount of heavy precipitation, and increased heat stress.**

IMPACTS OF LAND DEGRADATION AND DESERTIFICATION:

- **Economic loss:**
  - The Energy and Resources Institute's (TERI) conservative estimate shows land degradation costs **USD 48.8 billion** to the country's exchequer annually.
- **Threaten food security:**
  - Land degradation threatens agricultural productivity and can lead to food insecurity. This will have repercussive **impacts on poverty alleviation** as well as affects the overall productivity of the economy.
- **Impacts Microclimate:**
  - Degradation can lead to **destruction of vegetation**, which will affect the region's climate and also contributes to climate change.
- **Reduce Carbon storage:**
  - Loss of green cover, soil infertility and increased soil erosion reduces the soil's potential to store carbon. This in turn contributes to **global warming and aggravates climate change.**
- **Affects water retention:**
  - Land degradation can reduce the infiltration of water, which results in lower groundwater table and
- **Aggravates disasters:**
  - Excessive soil erosion due to land degradation can destabilise slopes leading to landslides. Siltation of rivers due to erosion reduces the carrying capacity of rivers, thereby leading to severe floods and intense droughts.
- **Socio-Political Impacts:**
  - Land degradation has serious knock-on effects for humans, such as malnutrition, disease, forced migration, cultural damage, and even war.
  - Eg: Protracted drought and loss of fertile land may have been contributing factors in the **wars in Sudan and Syria**.
  - Eg: **Recent farmer agitations** and resultant resignation of elected members of allies from ruling coalitions.

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EFFORTS TO PREVENT LAND DEGRADATION AND DESERTIFICATION:

NATIONAL:

- **Commitment to UNCCD and SDGs:**
  - For eg. India has adopted the goal of achieving **Land degradation Neutrality by 2030** as adopted under Sustainable Development Goals.
- **National Action Programme to Combat Desertification.**
- **Delhi Declaration**: India hosted the COP 14 to UNCCD and adopted new targets:
- **Pradhan Mantri Krishi Sinchai Yojana.**
- **Desert Development Programme.**
- **National Afforestation Programme.**
- **Soil health card scheme.**
- **National Mission on Green India.**

INTERNATIONAL:

- **United Nations Convention to Combat Desertification (UNCCD):**It is the sole legally binding international agreement linking environment and development to sustainable land management.
- **The Bonn Challenge:** To bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.
- **Goal 15 of Sustainable Development Goals (SDG), 2030.**
- **Land Degradation Neutrality fund.**
- **The World Day to Combat Desertification and Drought** is observed every year on 17th June.

Africa's Great Green Wall:

- Launched in 2007 by the African Union, this initiative aims to restore Africa's degraded landscapes and transform the Sahel region.
- The ambition of the initiative is to restore 100 million ha of currently degraded land; sequester 250 million tons of carbon and create 10 million green jobs by 2030.

WAY FORWARD:

- **Watershed development:** Integrated watershed management, which involves soil and water conservation coupled with suitable crop management, is another excellent strategy for mitigating soil erosion and land degradation.
- **Promote sustainable agriculture:** India needs to encourage crop rotation, crop diversification, micro-irrigation, organic farming etc. if it is to tackle desertification.

- **"Green Walls" And "Green Dams":** Natural windbreaks should be constructed to reduce the rate of desertification, through afforestation, and ecosystem restoration programmes
- **Integrated Nutrient Management and Organic Manuring:** Integrated nutrient management, i.e., the application of NPK mineral fertilizers along with organic manure, increases crop productivity, and decreases soil loss.
- **Recognizing the key role of Land managers**, including indigenous people and local communities in the design, implementation and evaluation of sustainable land management practices.
- **Sustainable Urban planning:** Focus on urban greenery, replanting with native species, green infrastructure development, remediation of contaminated soils, wastewater treatment and river channel restoration.
- **Eliminate incentives that promote degradation** like subsidies that reward overproduction, and devising positive incentives to reward the adoption of sustainable land management practices.
- **Reclamation of affected Soils and Drainage**, through measures such as using lime and gypsum, zero tillage, use of leguminous crops and organic fertilizers. Mined land can be better reclaimed by proper back filling of topsoil and revegetating them with the help of geo-textiles.
- **Pollution Control:** Domestic and municipal wastes, sludges, pesticides, industrial wastes, etc. need to be used with utmost caution to avoid the possibility of pollution of soil.

PRACTICE QUESTION

Q. Discuss the major causes of land degradation and desertification in India. Suggest measures to address these challenges effectively. (10 marks, 150 words)

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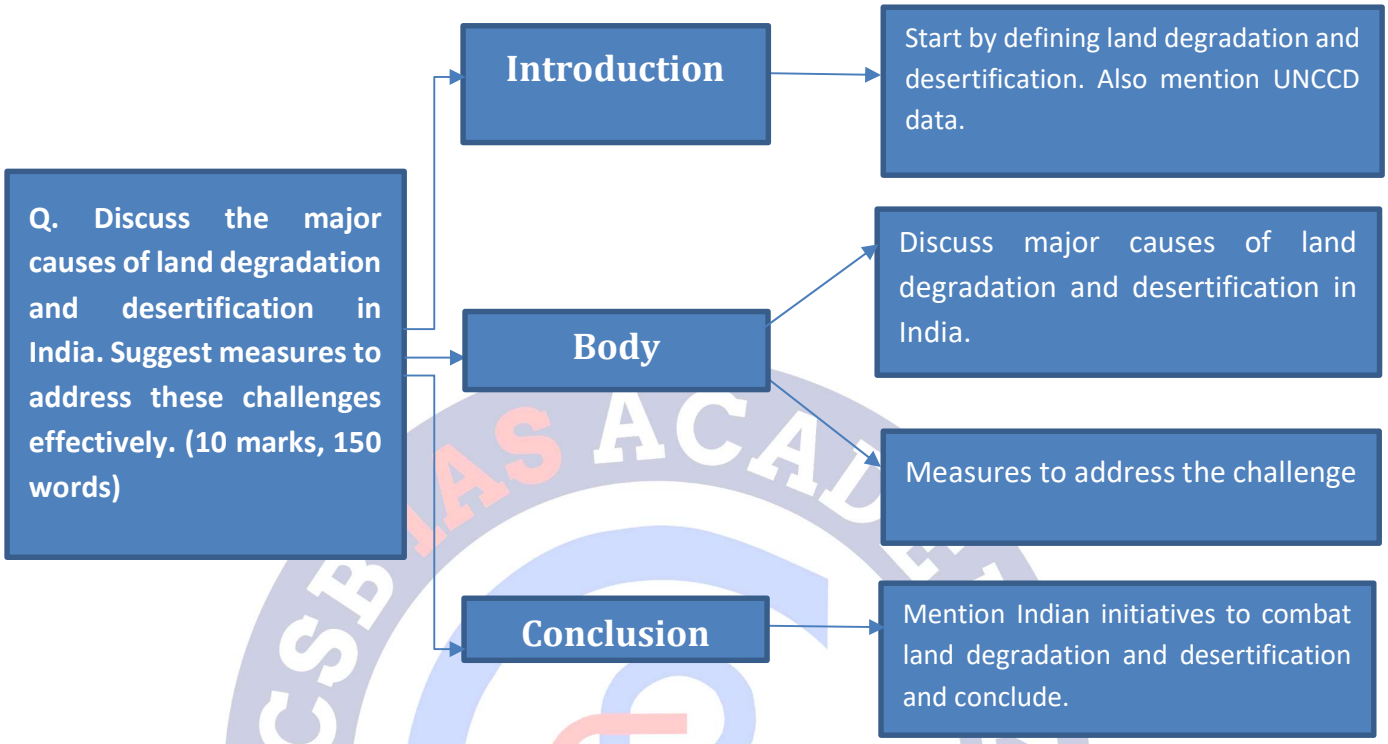
APPROACH



MODEL ANSWER

According to the United Nations Convention to Combat Desertification (UNCCD):

- **Land degradation** refers to the persistent reduction in land's productive capacity due to processes like soil erosion, loss of nutrients, and deforestation.
- **Desertification is the degradation of land in arid, semi-arid, and dry sub-humid areas** caused by human activities and climate change.

Between 2015 and 2019, 30.51 million hectares **(9.45%) of India's land was degraded**, impacting 251.71 million people, as per UNCCD. This underscores the urgent need for action to mitigate these effects.

Major Causes of Land Degradation and Desertification in India

1. **Natural Causes**
    - **Water and Wind Erosion**:
        - Water erosion is the leading cause, accounting for **11.01%** of desertification, followed by wind erosion at **5.46%**.
    - **Loss of Soil Moisture**:
        - Factors like prolonged droughts and excessive groundwater extraction, as seen in **Andhra Pradesh**, contribute to soil aridity.

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2. **Human-Induced Causes**
    - **Unsustainable Land Use**:
        - Monoculture farming in Punjab's semi-arid plains has depleted groundwater and degraded soil.
    - **Deforestation and Urbanization**:
        - Clearing green cover for cities, such as in the **Aravalli Hills**, worsens soil erosion.
    - **Mining**:
        - Open-pit mining in **Jharkhand** destroys topsoil and accelerates erosion.
    - **Overgrazing**:
        - Excessive grazing in **Gujarat's grasslands** is a key contributor to desertification.
    - **Pollution**:
        - Heavy use of fertilizers and acid rain damage soil health, reducing fertility.
3. **Climate Change**
    - Erratic rainfall, rising temperatures, and frequent droughts exacerbate soil degradation across the country.
    - For instance, a report by the IPCC noted that global warming has worsened land degradation by increasing frequency, intensity and/ or amount of heavy precipitation, and increased heat stress.

    <A map showing land degradation in India can be included here.>

Measures to Address the Challenge

1. **Sustainable Farming Practices**
    - Promote crop rotation, organic farming, and micro-irrigation to conserve soil health.
2. **Watershed Management**
    - Implement integrated approaches for soil and water conservation, especially in erosion-prone regions.
3. **Reforestation and Green Barriers**
    - Initiatives like "Green Walls" can act as windbreaks and stabilize soil in dry regions.
4. **Pollution Control**
    - Regulate fertilizer use, remediate contaminated soils, and ensure responsible waste management.
5. **Community Participation**
    - Involve local communities in land management, focusing on indigenous practices and sustainable techniques.

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6. **Policy Interventions**
    - Offer incentives for sustainable practices and remove policies that encourage overexploitation of resources.

Indian Initiatives to Combat Land Degradation and Desertification

- Commitment to achieving Land Degradation Neutrality by 2030 (UNCCD and SDGs).
- National Action Programme to Combat Desertification.
- Delhi Declaration (COP 14, 2019).
- Pradhan Mantri Krishi Sinchai Yojana.
- Desert Development Programme.
- National Afforestation Programme.
- Soil Health Card Scheme.
- National Mission for a Green India.

Land degradation and desertification threaten India's agricultural productivity, water security, and ecological balance. To combat this, India must integrate sustainable practices, empower communities, and honor commitments like **Land Degradation Neutrality by 2030**. Collaborative efforts between stakeholders and policy reforms can pave the way for a healthier, more sustainable future.

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21. PLASTIC POLLUTION

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment & Ecology > Degradation & Deforestation

REFERENCE NEWS:

- Recently, the week-long global talks in Busan, South Korea, on curbing plastic pollution ended in failure and concluded without agreement on a legally binding treaty to curb plastic pollution

MORE ON NEWS:

- This was the fifth and final round of negotiations since March 2022, when the **United Nations Environment Assembly (UNEA)** agreed to develop a **legally binding treaty on plastics pollution by the end of 2024.**
- The talks stumbled primarily due to **conflicting views on setting production caps and phasing out certain harmful plastic chemicals and products.**
- Although the treaty was not finalised, discussions on the **draft text of the treaty will continue next year.**
- Over 100 countries, including many **from Africa, Latin America, and the European Union, pushed for stringent measures** such as caps on plastic production and the outright elimination of certain harmful chemicals and products.
- On the other side, a bloc of "like-minded countries" including **oil-rich nations such as Saudi Arabia, Kuwait, Russia, and Iran, along with India and China, resisted these demands.** They argued that such restrictions exceeded the original environmental goals and could instead serve as veiled economic barriers, stifling competition and trade under the pretext of environmental protection.
- The negotiations yielded a draft text, a mixed bag of agreed principles and unresolved issues:
    - **Agreed Principles:** The draft proposed measures like banning open dumping and burning of waste and defined terms for plastics and related products clearly.
    - **Unresolved Issues:** More contentious issues like definitions for microplastics, nanoplastics, and primary plastic polymers remained vague, reflecting ongoing disagreements.
- Despite objections, especially from Arab countries, the draft did **suggest potential future measures to reduce plastic usage, focusing particularly on single-use and rapidly**

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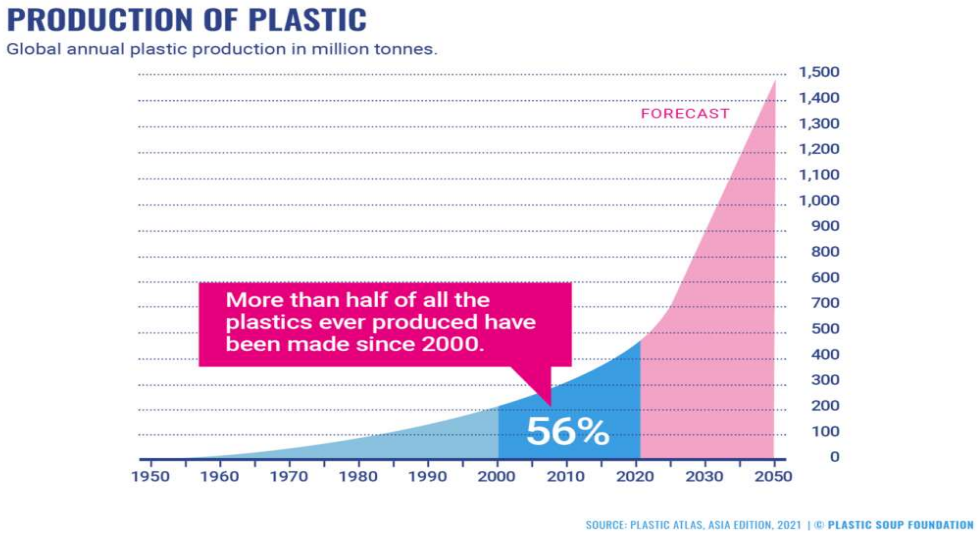
degrading plastics. This document is set to form the foundation for continued debate in the next meeting scheduled for 2025.

India's Position
○ India played a pivotal role, advocating for a fair consideration of each country's unique circumstances in the fight against plastic pollution. ○ The Indian delegation argued for policies that **consider the developmental needs of countries and the provision of necessary support, like technology transfer and financial aid.** ○ Firmly, India **rejected any restrictions on plastic production**, stating that the **relationship between polymer production and pollution isn't direct enough to warrant such measures.** ○ Instead, India proposed concentrating e**fforts on mitigating plastic pollution more broadly**, without imposing production caps or additional costs on polymer manufacturing.

PLASTIC POLLUTION:

- Plastic pollution is the **accumulation of plastic objects and particles** (ex: plastic bottles, bags and microbeads) **in the environment that adversely affects humans, wildlife and their habitat**.



STATISTICS:

- **Globally:**
  - Between Today, the world produces about **400 million tonnes of plastic waste every year**. Yet only an estimated 12% of the plastics produced have been incinerated and **only an estimated 9% have been recycled**. (Source: UNEP)
- **India:**

- According to the report titled **'Plastics, The Potential and Possibilities'**, India **generates around 3.4 million tonnes (MT) of plastic waste in a year, of which only 30% is recycled.**
- According to FICCI, **an Indian consumes 11 kg of plastic per year**.
- India's contribution is around **3.1% of the global plastic waste generation.**

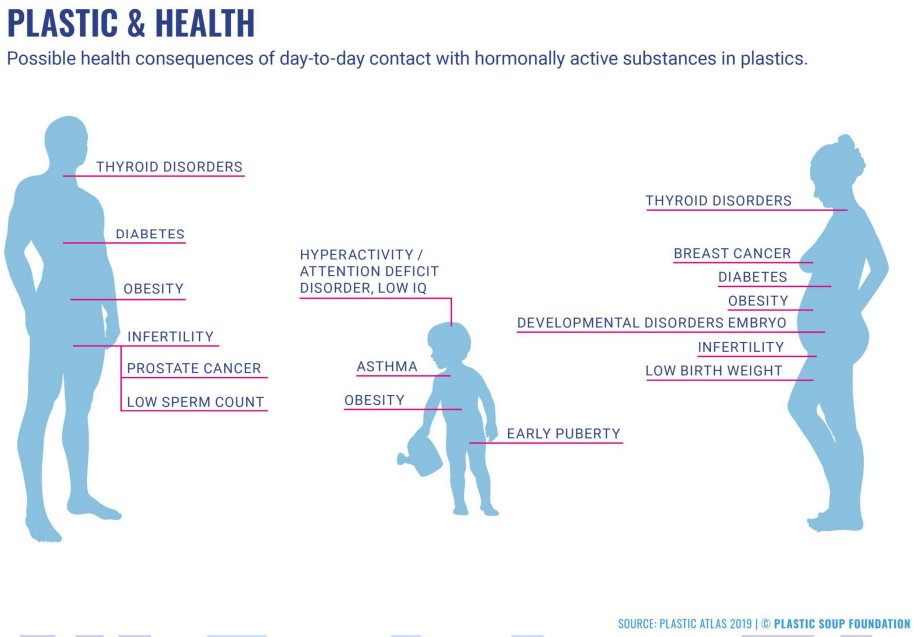
CAUSES:

- **Rising consumption:**
  - Plastic is **cheap and durable**, which make it ideal to meet the demands of the rising population. However, most of it is **single-use plastic**.
- **Slow rate of decomposition:**
  - The decomposition rate of plastic typically ranges from **400 to 600 years**, depending on the type. Hence, they remain in the environment for long.
- **Poor waste management:**
  - Disposal of plastic is often mismanaged. It ends up in landfills and waterbodies or being burned.
  - Also, Countries importing the waste plastics often lack the capacity to process all the material.
- **Informal sector activity:**
  - Plastic waste collection in developing countries like India is dominated by the informal sector workers. They **lack the knowledge and the resources to segregate and scientifically dispose plastic waste**.
- **Infrastructure deficit:**
  - The number of recycling and collection facilities in India are dismal compared to the amount of plastic waste being generated in India.
- **Ineffective enforcement:**
  - The current framework continues to ignore the informal sector. Also, there is no independent mechanism to verify the implementation of measures such as **Extended Producer Responsibility (EPR)**.
- **Pandemic:**
  - COVID-19 saw an increase in plastic finding its ways to the ocean, especially from **medical waste and masks.**

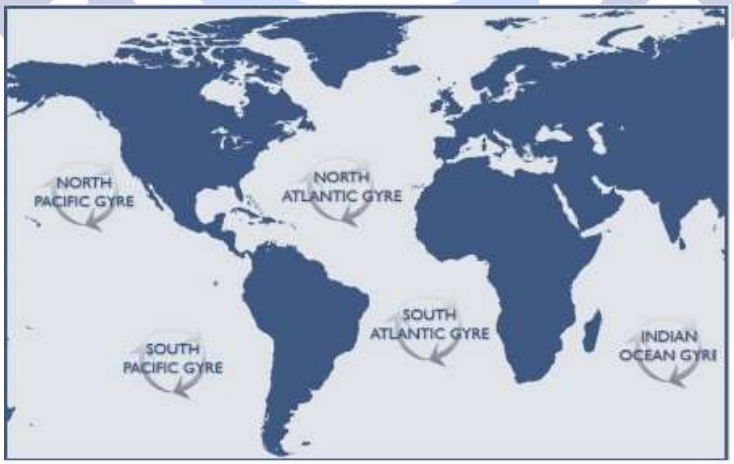
EFFECTS OF PLASTIC POLLUTION

- **Environmental impact:**
  - Plastics including microplastics are now part of the Earth's fossil record and a **marker of the Anthropocene**. They have even given their name to a new **marine microbial habitat called the "plastisphere"**.

- **Negative effects on human health:**
  - **Microplastics enter the human body** and lead to an array of health impacts.



- **Marine pollution:**
  - An estimated **170 trillion plastic particles** weighing about 2 million metric tons are currently afloat in the oceans across the world.
  - The most noted among these is the **Great Pacific Garbage Patch—a 600-sq km floating island of plastic waste in the North Pacific Ocean.**



  - **Impact on marine life:**

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- Marine wildlife such as seabirds, whales, fishes and turtles, mistake plastic waste for prey, and most die of **starvation**, **ingestion, suffocation and entanglement** in plastics.
- **Plastic-contaminated seafood:**
  - Scientists have found **micro plastics in 114 marine species, and around one-third of these end up on our plates.**
- **Upsets the marine food Chain:**
  - Because it comes in sizes large and small, polluting plastics are found in even the world's tiniest organisms, such as plankton.

- **Water pollution:**
  - Toxic chemicals from plastics drain out and seep into groundwater, flowing downstream into lakes and rivers.
  - A 2017 study found that **83% of tap water samples taken around the world contained plastic pollutants.**
- **Soil pollution:**
  - When plastic is dumped in landfills, **it interacts with water and forms hazardous chemicals.** The leaching causes soil pollution.
- **Air pollution:**
  - Burning of plastics leads to the release of poisonous chemicals. The polluted air, when inhaled, affects the health and can cause respiratory problems.
- **Economic impacts:**
  - Plastic pollution **costs USD 13 billion in economic damage to marine ecosystems per year.** This includes **losses to the fishing industry and tourism, as well as the cost to clean up beaches.**
- **Invasive Species:**
  - Plastic waste can **also be a mode of transport for species, potentially increasing the range of certain marine organisms or introducing species into an environment** where they were previously absent.
- **Floods:**
  - Plastic waste can **clog storm drains, and such clogging can increase flood damage**, particularly in urban areas.
  - **For example:** in Bangkok flood risk increases substantially because of plastic waste clogging the already overburdened sewer system

PLASTIC WASTE MANAGEMENT INITIATIVES IN INDIA:

Plastic Waste Management in India:

- **Plastic Waste Management Rules 2016:**
  - Replaced the 2011 Rules.
  - Emphasized a complete ban on plastics below 50 microns.

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- Introduced Extended Producer Responsibility (EPR).
- Increased the minimum thickness of plastic carry bags from 40 to 50 microns.
- Promoted the use of plastic waste for road construction.

- **Plastic Waste Management (Amendment) Rules, 2021:**
  - Imposed a ban on specific single-use plastic items from July 1, 2022.
  - Increased the thickness of carry bags to 75 microns in 2021 and 120 microns by the end of 2022.
  - Launched 'Prakriti', a mascot to enhance public awareness about sustainable practices.
- **National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management (MoEFCC):**
  - Connects stakeholders to track progress in eliminating single-use plastic and managing plastic waste.
- **Extended Producer Responsibility (EPR) Portal for Plastic Packaging (CPCB):**
  - Enhances accountability and transparency in reporting compliance with EPR obligations.
- **Mobile App for Single Use Plastics Grievance Redressal (CPCB):**
  - Allows citizens to report violations related to single-use plastic manufacturing and usage.
- **Monitoring module for single-use plastic (CPCB):**
  - Helps local bodies and state pollution control boards monitor and enforce the ban on single-use plastics.
- **Industrial production of Graphene from Waste Plastic (G B Pant NIHE & NRDC):**
  - Encourages industries to upcycle plastic waste into valuable graphene.
- **India Plastics Pact:**
  - A collaborative initiative to reduce plastic usage across value chains by setting time-bound commitments.
- **Swachh Bharat Mission:**
  - Strengthens waste management infrastructure across States/UTs.
- **Other campaigns:**
  - Includes the India Plastic Challenge – Hackathon 2021 and an awareness campaign launched in 2021 focused on eliminating single-use plastics.

CHALLENGES IN PLASTIC WASTE MANAGEMENT:

- **Volume of waste generated:**
  - With **rapid urbanisation, rising population and increasing dependence on plastics**, the amount of waste generated far exceeds the management capabilities.
- **Absence of segregation:**
  - Due to the **absence of waste segregation at source into biodegradable and non-biodegradable,** considerable amount of plastic waste is not recycled, leading to it being incinerated or dumped in landfills.
- **Fewer alternatives:**
  - Ban on plastics have had limited success due to absence of alternatives.

- **Ex:** Bioplastic production in India is just 1% out of 300 million tonnes of conventional plastics produced annually.

- **Informal waste management sector:**
  - Waste collection and processing in India is carried out largely by the informal sector. This makes it **difficult to implement the waste management rules**, **ensure scientific disposal** of wastes and address the welfare of workers.
- **Lack of awareness:**
  - People **lack proper awareness** regarding the threats posed by plastics or the need of better waste disposal for their health and wellbeing.
- **Weak enforcement:**
  - 22 States have, in the past, announced a ban on single-use plastic. But this has **had little impact on the crisis because governments were half-hearted in their approach and alternatives were not made available on time.**
- **Unempowered local government bodies:**
  - Due to lack of funds and technical expertise, **local governments rely on burning plastic wastes or on municipal contracts**, where companies are paid for haulage of mixed waste.
- **Absence of community participation:**
  - Due to lack of incentivisation and awareness, participation from non-profits or community is limited.
  - Also, **most of the rules encourage centralized treatment such as waste to energy**, which is still under-developed in the country.
- **Unbalanced spending:**
  - **Three-fourth of solid waste management budget is allotted to collection and transportation**, which leaves very little for processing or resource recovery and disposal.
- **Rise of E-Commerce industry:**
  - The popularity of online retail and food delivery apps, though restricted to big cities, is contributing to the rise in plastic waste.

WAY FORWARD:

- **3R's +E Strategy for Plastic Waste Management:**
  - **Reduce:** Focus on minimizing plastic use to decrease pollution.
  - **Reuse:** Encourage reusing plastic items for different purposes instead of discarding.
  - **Recycle:** Process plastic waste into new products to lessen its presence in the waste stream.

- **Educate:** Increase public awareness and promote behavioral change towards waste handling.

- **Decentralized Waste Management:**
  - Local authorities should revamp strategies to process rather than landfill waste, adapting to evolving lifestyles.
- **Segregation at Source:**
  - Ensuring proper waste segregation at the source to facilitate effective recycling and resource recovery.
- **Promote Plastic Alternatives:**
  - Encourage the use of biodegradable plastics and technologies like geotextiles and waste-to-energy plants.
- **Formalize Waste Sector:**
  - Professionalize waste management using technology, promoting start-ups and public-private partnerships (PPPs).
- **Incentivize Responsible Behavior:**
  - Provide funding for waste processing projects and incentivize proper waste segregation and use of recycled products.
- **Awareness Campaigns:**
  - Educate all stakeholders, from producers to handlers, on effective plastic waste management.
- **International Cooperation:**
  - Advocate for global agreements on plastic use and waste management, with India taking a proactive role.
- **Support for Research and Development:**
  - Offer subsidies for developing sustainable waste management technologies and uses, like using waste in road construction.
- **Tax Reforms:**
  - Adjust taxes and subsidies to discourage environmentally harmful practices and promote the use of eco-friendly plastic alternatives.

PRACTICE QUESTION

Q. Discuss the primary causes of plastic pollution and evaluate its consequences on both environmental and human health.(10 marks, 150 words)

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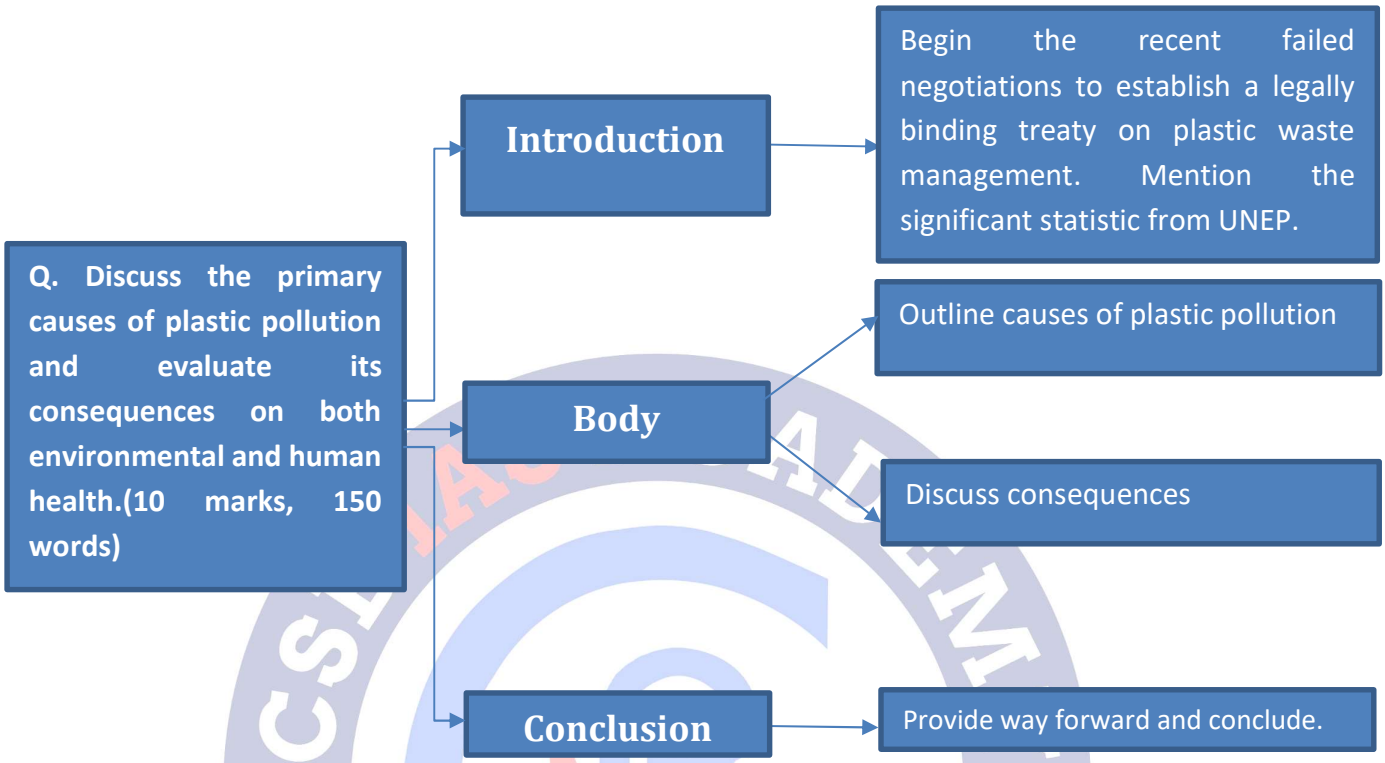
APPROACH



MODEL ANSWER

Plastic pollution remains a pressing environmental issue, as evidenced by the **recent failed negotiations in Busan, South Korea, to establish a legally binding international treaty on plastic waste management.** The challenges underscore significant discrepancies in global environmental governance and economic priorities. According to UNEP, the world produces approximately 400 million tonnes of plastic waste annually, but only 9% is recycled, and 12% is incinerated, indicating a severe global management deficit.

Causes of Plastic Pollution

1. **High Production and Consumption**: Plastics are inexpensive and versatile, making them ubiquitous in daily use, especially for single-use products like packaging, contributing significantly to global waste.
2. **Inadequate Waste Management Infrastructure**: Many countries lack the capacity to manage the vast amounts of waste generated, leading to improper disposal methods such as open dumping and burning, as highlighted during the global talks.

3. **Economic Incentives for Plastic Use**: Plastic production is often cheaper than alternatives, driving its continued use and disposal, particularly in developing economies where cost-effective alternatives are limited.
4. **Regulatory Gaps**: There is a global inconsistency in regulations which allows for the continued production and use of harmful plastics, as evident from the resistance by some countries during the treaty talks.
5. **Global Trade in Plastic Waste**: Countries with inadequate processing capabilities import significant amounts of waste, exacerbating local pollution levels.
6. **Public Awareness and Behavior**: There is often a lack of awareness about the impacts of plastic pollution and the importance of recycling and proper waste management among the general populace.

Consequences on Environment and Human Health

1. **Marine Pollution**: Plastics accumulate in bodies of water, forming large patches like the Great Pacific Garbage Patch, and affecting marine biodiversity and ecosystems.
2. **Wildlife Impact**: Animals, particularly marine species, ingest or become entangled in plastic debris, often leading to injury or death. For instance, seabirds, turtles, and whales mistake plastics for food, which can be fatal.
3. **Human Health Risks**: Microplastics have been found in human tissues and organs and are associated with health risks including cancer, reproductive issues, and other illnesses due to the chemicals they leach.
4. **Economic Costs**: The UNEP estimates that plastic pollution causes around USD 13 billion in damage annually to marine ecosystems, affecting industries like tourism and fishing and increasing cleanup costs.
5. **Soil and Water Contamination**: Plastics in landfills leach toxic chemicals into the soil and groundwater, affecting both terrestrial and aquatic ecosystems.
6. **Air Pollution**: Burning plastics releases harmful chemicals into the atmosphere, contributing to air pollution and affecting respiratory health among nearby populations.

Way Forward

- **Strengthen International Regulations**: Advocate for stronger, binding international treaties on plastic pollution that ensure global cooperation and accountability.
- **Improve Recycling Infrastructure**: Invest in advanced recycling facilities worldwide to increase the recycling rates and reduce the volume of unmanaged waste.
- **Promote Alternatives to Single-Use Plastics**: Encourage the use of biodegradable and sustainable materials through incentives and regulatory support.
- **Enhance Public Awareness Campaigns**: Launch global initiatives to educate the public on the impacts of plastic pollution and the importance of recycling and waste management.

- **Develop Economic Incentives**: Implement policies that incentivize businesses to reduce plastic use and enhance sustainability in their operations.
- **Research and Innovation in Waste Management**: Support and subsidize research into new technologies for waste reduction, recycling, and reuse to keep pace with the generation of plastic waste.

While the challenge of mitigating plastic pollution is daunting, it necessitates a collaborative global effort to transform the plastic economy into one that is more circular and sustainable. Future international discussions must aim for actionable commitments and realistic strategies to reduce plastic dependency and improve waste management worldwide, ensuring the protection of environmental and human health for future generations.

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22. COLD WAVES

iMPACT ANALYSIS

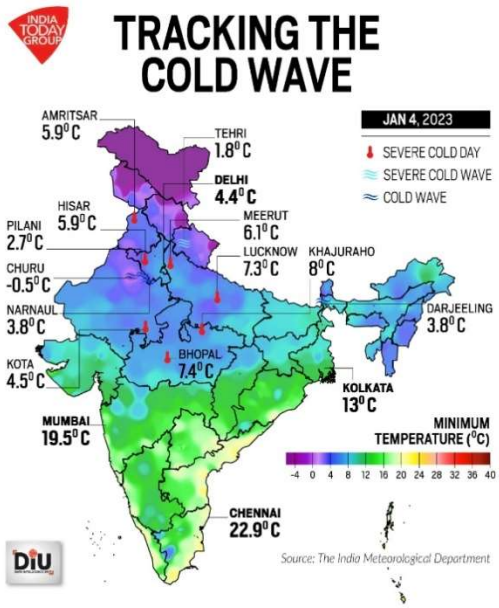
SYLLABUS:

GS 3 > Disaster Management >> Cold waves

REFERENCE NEWS:

The Indian Meteorological Department stated that temperatures in Delhi are expected to drop by 1-2 degree Celsius in the coming days due to shifting wind patterns. Severe **cold waves** are also likely to be recorded in Punjab and Madhya Pradesh. IMD scientists attributed the drop in temperature to the prevailing **north westerly winds** over Delhi, with **southeasterly winds** expected to influence North India shortly. IMD highlighted that severe cold waves have already been observed in several parts of North and Central India, especially in Punjab and Madhya Pradesh.

COLD WAVES IN INDIA:



A **cold wave** is a meteorological phenomenon characterized by a significant drop in temperature over a short period, typically impacting large geographic areas. It poses risks to human health, agriculture, and infrastructure.

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India's '**core cold wave zone'** covers Punjab, Himachal Pradesh, Uttarakhand, Delhi, Haryana, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, West Bengal, Odisha and Telangana.

- **World Meteorological Organization** defines a cold wave as an **extended period of abnormally low temperatures** that may be accompanied by high winds, making the cold more severe. It is defined relative to local climate norms, as the impact varies by region.
- The **IMD** records a cold wave when the minimum temperature is equal to or less than **10 degree Celsius** at a weather station in the **plains**, and is 4.5 degrees to 6.4 degrees below the normal temperature for that period. A cold wave may also be recorded at a station in the plains when the minimum temperature is less than or equal to 4 degree Celsius. For **hilly regions**, a cold wave is declared when the minimum temperature **is less than or equal to 0 degree Celsius** and the minimum temperature is 4.5 degrees to 6.4 degrees below the normal. The 'normal' temperature is calculated for every five days by taking the average temperature for these days over the past 30 years.

CONDITIONS FOR COLD WAVE FORMATION:

Cold waves usually occur from mid-December to the end of February. The cold waves depend on weather systems and wind patterns from the middle latitudes, that is from Europe or West Asia, since the winds from these regions bring cold weather.

- **Clear Skies and Calm Winds**: Clear skies enhance radiational cooling at night, while calm winds prevent the mixing of warmer air layers with cooler ones near the ground.
    - Northern India often experiences intense night-time cooling due to clear skies during winter, especially in states like Rajasthan and Punjab.
- **Western Disturbances**: A lack of active **western disturbances** (low-pressure systems originating from the Mediterranean) results in prolonged cold conditions in northern and northwestern India. Without these disturbances, the region lacks cloud cover which leads to colder nights and less moderate daytime temperatures, resulting in prolonged cold spells. Also these gaps in disturbances can cause strong north westerly winds and westerly cold winds to blow over North India.
    - In 2023, a weak western disturbance led to prolonged cold waves in Delhi and adjoining areas.
- **Cold Air Advection**: Invasion of cold, dense air from polar or subpolar regions into temperate areas intensifies cold waves. The factors that bring cold waves to India include the movement of cold air masses brought about by **upper-level winds**. They can be

triggered by strong westerly winds approaching northwest India and transporting cold air towards the southeast direction. Build-up of an extended area of relatively high pressure over northwest Asia can also bring cold waves.

- Northern India often experiences cold winds from the Himalayas, bringing frigid air during winter.

- **Snowfall in Himalayan Region**: Snowfall in the western Himalayas or Tibetan Plateau enhances the albedo effect, cooling the surrounding air. This dense, cold air flows southward, intensifying cold conditions in the plains.
    - The Gangetic plains experience chilling effects due to snowfall in the Himalayan foothills.
- **La Niña Effect**: During **La Niña**, lower temperatures are observed globally, including in India, due to intensified northeasterly winds.
    - The 2020-2021 winter was unusually cold in India, partly attributed to La Niña.
- **High Pressure Systems**: Persistent high-pressure systems during winter block warmer air from entering a region, trapping cold air.
    - High-pressure conditions in the Indo-Gangetic Plains contribute to extended cold spells.
- **Large scale Fog**: Fog lasting for longer durations, preventing sunlight from reaching the surface and affecting the radiation balance.
    - This was a reason for January 2023 colder than normal temperature in North India according to IMD. Light winds and high moisture near the land surface have been contributing to the formation of a blanket of fog over large swathes of the Indo-Gangetic plains in the morning.

IMPACT OF COLD WAVE IN INDIA

Economic Impact

- **Reduced Productivity**: Cold waves disrupt daily economic activities, particularly in sectors like construction, transportation, and outdoor labour.
- **Energy Demand Surge**: Increased demand for electricity and fuel for heating leads to higher energy costs.

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- During the **January 2023 cold wave**, electricity demand in northern India surged by **over 10%**, straining grids in states like Punjab and Haryana.

- **Tourism Loss**: Cold waves deter tourism in affected regions.
  - Harsh cold conditions in hill stations like Shimla and Manali during peak winters often lead to cancelled trips.
- **Healthcare Costs**: Rising hospitalizations due to cold-related illnesses increase public and private healthcare expenses.

Geographical Impact

- **Changes in Weather Patterns**: Persistent cold waves disrupt local climatic norms, contributing to extreme weather variability.
  - Weak western disturbances during winters have led to prolonged cold conditions in the **Indo-Gangetic Plains**.
- **Frost Formation**: Frost damages soil structure by reducing moisture levels and altering nutrient cycles.
  - Frost formation in **Rajasthan's mustard fields** reduces soil fertility in affected areas.

Impact on Agriculture

- **Crop Damage**: Low temperatures and frost severely damage standing crops like wheat, mustard, and vegetables.
  - In **Rajasthan (2020)**, mustard and gram production dropped significantly due to frost during the cold wave, causing losses worth **₹500 crores**.
- **Delayed Sowing Seasons**: Prolonged cold spells delay the sowing of Rabi crops.
  - Farmers in Uttar Pradesh and Bihar often delay wheat sowing due to extreme cold conditions.
- **Impact on Livestock**: Animals suffer hypothermia and reduced productivity during cold waves, affecting dairy and poultry industries.
  - The **2023 cold wave** in Punjab led to a decline in milk production by **5-10%**.

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Impact on Health

- **Cold-Related Illnesses**: Increased cases of hypothermia, frostbite, and respiratory ailments like asthma and pneumonia.
    - During the **Delhi cold wave of 2023**, hospitals reported a **30% rise** in cold-related illnesses.
- **Higher Mortality Rates**: Vulnerable populations, including the elderly and homeless, face increased mortality.
    - In **Uttar Pradesh**, over **200 deaths** were attributed to cold waves during the 2019 winter.
- **Mental Health**: Seasonal Affective Disorder (SAD), winter depression and stress due to harsh living conditions impact mental well-being.

Social Impact

- **Disruption of Daily Life**: Cold waves affect school attendance, transportation, and outdoor livelihoods.
    - During the **2023 cold wave**, several schools in Delhi and Uttar Pradesh remained closed for over a week.
- **Increased Vulnerability of Marginalized Groups**: Homeless populations and labourers working outdoors are the most affected.
    - NGOs reported a **15% rise** in demand for winter shelters in Delhi during the cold wave of **2021-22**.
- **Migration**: Extreme conditions drive temporary migration from rural to urban areas in search of warmer shelter and livelihoods.

Delhi Cold Wave (January 2023): Temperature dropped to **1.9°C**, leading to school closures and disruption of daily life.

Odisha Cold Wave (December 2021): Temperatures fell to **4°C**, causing damage to Rabi crops and affecting rural livelihoods.

Rajasthan Frost (2020): Mount Abu recorded **-4°C**, leading to significant losses in mustard and wheat cultivation.

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MEASURES TO BE FOLLOWED:

NDMA Guidelines

- **Early Warning Systems:** Collaborate with the **India Meteorological Department (IMD)** to provide timely weather forecasts and alerts. Use media, SMS, and digital platforms to disseminate cold wave warnings to the public.
    - IMD's **Color-Coded Alerts**: Green (Normal), Yellow (Be Aware), Orange (Be Prepared), and Red (Take Action).
- **Protection of Vulnerable Populations:** Establish night shelters with heating arrangements for the homeless and marginalized groups. Distribute blankets, warm clothing, and hot meals to affected populations.
    - Delhi government runs winter shelters during severe cold spells to protect the homeless.
- **Preparedness in Health Sector:** Ensure hospitals are equipped to handle cold-related ailments like hypothermia, frostbite, and respiratory issues. Train healthcare workers in managing cold-related emergencies.
- **Infrastructure Resilience:** Develop guidelines for constructing cold-resistant houses in vulnerable areas. Ensure adequate heating in public buildings like schools and hospitals.
- **Agriculture Support:** Issue advisories to farmers about protecting crops from frost by using irrigation or cover techniques. Provide financial assistance to farmers for crop losses due to cold waves.
- **Public Awareness Campaigns:** Conduct awareness drives on precautions during cold waves, such as wearing warm clothing and avoiding prolonged exposure. Use community radio and local leaders to spread information in rural areas.
- **Coordination and Response:** Set up dedicated cold wave task forces at state and district levels. Coordinate with NGOs and community organizations for relief distribution.

BEST PRACTICES BY INDIAN STATES:

- **Rajasthan's Frost Mitigation and Shelter initiatives**: Advises farmers to use light irrigation during frost conditions to protect mustard and wheat crops. Operates "Rain Baseras" (night shelters) for the homeless during cold waves.
- **Delhi's Winter Shelters and Energy support**: Delhi's government expands night shelters with heating facilities and blankets during severe cold spells. Subsidized electricity for heating appliances for low-income households.
- **Punjab and Haryana Crop Protection**: Disseminate advisories through Krishi Vigyan Kendras (KVKs) about using smoke or water sprinklers to prevent frost damage.
- **Uttar Pradesh Health Preparedness**: Sets up additional beds in hospitals for cold-related illnesses during winters.

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- **Himachal Pradesh Community Outreach**: Uses local administrative machinery to monitor vulnerable populations in remote and snow-covered regions.

BEST PRACTICES FROM OTHER COUNTRIES:

- **United States Cold Weather Shelters**: Local governments open temporary shelters equipped with heating and medical facilities during extreme cold. Cities like Chicago and New York implement "**Code Blue" plans**, activating shelters when temperatures drop significantly. The National Weather Service issues **Wind Chill Advisories** and **Cold Wave Alerts** to warn citizens.
- **Canada Community Warming Centres**: Municipalities establish warming centres during cold waves, offering temporary respite for the homeless. Enforces strict insulation and heating standards for homes and public buildings to withstand severe winters.
- **Russia Winter Infrastructure**: Heating systems are embedded into urban infrastructure, including public transport and residential buildings. Rapid response units are deployed to assist stranded vehicles or individuals during extreme cold spells.
- **United Kingdom Cold Weather Payment**: Low-income families and the elderly receive financial support to cope with heating costs during prolonged cold conditions. Issues a **Cold Weather Plan** with steps for communities, health services, and local governments to protect vulnerable groups.

PRACTICE QUESTION

Q. Cold waves in India pose significant challenges to human health, agriculture, and economic activities. Analyze the reasons behind their occurrence and their impact. Suggest measures to mitigate their effects. (15 marks, 250 words)

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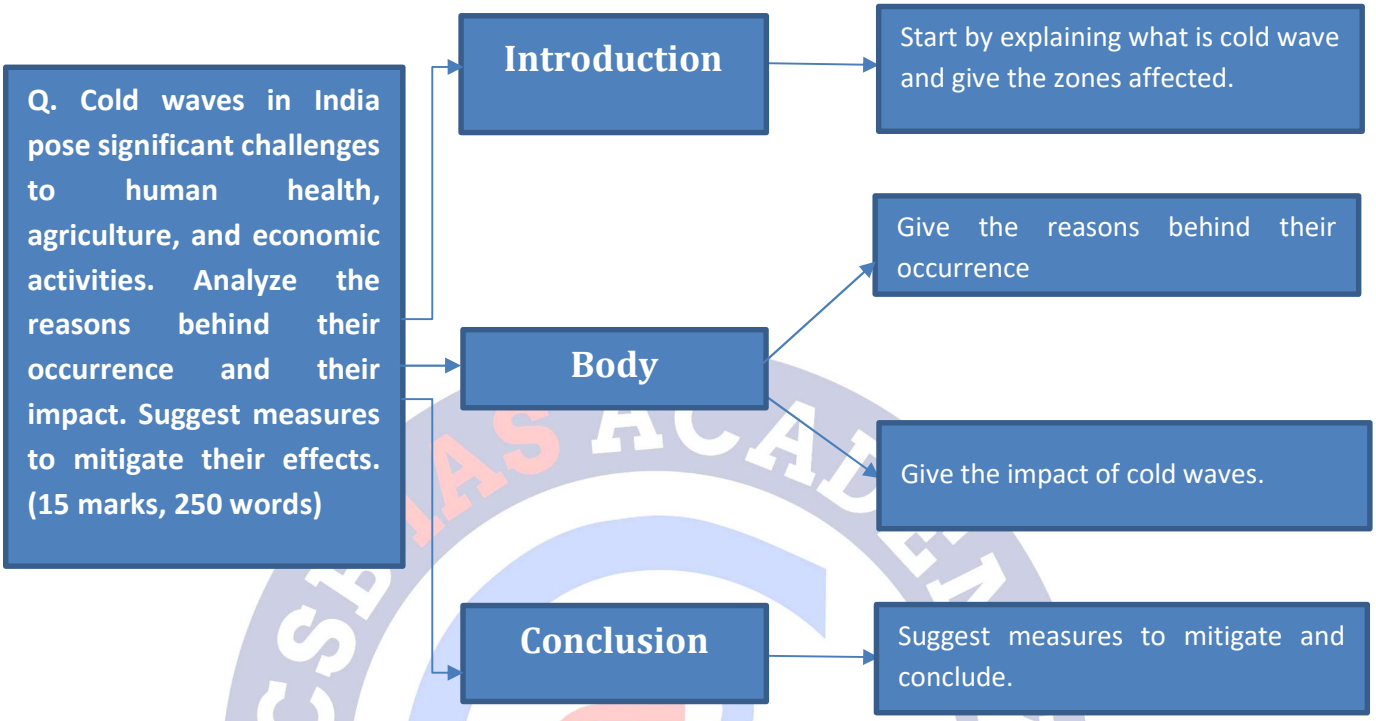
APPROACH



MODEL ANSWER

Cold Wave is considered when minimum temperature of a station is 10°C or less for plains and 0°C or less for hilly regions as per IMD. According to the **India Meteorological Department (IMD)**, cold waves are particularly severe in the **core cold wave zone**, comprising northern and central states such as Punjab, Rajasthan, Uttar Pradesh, and Madhya Pradesh.

CAUSES OF COLD WAVES

1. **Weather Patterns and Wind Systems**: Cold air from polar regions invades northern India through north westerly winds. Weak western disturbances reduce cloud cover, allowing rapid radiational cooling.
2. **Snowfall in the Himalayas**: Increases the albedo effect, cooling the surrounding regions and intensifying cold in the Indo-Gangetic plains.
3. **La Niña Effect**: Intensifies northeasterly winds, leading to unusually cold winters in India.
4. **High-Pressure Systems**: Persistent high-pressure zones block warm air masses, trapping cold air.

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IMPACT OF COLD WAVES

Economic Impact

- **Energy Demand Surge**: Increased demand for electricity and fuel for heating leads to higher energy costs. During the **January 2023 cold wave**, electricity demand in northern India surged by **over 10%**, straining grids in states like Punjab and Haryana.

Geographical Impact

- **Changes in Weather Patterns**: Persistent cold waves disrupt local climatic norms, contributing to extreme weather variability. Weak western disturbances during winters have led to prolonged cold conditions in the **Indo-Gangetic Plains**.
- **Frost Formation**: Frost damages soil structure by reducing moisture levels and altering nutrient cycles. Frost formation in **Rajasthan's mustard fields** reduces soil fertility in affected areas.

Impact on Agriculture

- **Crop Damage**: Low temperatures and frost severely damage standing crops like wheat, mustard, and vegetables. In **Rajasthan (2020)**, mustard and gram production dropped significantly due to frost during the cold wave, causing losses worth **₹500 crores**.
- **Impact on Livestock**: Animals suffer hypothermia and reduced productivity during cold waves, affecting dairy and poultry industries. The **2023 cold wave** in Punjab led to a decline in milk production by **5-10%**.

Impact on Health

- **Cold-Related Illnesses**: Increased cases of hypothermia, frostbite, and respiratory ailments like asthma and pneumonia. During the **Delhi cold wave of 2023**, hospitals reported a **30% rise** in cold-related illnesses.
- **Mental Health**: Seasonal Affective Disorder (SAD), winter depression and stress due to harsh living conditions impact mental well-being.

Social Impact

- **Disruption of Daily Life**: Cold waves affect school attendance, transportation, and outdoor livelihoods.
    - During the **2023 cold wave**, several schools in Delhi and Uttar Pradesh remained closed for over a week.

MEASURES TO MITIGATE COLD WAVES

- **Early Warning Systems:** Collaborate with the **India Meteorological Department (IMD)** to provide timely weather forecasts and alerts. Use media, SMS, and digital platforms to disseminate cold wave warnings to the public.
    - IMD's **Color-Coded Alerts**: Green (Normal), Yellow (Be Aware), Orange (Be Prepared), and Red (Take Action).
- **Protection of Vulnerable Populations:** Establish night shelters with heating arrangements for the homeless and marginalized groups. Distribute blankets, warm clothing, and hot meals to affected populations.
    - Delhi government runs winter shelters during severe cold spells to protect the homeless.
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- **Infrastructure Resilience:** Develop guidelines for constructing cold-resistant houses in vulnerable areas. Ensure adequate heating in public buildings like schools and hospitals.
- **Agriculture Support:** Issue advisories to farmers about protecting crops from frost by using irrigation or cover techniques. Provide financial assistance to farmers for crop losses due to cold waves.
- **Public Awareness Campaigns:** Conduct awareness drives on precautions during cold waves, such as wearing warm clothing and avoiding prolonged exposure. Use community radio and local leaders to spread information in rural areas.

Cold waves, driven by climatic and meteorological factors, significantly disrupt India's economy, health, and agriculture. A proactive approach combining NDMA guidelines, state interventions, and global best practices can mitigate their impact, ensuring the safety and well-being of vulnerable populations while safeguarding critical sectors.

23. AI SURVEILLANCE IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 2 > e-Governance >> Surveillance infrastructure

REFERENCE NEWS:

In 2019, the Indian government announced plans to create the world's largest facial recognition system for policing. Over the years, the use of Artificial Intelligence (AI)-powered surveillance systems has expanded, with deployments across railway stations and AI-enabled crime patrol initiatives by the Delhi Police with the recent plan of launching 50 AI-powered satellites, further intensifying **India's surveillance infrastructure**. However, the legal and constitutional challenges of such surveillance, particularly its implications for privacy and civil liberties, have become increasingly evident.

AI SURVEILLANCE:

AI Surveillance refers to the use of Artificial Intelligence (AI) technologies to monitor, analyze, and interpret data from various sources, such as video feeds, images, sensors, and communication systems, for security, governance, and public safety purposes. It involves tools like **facial recognition, predictive analytics, real-time data processing,** and **autonomous systems to enhance surveillance capabilities** beyond traditional methods.

Key Components of AI Surveillance

- **Facial Recognition Systems**: Identifies individuals by analyzing facial features from live or recorded footage.
- **Predictive Policing**: Uses historical crime data to forecast potential criminal activities or hotspots.
- **CCTV Integration**: Employs AI to monitor, detect, and analyze activities in public spaces.
- **Biometric Systems**: Tracks individuals using fingerprints, voice, iris, or other biological traits.
- **Drones and Satellites**: Equipped with AI to conduct aerial monitoring and gather real-time data.

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SIGNIFICANCE OF AI SURVEILLANCE WORLDWIDE:

- **Enhanced Public Safety**: AI surveillance enables real-time threat detection and quicker responses, improving public safety.
    - AI-powered systems helped Chinese authorities manage crowd control and track suspects during large public events.
- **Crime Prevention and Investigation**: Predictive policing tools analyze data to anticipate and mitigate criminal activities.
    - In the US, AI systems like PredPol are used to identify crime-prone areas.
- **Pandemic Management**: AI surveillance has been crucial in enforcing lockdowns, monitoring quarantine compliance, and contact tracing.
    - South Korea used AI-powered systems to track COVID-19 patients' movements effectively.
- **Disaster and Emergency Management**: AI-enabled drones and satellite systems provide real-time data for disaster response and recovery.
    - AI surveillance helped during Japan's earthquake and tsunami recovery efforts by assessing affected areas.
- **Border Security**: AI technologies assist in monitoring and securing national borders.
    - Israel uses AI-powered systems to detect unauthorized movements along its borders.
- **Smart City Development**: AI surveillance plays a role in traffic management, pollution monitoring, and urban planning.
    - Singapore’s smart city initiatives utilize AI to enhance urban security and resource management.
- **Counter-Terrorism**: AI surveillance is used to track and prevent terrorist activities by analyzing suspicious behavior and communications.
    - European countries employ AI to monitor high-risk zones and prevent attacks.

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INDIAN LEGAL SCENARIO OF AI SURVEILLANCE:

The legal framework for AI surveillance in India is still in its infancy.

- **Right to Privacy:** The **K.S. Puttaswamy vs Union of India (2017)** judgment recognized the right to privacy as a fundamental right under Article 21 of the Constitution. It extended privacy to include "**informational privacy,"** mandating that any data collection or surveillance must meet the **tests of legality, necessity, and proportionality.** AI surveillance, often implemented without clear laws or safeguards, risks violating these principles.
- **Principle of Proportionality:** Surveillance systems must be backed by law, pursue legitimate aims, and be proportionate to the goals. However, AI surveillance systems in India, like facial recognition and AI-powered satellites, operate without sufficient legislative scrutiny or risk assessments.
- **Digital Personal Data Protection Act (DPDPA), 2023:** Intended to regulate data privacy, the DPDPA addresses issues like consent and accountability in data processing. The Broad Exemptions in the law include:
  - Section 7(g): Waives consent for data processing during epidemics.
  - Section 7(i): Exempts government data processing related to employment.
  - These exemptions grant unchecked power to the government, undermining individual privacy protections.
  - **Citizen Obligations**: Section 15(c) requires citizens to provide accurate data, placing undue burdens on individuals while offering minimal protection against government overreach.
- **Lack of AI-Specific Legislation:** There are no laws specifically regulating AI-powered surveillance technologies. The **Digital India Act**, which is expected to address AI regulation, is still under development, leaving a regulatory void.
- **Existing Surveillance Mechanisms:** Laws like the **Information Technology Act, 2000** and **Indian Telegraph Act, 1885** allow the government to intercept and monitor communications under specific conditions. These laws do not cover modern AI-powered surveillance tools, such as real-time facial recognition or predictive policing.
- **Judicial Precedents on Surveillance:**
  - **PUCL vs Union of India (1997)** established safeguards for telephone tapping, such as judicial oversight and procedural guidelines. These principles are relevant for AI surveillance but have not been explicitly extended to AI technologies.
  - **Aadhaar Judgment (2018)**: Highlighted the need for proportionality in data collection and usage. The judgment emphasized the dangers of indiscriminate data collection, a critical issue in AI surveillance.

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CHALLENGES OF AI SURVEILLANCE IN INDIA:

The adoption of Artificial Intelligence (AI) for surveillance has opened new avenues for improving public safety and governance in India.

Social Challenges

- **Erosion of Privacy:** AI surveillance often results in the indiscriminate collection of personal data, undermining citizens' right to privacy. In the **K.S. Puttaswamy vs Union of India (2017)** case, the Supreme Court recognized privacy as a fundamental right. However, AI surveillance often operates without robust safeguards, leading to "**dragnet surveillance**." Hyderabad police's use of data from welfare schemes like **Samagra Vedika** raised questions about transparency in data usage.
- **Risk of Discrimination and Bias**: AI algorithms may inherit biases present in the training data, leading to profiling and discrimination. Global studies have shown that facial recognition systems are less accurate for minority groups and women, leading to higher rates of false positives. In India, surveillance systems could disproportionately target marginalized communities, exacerbating existing inequalities.
- **Public Distrust**: Lack of transparency in AI surveillance creates mistrust among citizens. The Telangana Police's extensive use of AI without clear public communication has raised concerns about potential misuse.

Legal Challenges

- **Absence of a Comprehensive Legal Framework**: India lacks specific laws to regulate AI-powered surveillance. No legislation currently mandates judicial oversight or accountability for AI surveillance practices.
- **Conflict with Constitutional Rights**: Surveillance activities may conflict with the right to privacy and proportionality principles outlined in the **Puttaswamy judgment**.
- **Lack of Independent Oversight**: There is no independent authority to monitor AI surveillance, increasing the risk of misuse. Unlike the EU, where strict regulations like the **AI Act** provide oversight, India's framework lacks such provisions.

Technological Challenges

- **Accuracy and Reliability**: AI systems, particularly facial recognition, often have high error rates, especially in diverse and dynamic environments. Global research shows facial recognition systems struggle with accuracy in countries like India, where diverse facial features, lighting, and environmental factors add complexity. Reports of **false positives** in facial recognition at railway stations have highlighted the system's limitations.

- **Cybersecurity Risks:** AI surveillance systems are vulnerable to hacking and data breaches. The **Telangana Police data breach** revealed sensitive citizen data, exposing the risks of poor cybersecurity in surveillance systems.
- **Lack of Interoperability**: Integrating AI systems with existing infrastructure is complex and resource-intensive. AI-driven systems in cities like Mumbai and Delhi often face compatibility issues with legacy surveillance systems, leading to inefficiencies.

Economic Challenges

- **High Implementation Costs**: Deploying AI-powered surveillance systems requires significant investment in hardware, software, and infrastructure. India plans to launch **50 AI-powered satellites**, demanding substantial public funds for development and maintenance. The cost of setting up facial recognition systems in **Hyderabad** and **Delhi** has been criticized for diverting resources from essential public services like healthcare and education.
- **Resource Inequality**: AI surveillance may widen the gap between resource-rich and resource-poor states. Wealthier states like Telangana and Maharashtra are better equipped to implement AI surveillance, while poorer states struggle to allocate funds. While Hyderabad leads in AI surveillance, states like Bihar and Uttar Pradesh lag in adopting such technologies due to financial constraints.
- **Dependence on Foreign Technology**: India relies heavily on imported AI technologies, increasing costs and creating dependencies. Most AI surveillance systems in India use software developed by global tech giants, raising concerns about data sovereignty.

WAY FORWARD TO ADDRESS LEGAL GAPS AND CHALLENGES IN AI SURVEILLANCE IN INDIA:

- **Enact Comprehensive AI-Specific Legislation:** Introduce a dedicated **AI Regulation Act** under the proposed **Digital India Act**, with specific provisions for AI surveillance. Risk-based categorization of AI applications (e.g., low-risk, high-risk, and unacceptable-risk activities), as seen in the **EU Artificial Intelligence Act**.
- **Proportionality and Necessity:** Ensure surveillance systems comply with the principles of **proportionality**, **legality**, and **necessity**, as mandated by the **K.S. Puttaswamy judgment**. Mandate that AI surveillance systems address legitimate aims and minimize intrusions into citizens' privacy.
- **Amend the Digital Personal Data Protection Act (DPDPA), 2023:** Revise Sections 7(g) and 7(i) to limit broad exemptions for government data processing. Empower individuals to challenge data misuse and impose stringent penalties for violations.
- **Introduce Consent and Accountability Mechanisms:** Ensure citizens are informed of what data is collected, how it will be used, and how long it will be stored. Mandate **independent audits** and **transparency reports** for all AI surveillance projects.

- **Establish Oversight Mechanisms:** Create a national-level **AI Ethics and Surveillance Commission** to oversee AI surveillance projects.
- **Judicial Oversight:** Mandate prior approval from courts or independent authorities for deploying high-risk AI surveillance systems. Ensure regular review of data collection and usage practices.
- **Develop Ethical AI Standards:** Draft a **Code of Ethics** for AI surveillance systems, focusing on fairness and non-discrimination in algorithm design and ensuring explainability and accountability in AI decision-making.
- **Adopt Risk-Based Approach:** Follow the **EU AI Act** model to categorize and regulate AI systems based on risk levels. Ban unacceptable-risk activities, such as social scoring or mass biometric surveillance. Enforce stringent checks for high-risk activities like facial recognition.
- **Integrate Lessons from Singapore and USA:** Use Singapore's **Model AI Governance Framework** as a guide to establish clear roles, responsibilities, and accountability in AI deployments. Implement clear guidelines on data retention and usage, akin to the **Privacy and Civil Liberties Oversight Board (PCLOB)** in the U.S. Strengthen public sector and private sector accountability in using surveillance tools.
- **Focus on Technological Improvements:** Enhance Cybersecurity by building indigenous capabilities. Reduce reliance on foreign AI technologies by promoting domestic research and development. Invest in indigenous AI systems that comply with India-specific legal and ethical standards.

PRACTICE QUESTION

Q. Examine the potential and challenges of AI-powered surveillance in India. Propose measures to ensure that AI Surveillance does not encroach upon fundamental rights. (15 marks, 250 words)

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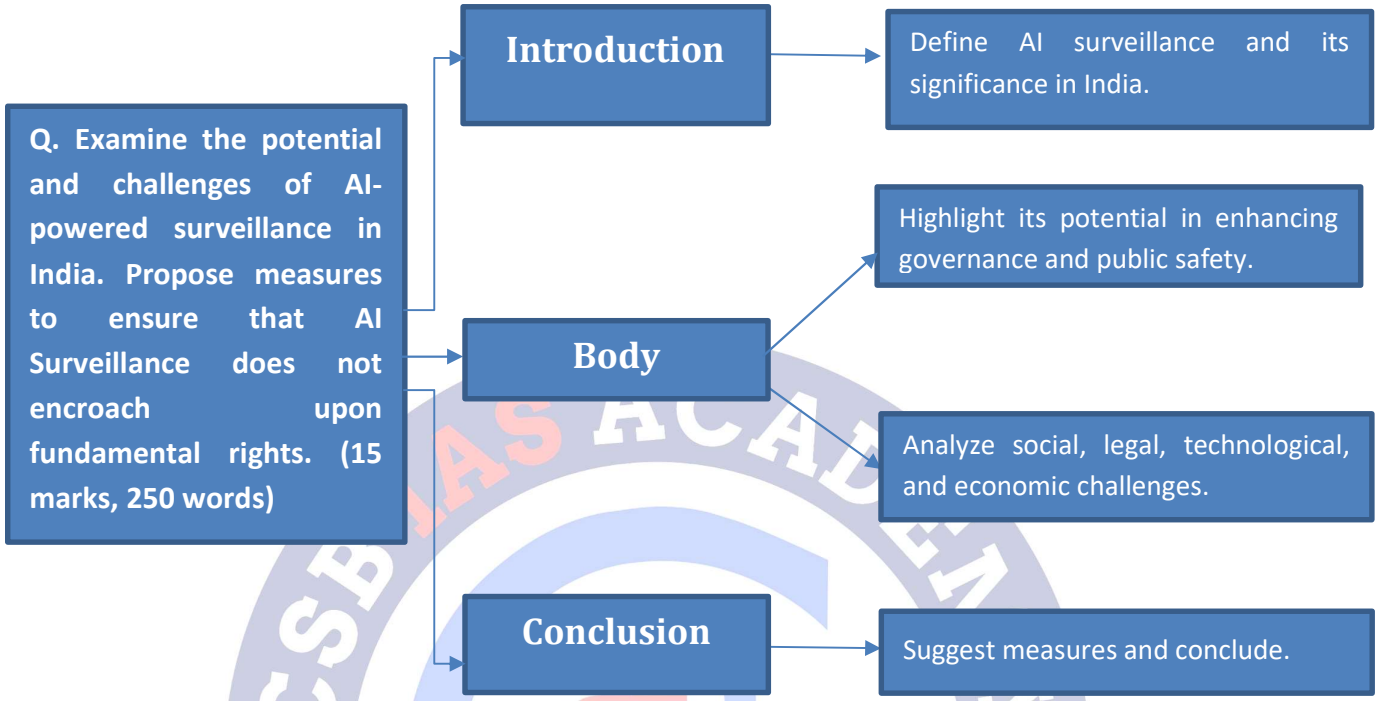
APPROACH



MODEL ANSWER

Artificial Intelligence (AI)-powered surveillance involves using AI technologies to monitor, analyze, and interpret data for governance, security, and public safety purposes. India, aiming to develop the world's largest facial recognition system, has deployed AI surveillance across railway stations, police patrols, and is planning 50 AI-powered satellites. While these systems offer transformative potential, they raise significant concerns about privacy, discrimination, and regulatory gaps.

POTENTIAL OF AI SURVEILLANCE IN INDIA:

1. **Enhanced Public Safety**: Real-time threat detection and quicker response to emergencies. AI-powered facial recognition systems at railway stations report 96% accuracy in identifying suspects.

2. **Crime Prevention and Investigation**: Predictive policing tools analyze historical crime data to identify hotspots. Delhi Police uses AI to monitor high-risk areas effectively.

3. **Disaster and Pandemic Management**: AI systems assist in monitoring lockdown compliance and managing disasters. Drones and AI tools were used extensively during COVID-19 to enforce restrictions.

4. **Urban Management and Border Security**: Supports smart city initiatives like traffic management and pollution control. Enhances border surveillance against unauthorized movements.

CHALLENGES OF AI SURVEILLANCE IN INDIA:

1. **Social Challenges**:
    - **Erosion of Privacy**: Indiscriminate data collection undermines citizens' right to privacy, as recognized in the **K.S. Puttaswamy vs Union of India (2017)** case.
    - **Discrimination and Bias**: AI algorithms may reinforce societal biases, disproportionately affecting marginalized communities.
    - **Public Distrust**: Lack of transparency fuels mistrust, exemplified by the **Telangana Police data breach** involving welfare databases.
2. **Legal Challenges**:
    - **Absence of Comprehensive Legislation**: India lacks specific laws for AI surveillance, relying on outdated frameworks like the **IT Act, 2000**.
    - **Broad Exemptions**: The **Digital Personal Data Protection Act (DPDPA), 2023**, provides unchecked powers for government data collection.
3. **Technological Challenges**:
    - **Accuracy Issues**: Facial recognition systems report higher error rates in diverse demographics.
    - **Cybersecurity Risks**: AI systems are vulnerable to data breaches, as seen in Hyderabad's surveillance operations.
    - **Interoperability Gaps**: Integrating AI with legacy systems is complex and resource-intensive.
4. **Economic Challenges**:
    - **High Costs**: Deploying AI surveillance, like the planned 50 AI-powered satellites, diverts funds from critical sectors like healthcare.
    - **Resource Inequality**: Wealthier states like Telangana lead adoption, while poorer states like Bihar lag behind.

- **Dependence on Foreign Technology**: Heavy reliance on imported AI tools raises concerns about data sovereignty.

MEASURES TO ADDRESS CHALLENGES:

1. **Legislative Reforms**: Enact a **dedicated AI Regulation Act** under the **Digital India Act**, categorizing AI activities by risk levels (e.g., low-risk, high-risk, unacceptable-risk). Revise the DPDPA to narrow exemptions and ensure accountability in government data processing.
2. **Independent Oversight Mechanisms**: Establish a national **AI Ethics and Surveillance Commission** to approve and monitor AI projects. Introduce judicial oversight for deploying high-risk systems like real-time facial recognition.
3. **Adopt Global Best Practices**: Follow the **EU AI Act** to ban mass biometric surveillance without judicial approval. Integrate Singapore's **Model AI Governance Framework** for ethical and accountable AI deployments.
4. **Technological Improvements**: Develop indigenous AI technologies to reduce dependence on foreign systems. Enhance cybersecurity to protect AI surveillance data from breaches.
5. **Promote Transparency and Public Awareness**: Mandate public disclosure of data collection practices, including purpose and retention periods. Launch awareness campaigns to educate citizens about their rights.
6. **Address Social Concerns**: Mitigate algorithmic biases through diverse training datasets and periodic audits. Prioritize community engagement to build trust in surveillance initiatives.

AI surveillance offers transformative potential for governance and public safety in India, but its unchecked deployment risks infringing on constitutional rights and privacy. A comprehensive legal framework, inspired by global best practices and tailored to India's unique challenges, is essential to balance innovation with civil liberties. With transparency, accountability, and robust oversight, AI can serve as a tool for empowerment rather than control.

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24. INDIA'S DISASTER PREPAREDNESS

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Disaster Management >> Disaster Preparedness

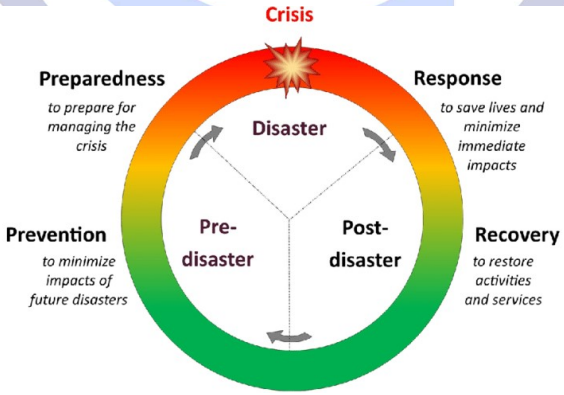
REFERENCE NEWS:

Union Minister of State (Independent Charge) for Science and Technology, Earth Sciences, Dr Jitendra Singh, said the country has emerged as a **global leader in disaster warning** and is catering to other nations as well. The Minister was addressing the commemorative function on the 20th anniversary of the 2004 Indian Ocean Tsunami at the Indian National Centre for Ocean Information Services (INCOIS) in Hyderabad.

DISASTER MANAGEMENT ECOSYSTEM IN INDIA:

Disaster management in India has evolved significantly over time, shaped by diverse natural hazards, growing population density, urbanization, and climate change. India's disaster management framework integrates mitigation, preparedness, response, recovery, and resilience-building efforts.

India moved from a **relief-focussed approach** in the late 20th century to a **proactive and holistic approach** in disaster readiness and resilience with Disaster Management Act, 2005.



DISASTER MANAGEMENT ACT 2005:

- **Establishment of Authorities:** Act establishes a **three-tier structure** for disaster management.

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- **National Disaster Management Authority (NDMA):** Headed by the Prime Minister, responsible for formulating policies, plans, and guidelines for disaster management at the national level.
- **State Disaster Management Authorities (SDMAs):** Headed by the Chief Ministers, responsible for disaster management at the state level.
- **District Disaster Management Authorities (DDMAs):** Led by the District Magistrate, responsible for implementing disaster management plans at the district level.

- **National Disaster Response Force (NDRF):** Establishes NDRF for specialized response to disasters, including search and rescue operations, medical aid, and relief distribution.
- **Funding Mechanisms:** Provides for the creation of the National Disaster Response Fund (NDRF) and State Disaster Response Funds (SDRF) to finance relief and response measures.
- **National Institute of Disaster Management (NIDM): Act established NIDM** for disaster-related research, training, awareness, and capacity building.

DISASTER WARNING SYSTEMS:

- **Cyclones and Storms: Indian Meteorological Department (IMD)** monitors and forecasts cyclones using satellite data, Doppler weather radars, and global weather models. Provides five-stage cyclone warnings pre-cyclone watch, cyclone alert, cyclone warning, post-landfall outlook, and de-warning.
  - **Cyclone Phailin (2013)**: IMD's accurate prediction and timely warnings minimized casualties to under 50, compared to the 10,000+ deaths during the 1999 cyclone.
- **Floods: Central Water Commission (CWC)** operates a flood forecasting system covering over 1,000 river points. Provides warnings based on river flow data and rainfall patterns.
  - During the **Assam floods (2022)**, CWC issued advance warnings, aiding evacuation efforts in flood-prone districts.
- **Tsunamis: Indian Ocean Tsunami Warning and Mitigation System** which provides critical tsunami warning and mitigation services to 27 Indian Ocean Basin countries
- **Earthquakes: National Seismological Centre (NSC)** monitors seismic activity using a network of 115 observatories. Issues alerts for earthquakes, although precise prediction remains challenging.
  - Alerts during the **2015 Nepal Earthquake** helped Indian agencies prepare for aftershocks.

  Landslides: Indian Space Research Organisation (ISRO) and Geological Survey of India (GSI) use satellite imagery and field data for real-time monitoring of landslide-prone areas.
  - GSI's warnings during the **Himalayan Landslide Crisis (2021)** aided in pre-emptive evacuations in Uttarakhand.

- **Heatwaves and Coldwaves: IMD** issues heatwave and coldwave warnings based on temperature forecasts and thresholds.
    - **2022 Heatwaves in North India**: Early warnings led to awareness campaigns and distribution of water supplies.
- **Lightning warnings:** Damini apps
- **Aapda Mitra Scheme:** The scheme is a central sector scheme by the National Disaster Management Authority (NDMA) that trains community volunteers to respond to disasters.
- **Forest Fires: Forest Fire Monitoring System** (developed by Forest Survey of India and NRSC) uses satellite imagery to detect hotspots and issues alerts to state forest departments.
    - Detected and alerted about forest fires in **Uttarakhand (2023)**, enabling quicker response.

DISASTER MANAGEMENT (AMENDMENT) BILL, 2024: Recently, the Union Government introduced Disaster Management (Amendment) Bill, 2024 in Lok Sabha to amend **Disaster Management Act, 2005**. The Bill aims to mainstream **disaster management in development plans,** aligning with recommendations of **15th Finance Commission.**

- **National Disaster Management Authority (NDMA) and State Disaster Management Authority (SDMA)** will prepare DM plans unlike National Executive Committee and State Executive committee preparing DM plans for centre and state respectively in as in 2005 Act.
- Bill adds new functions for these authorities such as **taking periodic stock** of disaster risks, p**roviding technical assistance** to authorities, recommending **guidelines for minimum standards of relief** and preparing national and state disaster **databases.**
- Contain information on type & severity of disaster risks, allocation of funds and expenditure, and disaster preparedness and mitigation plans.
- Bill empowers NDMA to specify the number and category of officers and employees, with previous approval of the central government.
- Bill empowers state government to constitute a separate **Urban Disaster Management Authority (UDMA)** for state capitals and cities with a municipal corporation except for Delhi and Chandigarh.
- Bill empowers state government to constitute a **State Disaster Response Force** (SDRF). State government will **define functions of SDRF** and **prescribe terms of service** for its members which is a new provision compared to 2005 Act.
- Bill provides **statutory status** to National Crisis Management Committee and High-Level Committee. NCMC will function as the **nodal body for dealing with major disasters** with serious or national ramifications. HLC will provide **financial assistance to state governments during disasters.** The NCMC will be led by the **Cabinet Secretary,** and the HLC by the **Minister of department overseeing disaster management.**

CHALLENGES OF DISASTER MANAGEMENT ECOSYSTEM OF INDIA:

- **Institutional and Coordination Gaps**: The new Bill grants excessive rulemaking power to Central government through delegated legislation. Also, the Bill of 2024 is a test of constitutionality as D**isaster Management is not mentioned in Seventh Schedule.**
- **Insufficient Early Warning Systems**: While advancements have been made, gaps remain in disseminating accurate and timely warnings to vulnerable populations, particularly in remote areas.
    - **Chamoli Flash Floods (2021)**: The absence of real-time glacier monitoring systems contributed to the unexpected nature of the disaster.
    - **Cyclone Amphan (2020)**: Although warnings were issued, many areas lacked proper dissemination channels to ensure timely evacuation.
- **Resource and Capacity Constraints**: A lack of trained personnel, financial resources, and modern equipment affects disaster response and mitigation efforts. The new Bill inclusion of UDMA will put a financial constraint on Urban Local bodies to set up, equip and run UDMAs.
    - **Bihar Floods (2020)**: Relief measures were delayed due to inadequate funds and logistics at the district level.
- **Urbanization and Infrastructure Challenges**: Unplanned urbanization and poorly regulated construction increase vulnerability to disasters, particularly earthquakes and floods. There has been weak implementation of building codes and land use planning.
    - **Mumbai Floods (2005, 2019)**: Encroachments on drainage systems and poor urban planning led to severe flooding and loss of life.
    - **Gujarat Earthquake (2001)**: Many buildings collapsed due to non-compliance with earthquake-resistant construction standards.
- **Climate Change and Environmental Degradation**: Climate change amplifies the frequency and intensity of natural disasters, while environmental degradation exacerbates their impact. The new Bill fails to mention the affected animal community.
    - **Cyclone Tauktae (2021)** and **Cyclone Yaas (2021)**: Increased intensity of cyclones due to warming ocean temperatures.
    - **Himalayan Glacial Melts**: Accelerated glacier melting due to global warming leads to flash floods and GLOFs (Glacial Lake Outburst Floods).
- **Community Awareness and Preparedness**: Limited public awareness and involvement in disaster preparedness programs reduce the effectiveness of early warnings and evacuation efforts. Also lack of last mile connectivity in many disaster-prone areas pose a major threat to evacuation and rehabilitation processes in the wake of a disaster.

- **Cyclone Phailin (2013)**: The success in minimizing casualties was due to Odisha's robust community awareness programs, unlike earlier disasters like the **1999 Super Cyclone**.
- Lack of awareness contributed to the loss of life during **heatwaves in North India** in 2022.

- **Insufficient Integration of Technology**: Limited use of advanced technologies like Artificial Intelligence (AI), GIS, and big data analytics in disaster prediction and management.
  - The absence of predictive analytics in monitoring Himalayan glaciers delayed risk assessment in Uttarakhand before the 2021 floods. Cyclone tracking improved significantly with IMD upgrades, but rural outreach of data remains a challenge.
- **Overreliance on Reactive Measures**: The focus often remains on relief and rehabilitation rather than pre-emptive risk reduction and resilience building.
  - Post-disaster relief efforts in the **Assam Floods (2022)** overshadowed long-term floodplain management.
  - Landslide-prone areas in the Western Ghats lack systematic mitigation measures.
- **Socioeconomic Inequalities**: Vulnerable populations, including low-income groups and marginalized communities, face disproportionate impacts due to limited access to resources. The new bill also fail to address intersectional discrimination.
  - **COVID-19 Pandemic**: Migrant workers faced significant hardships due to lack of support systems during lockdowns.
- **Delayed Policy Implementation**: Policies like the **National Action Plan on Climate Change (NAPCC)** and the **National Flood Management Plan** often face delays in implementation due to bureaucratic hurdles.
  - The **Compensatory Afforestation Program** aimed at mitigating deforestation impacts saw slow progress due to administrative bottlenecks.
- **Disaster Data and Risk Mapping Deficits**: Inadequate data collection and risk mapping hinder informed decision-making.
  - The absence of detailed vulnerability maps led to under preparedness during the **Uttarakhand Cloudburst (2013)**.
- **Integration of Traditional Knowledge**: Traditional knowledge, which could enhance resilience, is often overlooked in favour of modern techniques.
  - Indigenous flood management practices in Assam's Brahmaputra valley are not systematically integrated into state policies.

WAY FORWARD:

- **Strengthening Early Warning Systems:** Align with the **Sendai Framework for Disaster Risk Reduction** for enhanced early warning systems. **Japan's Earthquake Early Warning System** uses advanced seismic sensors to provide alerts within seconds, significantly reducing casualties.
- **Community-Based Disaster Risk Reduction (CBDRR):** Follow **Costa Rica's Community Preparedness Programs**, which incentivize local participation in disaster resilience. **Bangladesh's Cyclone Preparedness Programme (CPP)** effectively integrates community volunteers for early warnings and evacuations.
- **Climate-Resilient Infrastructure:** Use the **Resilient Cities Framework** of the UN Office for Disaster Risk Reduction (UNDRR) for urban planning.
- **Leveraging Technology and Innovation:** Adopt the **Global Multi-Hazard Alert System (GMAS)** for disaster forecasting and alerts.
- **Financial Mechanisms for Risk Reduction:** Follow **Mexico's Disaster Risk Financing Model**, which uses parametric insurance to cover disaster losses. **Caribbean Catastrophe Risk Insurance Facility (CCRIF)** pools risks across nations for efficient recovery.
- **Strengthening Institutional Mechanisms:** Adopt the **Incident Command System (ICS)**, widely used in the US, for a coordinated disaster response framework. **FEMA (Federal Emergency Management Agency)** in the US integrates local, state, and federal disaster management efforts seamlessly.
- **Public Awareness and Education:** Follow Japan's **Disaster Education Model**, which incorporates disaster preparedness into school curriculums.
- **Urban Resilience and Risk Mapping:** Use **UNDRR's Making Cities Resilient 2030 (MCR2030)** framework for urban disaster planning. **Singapore's Urban Resilience Program** integrates risk mapping with development planning.
- **International Collaboration:** Strengthen participation in global initiatives like the **Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR)**. Japan's collaboration with ASEAN countries for capacity building and disaster management. As in Yokohama Strategy, focus on developing countries disaster readiness.
- **Integrating Disaster Risk Reduction with Climate Policies:** Align with the **Paris Agreement** and the **Sendai Framework** for integrating climate adaptation into disaster management.

PRACTICE QUESTION

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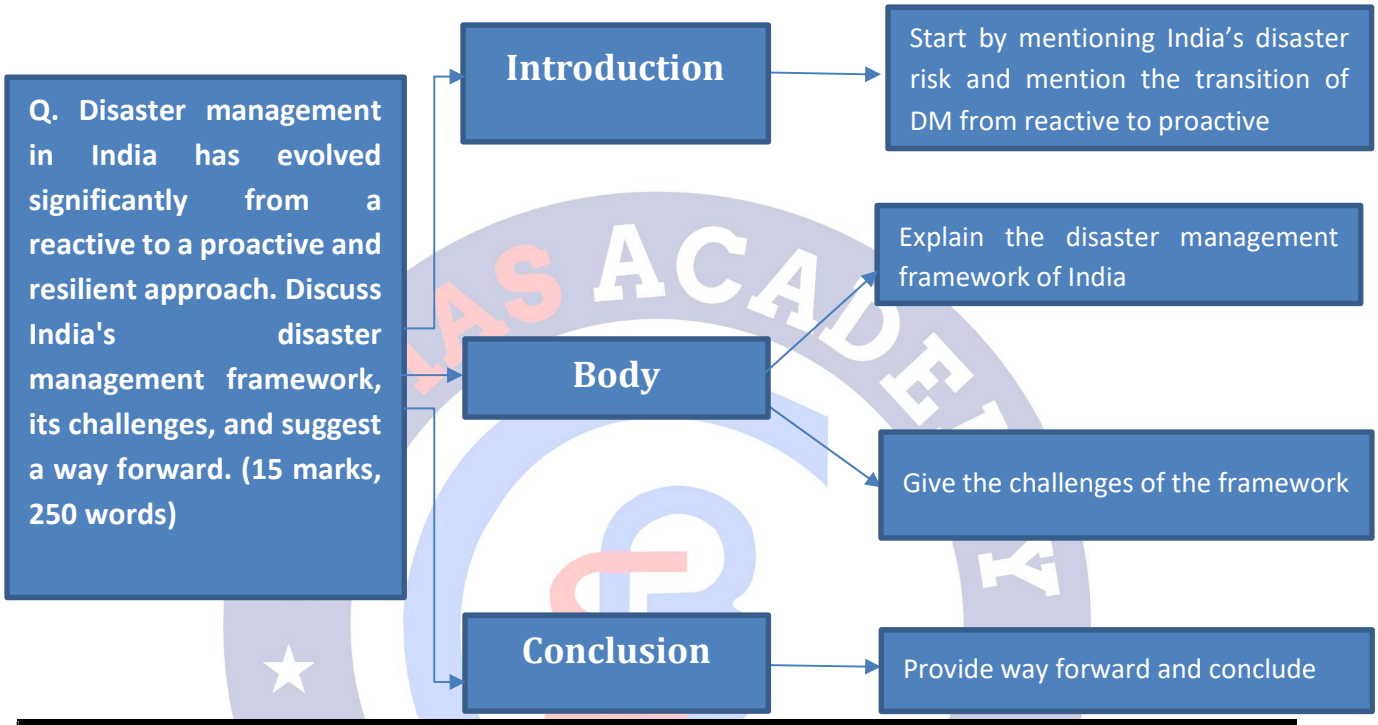
Q. Disaster management in India has evolved significantly from a reactive to a proactive and resilient approach. Discuss India's disaster management framework, its challenges, and suggest a way forward. (15 marks, 250 words)

APPROACH



MODEL ANSWER

India ranks third among 193 countries that are most vulnerable to the risk of a disaster, according to the World Risk Report 2024. The enactment of the **Disaster Management Act, 2005** marked a paradigm shift from a reactive approach to proactive disaster risk reduction.

EVOLUTION OF DISASTER MANAGEMENT FROM REACTIVE TO PROACTIVE AND RESILIENT

1. Reactive Approach (Pre-2000s): Disaster management was limited to post-event responses, including rescue operations, relief distribution, and temporary rehabilitation. No comprehensive framework or dedicated agencies for disaster risk management.

- **Bengal Famine (1943)** and **Bihar Earthquake (1934)**: Responses were ad-hoc and lacked coordination.
- **Odisha Super Cyclone (1999)**: Over 10,000 fatalities highlighted inadequate preparedness and early warning mechanisms.

2. Transition Phase (2000-2005): The devastation caused by disasters like the Odisha Super Cyclone (1999), Bhuj Earthquake (2001), and the Indian Ocean Tsunami (2004) emphasized the need for a structured approach. International frameworks like the **Hyogo Framework for Action (2005-2015)** inspired India to adopt proactive disaster risk management strategies. Establishment of the **Indian National Centre for Ocean Information Services (INCOIS)** for tsunami warnings. Development of **National Cyclone Risk Mitigation Projects** for vulnerable coastal areas.

3. Proactive Approach (Post-2005): Disaster Management Act, 2005 marked a paradigm shift in India's disaster management by institutionalizing a comprehensive legal and policy framework.

Emphasis on Preparedness and Mitigation: Development of disaster management plans at national, state, and district levels. Incorporation of climate adaptation strategies into disaster management policies.

- **Cyclone Phailin (2013)**: Early warnings and evacuations by IMD and NDMA minimized casualties to less than 50, a stark contrast to the Odisha Super Cyclone of 1999.

4. Resilient Approach (Present Era): **Integration with Development Planning** such as Disaster risk reduction (DRR) has become integral to sustainable development goals. The **Sendai Framework for Disaster Risk Reduction (2015-2030)** emphasizes building resilience and reducing vulnerabilities. **Technology-Driven Early Warning Systems** like use of satellites, Doppler radars, and IoT for real-time monitoring.

INDIA'S DISASTER MANAGEMENT FRAMEWORK

- **Disaster Management Act, 2005** established a three-tier structure:
  - **NDMA** at the national level, headed by the Prime Minister.
  - **SDMAs** at the state level, led by Chief Ministers.
  - **DDMAs** at the district level, headed by District Collectors.
  - Creation of **NDRF** for specialized disaster response.
- **Early Warning Systems**:
  - **IMD** provides cyclone, heatwave, and coldwave warnings.
  - **INCOIS** offers tsunami warnings, catering to 27 Indian Ocean countries.
- **Capacity Building**: **National Institute of Disaster Management (NIDM)** focuses on training and research. Programs like **Aapda Mitra** train community volunteers for disaster response.
- **Funding Mechanisms**: Establishment of **National Disaster Response Fund (NDRF)** and **State Disaster Response Funds (SDRF)** to finance relief and mitigation.

- **Technological Integration**: Use of satellites (e.g., INSAT-3DR), Doppler radars, and GIS for real-time monitoring.

CHALLENGES

1. **Institutional and Coordination Gaps**: Overlapping responsibilities between central and state agencies lead to delays.
    - **Chamoli Flash Floods (2021)** highlighted the lack of real-time monitoring systems.
2. **Resource Constraints**: Insufficient funding and trained personnel impact disaster response.
    - **Forest fires in Uttarakhand (2023)** prolonged due to limited firefighting resources.
3. **Urbanization and Infrastructure**: Unplanned urban growth exacerbates disaster risks.
    - **Mumbai Floods (2005, 2019)** due to encroachments on drainage systems.
4. **Climate Change**: Increased frequency and intensity of disasters like cyclones and floods.
    - **Cyclones Tauktae and Yaas (2021)** intensified due to warming oceans.
5. **Community Awareness**: Limited public awareness reduces evacuation and preparedness effectiveness.
    - Heatwave fatalities in North India (2022) due to lack of awareness.
6. **Technological Gaps**: Inadequate integration of AI, big data, and predictive analytics.
    - Delayed risk assessment before **Uttarakhand Glacier Burst (2021)**.

WAY FORWARD

1. **Align with Global Best Practices**: **Sendai Framework for Disaster Risk Reduction**: Focus on reducing vulnerabilities.
    - Japan's **Earthquake Early Warning System** uses seismic sensors to issue alerts within seconds.
2. **Strengthen Early Warning Systems**: Expand Doppler radar and real-time glacier monitoring networks.
3. **Promote Community-Based Disaster Risk Reduction**: Adopt Costa Rica's model of incentivizing local participation. Strengthen programs like **Aapda Mitra**.

4. **Climate-Resilient Infrastructure**: Use the **Resilient Cities Framework (UNDRR)** for urban planning. Build cyclone shelters and flood-resistant housing.
5. **Leverage Technology**: Use AI, IoT, and big data analytics for disaster forecasting. Collaborate with global tech leaders to enhance prediction capabilities.
6. **Institutional Reforms**: Implement the **Disaster Management (Amendment) Bill, 2024**. Creation of **Urban Disaster Management Authorities (UDMAs)**. Establish state disaster databases for informed planning.
7. **Public Awareness and Education**: Incorporate disaster preparedness into school curriculums. Conduct regular mock drills, especially in high-risk zones.
8. **International Collaboration**: Engage with global initiatives like the **Asian Ministerial Conference on Disaster Risk Reduction**.

India's disaster management framework has made significant strides, but challenges remain. By integrating global best practices such as Hyogo framework, Sendai framework, leveraging technology, and enhancing community participation, India can build a resilient and inclusive disaster management ecosystem, reducing vulnerabilities and safeguarding development.

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25. INLAND WATERWAYS

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Industry and infrastructure

REFERENCE NEWS:

- Recently, the Indian government launched the ambitious **'Jalvahak' scheme** with an aim to revolutionize **long-haul cargo movement** using inland waterways.
- Unveiled by Union Minister of Ports, Shipping, and Waterways at the GR Jetty in Kolkata, the scheme marks a strategic push to promote sustainable and cost-effective transportation through **National Waterways (NW) on the Ganga, Brahmaputra, and Barak rivers.**

KEY HIGHLIGHTS OF THE JALVAHAK SCHEME

Objective:

- Boost long-haul cargo movement.
- Incentivize cargo transportation on inland waterways.
- Decongest road and rail transport systems.

Incentives Offered

- **Reimbursement**: Up to **35%** of the total operating expenditure incurred on waterways.
- **Coverage**: National Waterways **NW1 (Ganga)**, **NW2 (Brahmaputra)**, and **NW16 (Barak River)** via the **Indo-Bangladesh Protocol Route (IBPR)**.
- **Eligible Stakeholders**: Cargo owners, vessel operators, freight forwarders, and shipping companies.

Fixed Day Scheduled Sailing Service

- **The** Fixed Day Scheduled Sailing Service ensures predictable cargo delivery across major waterways. For example, the transit time from **Kolkata to Patna (NW1)** is **7 days**, while the route from **Kolkata to Pandu (NW2 via IBPR)** takes **18 days**.

INLAND WATER TRANSPORT IN INDIA:

- India has an extensive network of inland waterways comprising **rivers, canals, backwaters, and creeks.**
- Of the **total navigable length of 20,236 km**, 17,980 km consists of rivers, and 2,256 km is made up of canals, both suitable for mechanised craft (Source: Inland Waterways Authority of India (IWAI)).
- As per **National Waterways Act, 2016**, there are **111 National Waterways** in the country.

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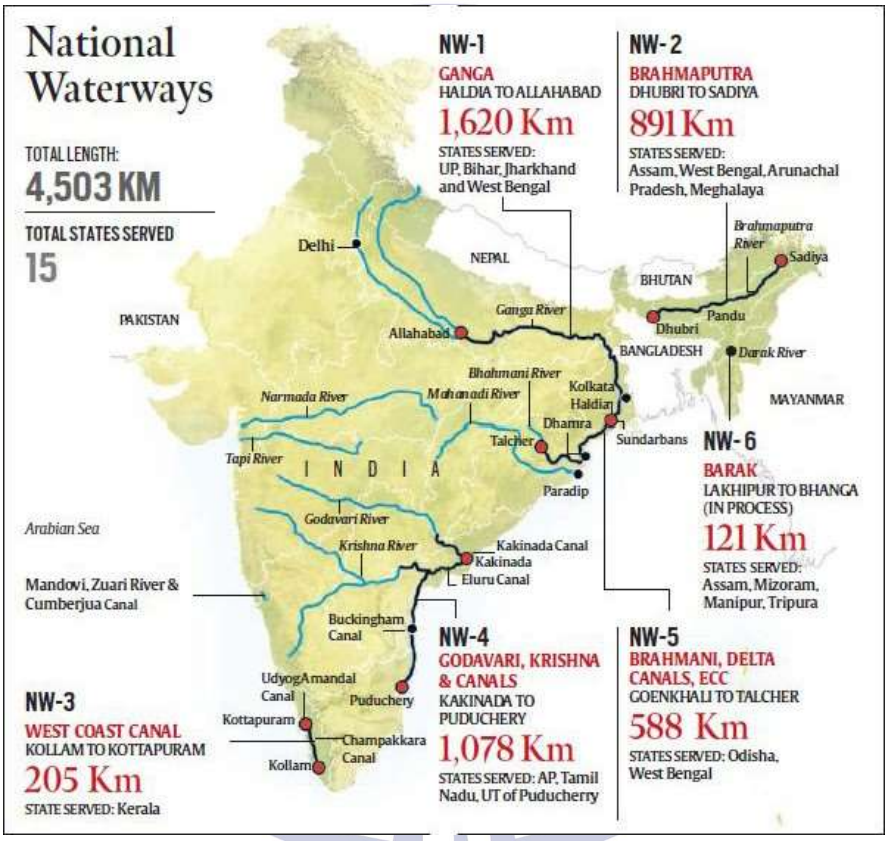
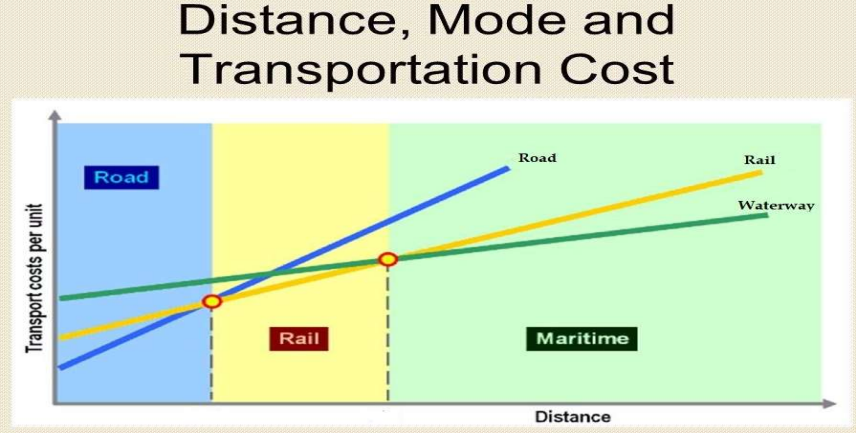
- While India has a vast network of inland waterways, they **remain significantly underutilized** compared to global standards. In the USA, rivers and canals handle over **12%** of cargo transport, while in China, more than **15%** of cargo moves via waterways. In contrast, India utilizes **less than 3%** of its waterways for cargo transport.
- India's inland waterways have seen remarkable growth, with cargo transport increasing from **18 million MT in 2013-14** to **133 million MT in 2023-24**—a growth of over **700%**, as per the **Ministry of Ports, Shipping, and Waterways.**
- The government now targets **200 million MT by 2030** and **500 million MT by 2047**, highlighting the potential of our rivers as a sustainable and efficient transport alternative.



WHY INLAND WATERWAYS?

- **Low capital cost**:
  - The development cost of inland water way is less when compared with the equivalent development cost of railway and four lane expressways, as it involves **nominal land acquisition and infrastructure**.
- **Reduce logistics cost:**
  - As per a study carried out by RITES(Rail India Technical and Economic Service), one litre of fuel will move **24 tons through one kilometre on road, 95 on rail and 215 kilometres** on inland water transport. Hence, IWT can reduce the cost of logistics.



- **Improve India's competitiveness:**
  - The current logistics cost of India is 14 % of GDP, while in the US and Europe, it ranges between 8-10%. This reduces competitiveness of Indian exports in the international markets. By developing Inland transport, India can reduce the logistics cost and enhance competitiveness.
- **Less polluting mode of transportation:**
  - Water transport is among the least polluting modes of transport.

Factors considered	Rates Considered (Rs./TKm)		
	Waterways	Road	Rail
Air Pollution	0.03	0.202	0.0366
Noise Pollution	Negligible	0.0032	0.0012
Soil and Water Pollution	Negligible	0.005	Negligible

- **Reduce burden on other modes**:
  - India has an unbalanced logistics modal mix. **Road transport carries ~60% of total freight movement** while IWT remains under utilized at a share of 2% in India's modal mix. Development of IWT can help resolve this issue.
- **Facilitate regional development:**
  - Movement of goods and passengers through inland waterways necessitate setting up large number of loading/unloading points. This facilitates the creation of infrastructure and diffusion of information into India's hinterlands, leading to their development.
  - For instance, for regions **like Bihar and Assam**, often underserved in logistics infrastructure, the Jalvahak scheme is a game-changer. It **creates jobs** for vessel operators, local dock workers, and logistical chains, **benefiting communities along riverbanks. Farmers and manufacturers** can now look forward to **faster, cheaper, and greener cargo movement**.

- **Development of North East India:**
  - India has **agreements with Bangladesh and Myanmar** that facilitate transshipment of goods through Bangladesh and Myanmar waters. Developments on these lines will enable quicker shipments and deeper market penetration to the North Eastern parts of the country.
- **Promote employment:**
  - IWTs can generate employment in the country. For example, tourism and fisheries could expand to the inland areas of the country and create alternate sources of income for the people.

GOVERNMENT EFFORTS

Inland Waterways Authority of India (IWAI):

- Established in **1986** to develop and maintain inland waterways infrastructure on national waterways.
- Headquartered in **Noida**, with regional offices in Patna, Kolkata, Guwahati, and Kochi.
- Under **Maritime India Vision 2030**, IWAI aims to increase the **modal share of freight movement** through IWT from **2% to 5%** and traffic volume to over **200 MMT** by **2030**.

National Waterways Act, 2016:

- Repealed earlier Acts and brought all national waterways under one regulation for shipping and navigation.

Jal Marg Vikas Project (JMVP):

- Focuses on **capacity augmentation of NW-1** (Ganga River) with World Bank support at a cost of **₹5,369.18 crore**.

Project Arth Ganga (JMVP-II):

- Promotes local economic activities along Ganga River with plans for **40 floating jetties** and **10 Ro-Ro terminals** to reduce logistics costs.

Inland Vessels Act, 2021:

- Introduced a **uniform regulatory framework** for vessel navigation, construction, registration, and operation, replacing the 1917 Act.

Development of New National Waterways:

- IWAI has identified **25 new NWs** for technical interventions to enhance navigability.

Digital Solutions for Ease of Doing Business:

- **CAR-D Portal**: Manages and disseminates cargo and cruise movement data.
- **PANI Portal**: Integrates river navigation and infrastructure information on a single platform.

Other Initiatives:

- Promotes **private participation** in terminal operations and maintenance.
- Plans to link waterways with **eastern and western Dedicated Freight Corridors (DFCs)** and the **Sagarmala Project** to enable seamless cargo movement.

CHALLENGES:

- **Hydrological challenges:**

    - The depth of most waterways is not uniform throughout the year. **Siltation and the seasonal variations** in regime of rivers do not offer navigability through the year.
    - For example, one of the major problems for a commercially viable and safe navigation on NW-1 is **low depth upstream of Farakka** due to low discharges from tributaries and difficult hydro morphological characteristics of river Ganga.
- **Ecological concerns:**
    - Riverine systems in the country are home to an array of endangered fauna, like the riverine dolphins, Gharials and migratory birds. **Activities like dredging and dumping from vessels** could pose challenge to these ecosystems.
- **Competing needs:**
    - Water has important competing uses, viz. **need for living as well as for irrigation, power generation** etc. There is also the **issue of interstate water disputes**.
    - For instance, **diversion of water for irrigation** by upper riparian state can reduce the navigability in the lower riparian states.
- **Overlapping jurisdiction:**
    - In the Constitution, water is a matter in the **State List**, **subject to the provision of Entry 56 of Union List** (Related to regulation of inter-state rivers).
    - Also, Central government has exclusive **jurisdiction only on national waterways**, whereas the utilisation/sailing of vessels in other waterways is within the concurrent list or is in the jurisdiction of the respective state governments.
- **Last mile connectivity:**
    - Inland water transportation is not as flexible as roads and railways. They can be **carried out only on rivers with sufficient volume of water and waterfront locations**. Hence, they require integration with other modes for last mile connectivity.
- **Operational challenges:**
    - The 111 waterways require capital investments for development of basic infrastructure and maintenance through dredging for their proper utilization. There is also the **shortage of inland vessels and non-availability of return cargo**.

WAY FORWARD:

- **Coordinated strategy:** A tailor-made policy for promoting waterways network should be developed. This policy should include well-defined institutional mechanisms, promote private investments and facilitate inter-state and centre-state collaborations, among others.

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- **Individual studies:** Every riverine system is unique and presents diverse challenges. Hence, separate studies to assess viability need to be done for each, before taking up implementation.
- **Complementarity with other modes**: An integrated transport network, comprising of Inland waterway, roadways, wail and coastal shipping, needs to be developed to realize the full potential of India's waterways.
- **Augment manufacturing capability:** India has the know-how on developing vessels and other systems needs for Inland water transport. But this needs to be enlarged to meet the growing needs of country. Joint ventures and PPP models may be considered for the same.

CASE STUDY: Germany's Inland Waterways

- The Germany's federal waterway network spans **7,350 km**, with **75% rivers** and **25% canals**. Key waterways like the Rhine, Danube, Weser, Elbe, and Oder connect seaports to inland regions, facilitating the transport of **240 million tonnes of bulk goods annually**. Inland waterways link **56 out of 74 metropolitan areas**, supporting **400,000 jobs** through inland shipping and ports. Additionally, passenger vessels, including river cruises, contribute significantly to Germany's tourism sector.

PRACTICE QUESTION

Q. Discuss the prospects and challenges associated with the development of inland waterways in India. (15 Marks, 250 Words)

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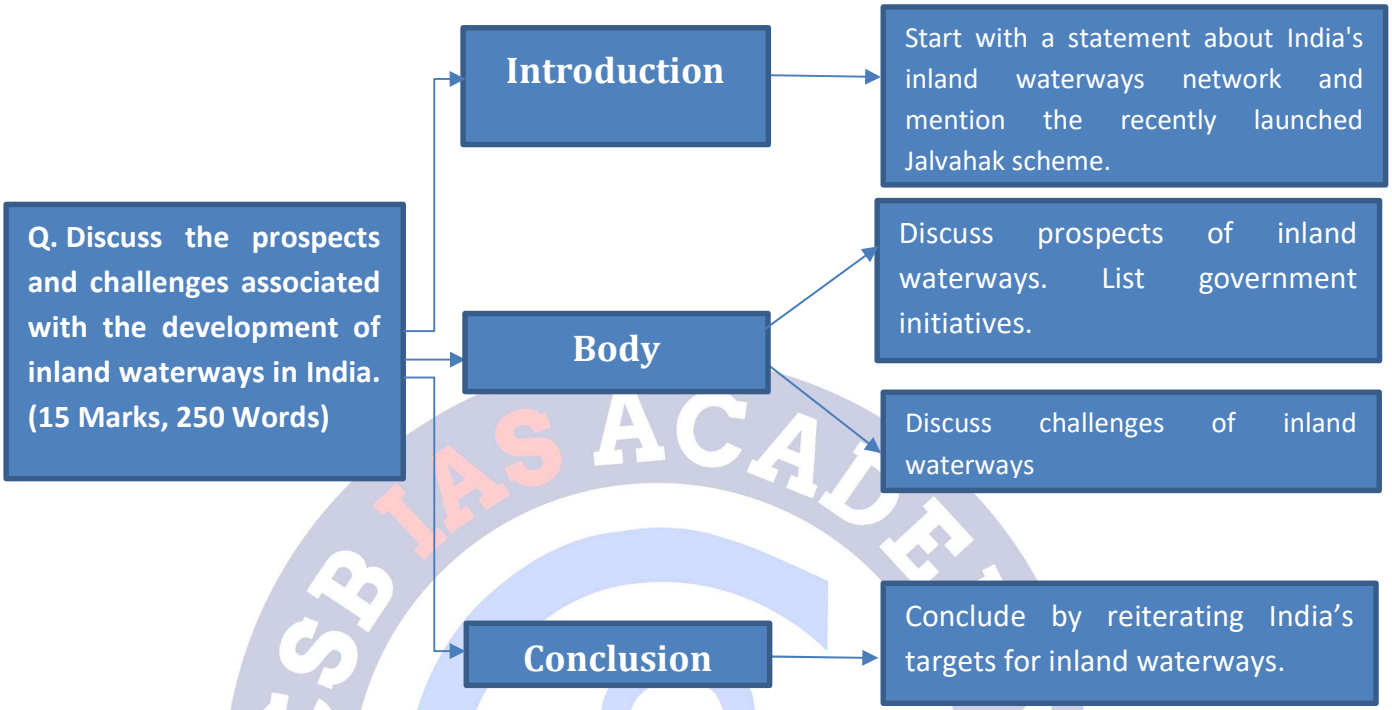
APPROACH



MODEL ANSWER

India has an extensive **inland waterway network spanning *20,236 km***, with *17,980 km* comprising navigable rivers (Source: IWAI). Despite its potential, waterways account for **less than 3% of cargo transport.** To address this, the government has launched the *Jalvahak Scheme* to boost long-haul cargo movement and promote sustainable transportation.

Prospects of Inland Waterways in India

1. **Cost-Effectiveness and Fuel Efficiency**
    - Inland waterways are cheaper to develop and maintain compared to road and rail infrastructure.
    - *Fuel Efficiency*: 1 litre of fuel can transport 215 tonnes of cargo on waterways, compared to 95 tonnes on rail and 24 tonnes on road.

2. **Reduction in Logistics Cost**: Inland Water Transport (IWT) can help reduce logistics costs, currently at 14% of India's GDP, enhancing export competitiveness.

3. **Environmentally Sustainable**: Waterways are the least polluting mode of transport, aligning with India's climate goals.

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4. **Regional Development**: Development of jetties and logistical hubs supports employment and infrastructure growth in regions like *Bihar* and *Assam*.
5. **North-East Connectivity**: Agreements with Bangladesh and Myanmar enable efficient transshipment, fostering trade and market access to the *North-East*.
6. **Capacity Growth**: Cargo movement increased from 18 MMT in 2013-14 to 133 MMT in 2023-24, with a target of *200 MMT by 2030* and *500 MMT by 2047*.
7. **Employment Generation**: Promotes tourism, fisheries, and allied sectors, creating employment opportunities in inland areas.

Government Efforts

- Jalvahak Scheme
- Inland Waterways Authority of India (IWAI)
- National Waterways Act, 2016
- Jal Marg Vikas Project (JMVP)
- Project Arth Ganga
- Inland Vessels Act, 2021

Challenges in Development of Inland Waterways

1. **Hydrological Issues**: Siltation and seasonal water variations hinder year-round navigation, e.g., NW1 upstream of Farakka.
2. **Ecological Concerns**: Dredging and vessel activities threaten endangered species like *river dolphins* and *migratory birds*.
3. **Competing Water Needs**: Conflicts arise between irrigation, drinking water, and navigation needs, leading to interstate disputes.
4. **Operational Challenges**: High capital investments, shortage of inland vessels, and lack of return cargo limit viability.
5. **Jurisdictional Overlaps**: Water is under the *State List*, while national waterways fall under the *Union List*, creating administrative hurdles.
6. **Last-Mile Connectivity**: Integration with road and rail networks is essential for efficient cargo movement.

Way Forward

- Develop a **coordinated policy** for waterways with centre-state collaboration.
- Conduct **river-specific studies** to assess commercial viability.
- Focus on **multi-modal integration** for seamless logistics connectivity.

- Promote **vessel manufacturing and infrastructure development** via PPP models.
- Ensure **environmental safeguards** to protect riverine ecosystems.

The *Jalvahak Scheme* and other government initiatives highlight the untapped potential of inland waterways. With a **target of *200 MMT by 2030* and *500 MMT by 2047***, India is poised to transform its waterways into a cost-effective, sustainable, and regionally inclusive mode of transportation.

26. MINIMUM SUPPORT PRICE (MSP)

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Agriculture > Subsidies

REFERENCE NEWS:

- Recently, the Parliamentary Standing Committee on Agriculture, Animal Husbandry, and Food Processing has proposed a **legally binding Minimum Support Price (MSP)** to safeguard farmers' welfare and ensure financial stability.

MORE ON NEWS:

Key Objectives of Legal Guarantee for MSP (As Highlighted by the Committee):

Farmer Welfare

- **Ensure Stability**: A legal guarantee for MSP can offer farmers a consistent income, helping them plan for their future without the stress of unpredictable market prices.
- **Shield from Volatility**: By protecting against sudden price drops, MSP acts as a cushion, especially for small and marginal farmers who are the most vulnerable.
- **Address Distress**: Providing financial security through MSP can reduce the economic hardships that often lead to farmer suicides, offering them hope and dignity.

Economic Impact

- **Support Rural Livelihoods**: Assured income through MSP creates a ripple effect, energizing rural economies and providing a lifeline to local businesses that depend on agricultural prosperity.
- **Encourage Better Practices**: With financial stability, farmers are more likely to invest in quality seeds, irrigation, and sustainable techniques, leading to healthier crops and better yields.

Food Security

- **Ensure Consistent Supply**: A stable MSP framework helps farmers maintain foodgrain production levels, securing the nation's food supply.
- **Support Public Needs**: By stabilizing food prices, MSP strengthens public distribution systems, ensuring affordable access to food for millions of families.

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WHAT IS MSP?

- Minimum Support Price is the price set by the government to purchase crops from the farmers. MSP was introduced to give financial stability into the agricultural system and encourage production.
- MSP for major agricultural products is **fixed by the Department of Agriculture and Co-operation, Government of India**, before the sowing season each year.
- The prises are fixed on the basis of recommendations of the **Commission for Agricultural Costs and Prices (CACP)**.
- **CACP calculates cost of production at three levels:**
  - A2, which includes cost of inputs such as seeds, fertilizer, labour.
  - A2+FL, which includes the implied cost of family labour (FL).
  - C2, which includes the implied rent on land and interest on capital assets over and above A2+FL.
- Since 2018, MSPs is fixed at **1.5 times of the A2+FL production cost**.

CROPS COVERED:

At present, Government announces MSPs for a total of **25 crops and fair and remunerative price (FRP) for sugarcane**. They are:

Cereals (7) - paddy, wheat, barley, jowar, bajra, maize and ragi
Pulses (5) - gram, arhar/tur, moong, urad and lentil
Oilseeds (8) - groundnut, rapeseed/mustard, toria, soyabean, sunflower seed, sesamum, safflower seed and nigerseed
Raw cotton
Raw jute
Copra
De-husked coconut
Virginia flu cured (VFC) tobacco
Sugarcane

Fair Remunerative Price (FRP):

- In case of sugarcane, MSP has been assigned a statutory status and as such the announced price is termed as statutory minimum price, rechristened as Fair Remunerative Price (FRP). There is statutory binding on sugar factories to pay the minimum announced price and all those transactions or purchase at prices lower than this are considered illegal.

MSP for Minor Forest Produce:

- The Central Government had introduced MSP for a select list of MFP in 2011 under the "Mechanism for Marketing of Minor Forest Produce through Minimum Support Price and development of Value chain for MFP" scheme.

IMPACTS OF MSP:

Positive:

- **Assured income**: Assured price and direct purchase by the government has resulted in better price realization for farmers and prevented their exploitation by middlemen.
- **Insulates farmers:** MSP insulates farmers from fluctuation in prices caused by market imperfections, free trade and other elements plaguing the agricultural markets.
- **Encourages investments into farm fields**: The guaranteed price and assured market encourages higher investment and adoption of modern technologies in agricultural activities.
- **Take informed decisions**: MSP has become a benchmark for producer, as it helps in estimating the revenue, thereby aiding the financial planning and also influencing borrowing decisions if any.
- **Empowers small farmers**: Small and marginal farmers with less than two hectares of land account for **86.2% of all farmers in India**. Without the MSPs, these farmers, who have neither bargaining power nor expertise for price discovery, will be at the mercy of middlemen and private entities.
- **Strengthened buffer stock**: MSP has a direct impact on the buffer stock held by the government and the public distribution system. MSP helps the government attract farmers and procure items from them to meet the requirements of the public distribution system.

Negative:

- **Altered cropping pattern:** The cropping pattern and crop diversity has skewed towards those crops with high MSP and margins. For eg: Pulse growing areas in Central and North India have been taken up by Rice and wheat because of their higher MSP.
- **Promotes unsustainable agriculture**: The change in cropping pattern and excess focus on mono cropping is making agriculture unsustainable. For eg: Paddy production in the semi-arid Punjab plains has adversely affected the groundwater management in the region.
- **Encouraged inefficiency:** Because of the assured price and procurement, farmers are less interested in improving productivity from their farmlands. For instance, although India ranks second in the production of rice, its yield is lower than Brazil, China and the United States.

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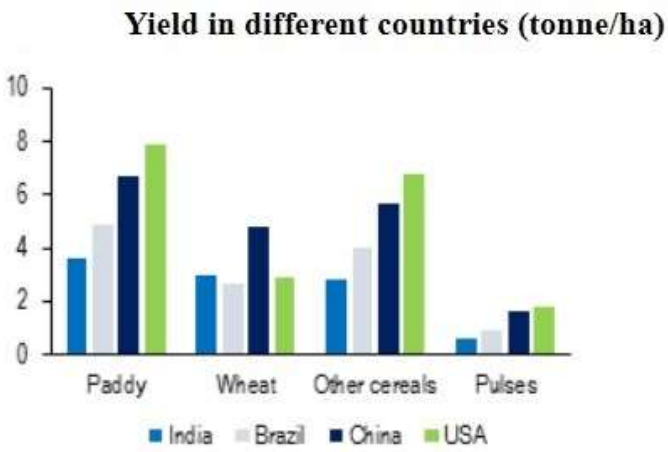
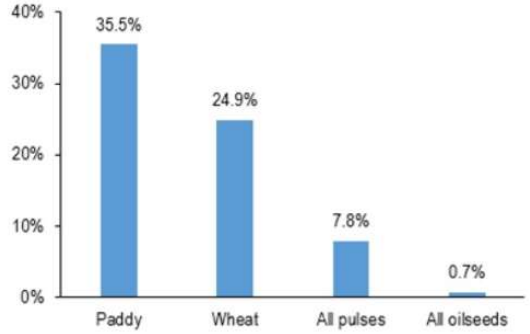


- **Wastage of produce**: Since there are no procurement targets, the state and central agencies procure more than what is required or what they are capable to handle. This results in wastage of crops.
- **Creates market distortions:** MSP distorts the market because the government procurement agencies buy lion's share of the produce and thereby force out private players. Also, too much of a hike on MSP paves way for inflationary effects on the economy.
- **Fiscal burden:** The successive hiking of MSP, coupled with open-ended procurement and heavily subsidized distribution under National Food Security Act (NFSA) has resulted in a ballooning food subsidy budget.
- **Political tool:** MSP has become part of the vote bank politics in India. As a result, successive governments have focused on hiking MSP rather than addressing structural efforts such as investing in agri-infrastructure, reforming the markets and initiating land reforms.

CHALLENGES:

- **Weak public procurement mechanism**: The government procurement mechanism varies across the country. In parts of the country where the procurement mechanism is weak, farmers end up selling their produce at a price lower than the MSP.
- **Insufficient pricing**: Farm activists have argued that the current A2+FL MSP formula is not sufficient to make farming profitable and should have been replaced with the C2 costs.
- **Intercrop disparity**: Although MSPs are declared for various crops, public procurement is limited to a few crops such as paddy, wheat and, to a limited extent, pulses as shown in Figure 1.

Figure 1: Public procurement is largely limited to paddy and wheat



- **Regional disparity:** The procurement is largely limited to a few states. For instnace, three states which produce 49% of the national wheat output account for 93% of procurement. Also, the actual costing for production varies from place to place, more severely so in areas with lack of irrigation facilities and infrastructure. Thus, not all farmers get equal benefits. Also, the **Department of Expenditure** noted that wheat procurement benefits only a few states, creating imbalances.
- **Lack of awareness:** In a report to measure the efficacy of MSPs, the NITI Aayog found that a low proportion of farmers (10%) were aware of MSPs before the sowing season. 62% of the farmers were informed of MSPs only after sowing their crops.
- **International disputes:** India's MSP regime has been a major bone of contention under the World Trade Organisation (WTO) because it comes under trade distorting support as per the Agreement on Agriculture. For instance, the Department of Commerce flagged concerns that India **has exceeded WTO's subsidy limit of 10%** for rice, **invoking the 'Peace Clause' to avoid penalties**. They advised setting specific procurement targets to ensure compliance with international trade rules while balancing domestic policies.
- **Import Dependence:** The Department of Food & Public Distribution (Ministry of Consumer Affairs, Food & Public Distribution) raised concerns that the **MSP for oilseeds has failed to increase domestic production,** resulting in India relying on **imports for 55% of its oilseed needs**. They noted that farmers are inclined toward high-return crops like wheat (102% returns) and mustard (98% returns), while lower returns from pulses and safflower discourage their cultivation, increasing import dependency.

WAY FORWARD:

- **Switch to C2 based MSP**: The Abhijit Sen Committee on Long-term Grain Policy and the National Commission on Farmers (NCF) chaired by Professor M.S. Swaminathan had recommended that the MSPs must be based on its projection of the full C2 cost.
- **Long-term MSP policy:** The Department of Food and Public Distribution recommended a long-term MSP policy for the **next five years** to provide farmers **with future price clarity**, aiding in informed crop choices.

- **NITI Aayog's alternatives:** NITI Aayog in consultation with state governments has proposed three alternative mechanisms:
    - **Market assurance scheme**: This proposes procurement by government machinery from the farmers at MSP in case farm harvest prices fall below that.
    - **Price Deficiency payment**: Price deficiency payment scheme - Under this scheme if the farmers' sale price is below a modal price, then the they will be compensated the difference between MSP and actual price.
    - **Private participation in stockers scheme:** This scheme relates to the procurement at MSP by the private entrepreneurs.
    - It pointed out the low productivity of pulses in rice fallow areas in several states, needing specific attention.
- **Oilseeds and pulse production:** The Department of Food & Public Distribution suggests raising the MSP for oilseeds and pulses to boost production and encourage the adoption of high-yielding varieties. NITI Aayog also recommended **14 non-price interventions**, including crop diversification, improved access to quality seeds, and efficient fertilizer use, to enhance **oilseed and pulse productivity**.
- **Market reforms**: There is a need to transform marketing arrangements for improving market efficiency by strengthening existing institutions, like FPOs, contract farming, cooperatives, and SHGs.
- **Adopt modern technologies:** Establishing monitoring and forecasting units at the state and national level will help in taking informed decisions well in advance. For this, technologies such as big data analysis and Artificial Intelligence (AI) should be leveraged.
- **Encourage sustainable farming:** Governments need to encourage crop diversification and efficient farming practices. For this, initiatives such as Pradhan Mantri Krishi Sinchayee Yojana and national mission on sustainable agriculture needs to be leveraged.
- **Promote cooperatives**: Cooperative agriculture is a key area which can help small and marginal farmers. Governments need to leverage on the success stories of Amul Dairy Cooperative in Gujarat and Kudumbashree programme in Kerala and encourage cooperative farming.
- **Invest in long term development**: Hiking MSP without investing in infrastructure is just a short-term play. Governments should boost their efforts towards long-term developments, such as irrigation, transport and storage facilities, agri-credit and climate smart agriculture.

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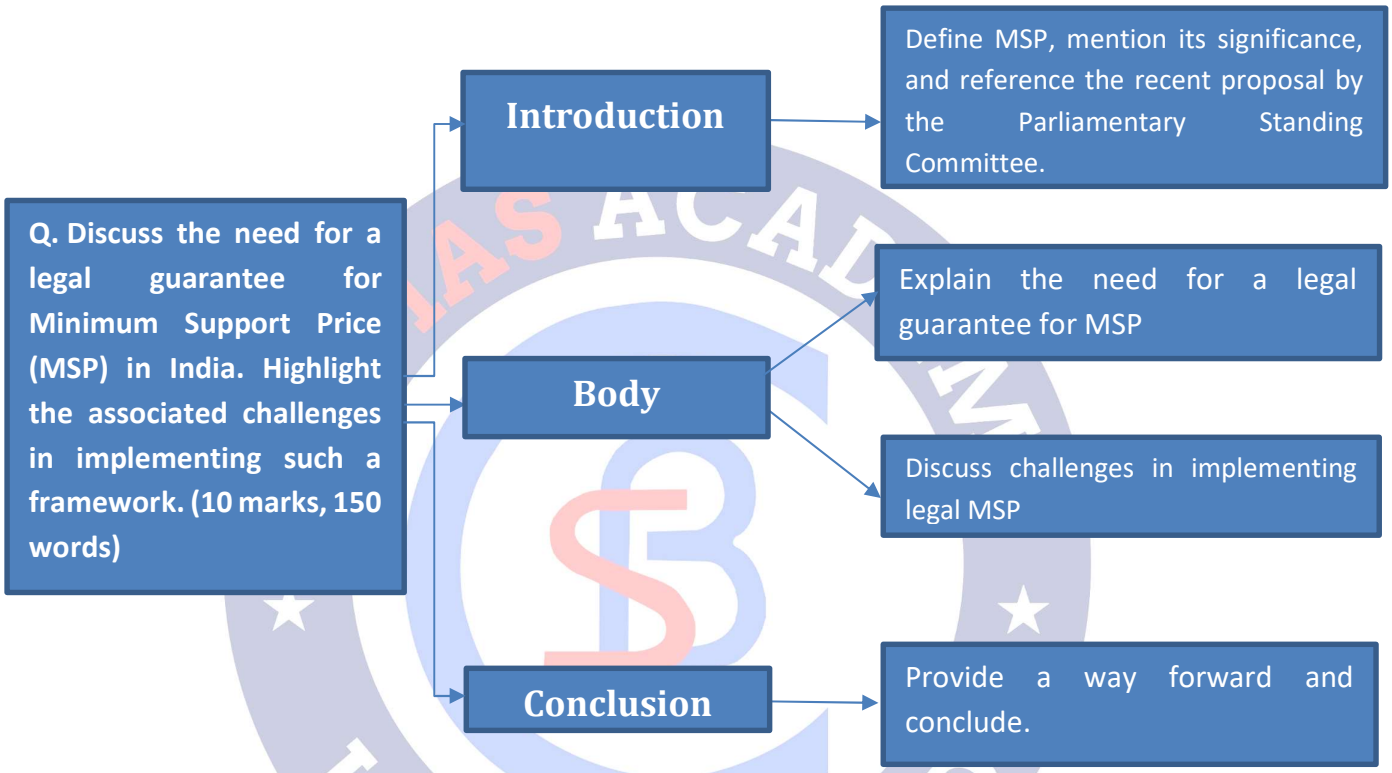
PRACTICE QUESTION

Q. Discuss the need for a legal guarantee for Minimum Support Price (MSP) in India. Highlight the associated challenges in implementing such a framework. (10 marks, 150 words)

APPROACH



MODEL ANSWER

Recently, the Parliamentary Standing Committee on Agriculture, Animal Husbandry, and Food Processing proposed a legally binding Minimum Support Price (MSP) to safeguard farmers' welfare and ensure financial stability. MSP, a government-set price for procuring crops, was introduced to protect farmers from market fluctuations and ensure consistent agricultural production. A legal guarantee for MSP is seen as a measure to address ongoing agrarian distress and enhance farmers' incomes. Currently, MSP covers 25 crops, but procurement is mostly concentrated in staples like wheat and paddy.

Need for a Legal Guarantee for MSP

1. **Ensuring Income Stability**: A legal MSP would provide farmers with assured returns, mitigating the uncertainties of market fluctuations. For instance, small and marginal

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farmers, who account for 86.2% of India's farming community, often lack bargaining power and are vulnerable to exploitation by middlemen.

2. **Shielding Farmers from Market Volatility**: MSP ensures protection against sudden price drops. For example, during market crashes, crops like oilseeds and pulses often fail to yield sufficient returns, forcing farmers into debt or distress sales.

3. **Addressing Agrarian Distress**: With increasing instances of farmer suicides linked to economic hardships, a guaranteed MSP offers hope and financial dignity. States like Maharashtra and Punjab, which have witnessed high numbers of farmer suicides, could benefit significantly from this safety net.

4. **Promoting Rural Economic Growth**: Assured prices create a ripple effect, boosting rural economies. For example, better returns through MSP encourage investments in seeds, fertilizers, and irrigation, which in turn benefit local businesses dependent on agriculture.

5. **Strengthening Food Security**: A legal MSP would incentivize consistent production of essential crops like wheat and rice, which currently constitute 93% of total procurement from states like Punjab, Haryana, and Uttar Pradesh. This strengthens the public distribution system and secures food supplies for millions of families.

Challenges in Implementing Legal MSP

1. **Weak Public Procurement Infrastructure**: Procurement is limited to select states. For instance, Punjab, Haryana, and Uttar Pradesh account for nearly 49% of wheat production but dominate 93% of procurement. Farmers in regions with poor infrastructure, like Eastern India, often sell below MSP.

2. **Fiscal Burden**: Open-ended procurement under a legal MSP could inflate the food subsidy budget. In 2020-21, India's food subsidy ballooned due to increased procurement costs under schemes like NFSA.

3. **Market Distortions**: Excessive government intervention crowds out private players. For example, high MSPs for wheat and paddy discourage farmers from cultivating pulses or oilseeds, contributing to a 55% dependency on edible oil imports.

4. **Environmental Concerns**: Legal MSP may exacerbate issues like monocropping. For instance, water-intensive paddy production in Punjab and Haryana has led to significant groundwater depletion and ecological concerns.

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5. **International Trade Disputes**: India's rice MSP exceeds WTO's 10% subsidy limit, leading to disputes. In 2022, India invoked the WTO 'Peace Clause' to avoid penalties, highlighting the challenges of aligning domestic policies with international rules.

6. **Lack of Awareness Among Farmers**: A NITI Aayog study revealed that only 10% of farmers were aware of MSP before sowing their crops, limiting its potential benefits.

Way Forward

- **Strengthen Procurement Infrastructure**: Expand procurement networks beyond wheat and paddy to include crops like pulses and oilseeds, ensuring equitable benefits across regions.
- **Adopt Sustainable Farming Practices**: Encourage crop diversification through higher MSPs for pulses and oilseeds. For instance, mustard and safflower, which yield lower returns, need targeted support to reduce import dependence.
- **Fiscal Prudence**: Design a balanced MSP framework with clear procurement targets to avoid wastage and fiscal strain.
- **Enhance Farmer Awareness**: Conduct awareness campaigns before sowing seasons, ensuring farmers are informed about MSP and its mechanisms.
- **Leverage Technology**: Use Artificial Intelligence and big data for better planning, forecasting, and implementation of MSP policies.

A legal guarantee for MSP is essential to secure farmers' incomes and reduce agrarian distress. However, challenges such as fiscal strain, regional disparity, and environmental concerns must be addressed. A restructured MSP framework, integrating robust procurement mechanisms and sustainable farming practices, can transform MSP into an effective tool for equitable agricultural growth. Examples like Punjab's efficient wheat procurement system and the challenges of oilseed production demonstrate the need for a balanced and inclusive approach to implementing MSP.

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27. MANUFACTURING SECTOR IN INDIA

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development >> Manufacturing sector

REFERENCE NEWS:

India's manufacturing sector as per PMI declined from 57.5 in October to 56.5 in November, reaching an 11-month low, due to competitive market conditions and increasing inflation amidst slower factory orders, according to a recent monthly survey. India's Real Gross Domestic Product (GDP) growth slumped to a seven-quarter low of 5.4 percent in July-September 2024, pulled down by "**sluggish growth" in manufacturing** and a deceleration in mining and quarrying, data released by the National Statistics Office (NSO) showed.

MANUFACTURING SECTOR IN INDIA:

Manufacturing is emerging as an integral pillar in the country's economic growth, thanks to the performance of key sectors like automotive, engineering, chemicals, pharmaceuticals, and consumer durables. India now has the **physical and digital infrastructure** to raise the share of the manufacturing sector in the economy and make a realistic bid to be an important player in global supply chains.

SIGNIFICANCE OF INDIAN MANUFACTURING SECTOR:

- **Contribution to GDP:** The manufacturing sector accounts for approximately **16-17%** of India's Gross Domestic Product (GDP), playing a vital role in economic growth.
    - Under the **Make in India** initiative, the government aims to increase this share to **25%** by 2025, promoting industrialization and self-reliance.
- **Employment Generation:** The sector provides direct employment to over **27.3 million** people and indirect employment to millions more through ancillary industries.
    - Sectors like **automobiles, textiles, chemicals, and electronics** are major job creators, supporting both skilled and unskilled labour.
- **Export Growth:** India has the capacity to **export goods** worth **US$ 1 trillion by 2030** and is on the road to becoming a **major global manufacturing hub**.

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- India is the **world's largest exporter** of generic medicines and the **second-largest producer** of steel, indicating its growing global manufacturing footprint.

- **Boost to Infrastructure Development:** Increased manufacturing activities stimulate demand for infrastructure such as roads, ports, and power, leading to broader economic development.
    - The growth of industrial corridors like the **Delhi-Mumbai Industrial Corridor (DMIC)** has enhanced connectivity and industrial growth in various regions.
- **Technological Advancements and Innovation:** The sector encourages technological innovation and R&D. Companies are increasingly adopting **Industry 4.0** technologies like **automation, AI, and IoT**.
    - The rise of **electric vehicle (EV) manufacturing** in India, driven by companies like **Tata Motors** and **Ola Electric**, demonstrates innovation in green technology.
- **Support for MSMEs:** MSMEs form the backbone of India's manufacturing sector, contributing around **45%** of total industrial output and **40%** of exports.
    - Government initiatives like **Credit Linked Capital Subsidy Scheme (CLCSS)**, **PLI** Scheme and **PMEGP** support MSME growth, fostering entrepreneurship and regional development.
- **Enhancing Rural and Regional Development:** Establishment of manufacturing units in rural and semi-urban areas helps in reducing regional disparities and fostering economic growth in underdeveloped regions.
    - Initiatives like **One District One Product (ODOP)** promote regional specialization, enhancing rural livelihoods and local manufacturing.
- **Import Substitution and Self-Reliance:** Manufacturing reduces dependency on imports by promoting domestic production of essential goods like **defence equipment, electronics, and medical devices**.
    - Under the **Aatmanirbhar Bharat** initiative, India aims to become self-reliant in sectors such as defence and electronics, reducing foreign dependency and enhancing economic sovereignty.
- **Contribution to Climate Goals:** The sector is increasingly adopting sustainable practices to align with India's climate goals, such as reducing **carbon emissions** and promoting **renewable energy**.
    - **National Electric Mobility Mission Plan (NEMMP)** promotes the manufacturing of electric vehicles, contributing to sustainable development.

POTENTIAL OF INDIAN MANUFACTURING SECTOR:

- **Expanding Domestic Market :** India's growing middle class is expected to reach **350 million** by 2030, increasing demand for consumer goods, electronics, automobiles, and other manufactured products.
    - The **automobile sector** is a significant growth driver, with India being the **4th largest** automotive market globally in 2022, producing over **5 million vehicles** annually.
- **Global Export Hub Potential:** India aims to increase merchandise exports to **$1 trillion by 2030** through enhanced manufacturing capacity.
    - The **Pharmaceutical Sector** is a global leader, with India producing **60% of the world's vaccines** and exporting generic drugs to over **200 countries**.
- **Strength in Emerging Sectors"** The EV market in India is projected to reach **$150 billion by 2030**, driven by increasing investment in EV manufacturing and battery production.
    - Companies like **Tata Motors**, **Ola Electric**, and **Hero Electric** are leading in EV manufacturing, supported by government initiatives like the **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME)** scheme.
- **Technological Advancements and Innovation:** Through **Industry 4.0 Adoption** India is integrating **AI, IoT, robotics**, and **automation** into manufacturing, increasing productivity and global competitiveness.
- **Skilled Workforce and Demographic Dividend:** With **65%** of its population below the age of 35, India has a demographic advantage, providing a large pool of skilled labour.
    - The **Skill India** mission is training millions of workers in advanced manufacturing technologies, preparing them for future industrial demands.
- **Sustainability and Green Manufacturing:** India is transitioning to sustainable manufacturing practices, aiming to reduce carbon emissions and increase renewable energy usage.
    - The **National Solar Mission** supports industries in adopting solar power, reducing manufacturing costs and carbon footprints.

A globally competitive manufacturing sector is India's greatest potential to drive economic growth and job creation this decade. The value chains in the sector are well positioned to benefit from India's advantages in terms of raw materials, industrial expertise, and entrepreneurship. They can take advantage of four market opportunities: **expanding exports, localising imports, internal demand, and contract manufacturing.**

SUPPORTIVE GOVERNMENT POLICIES

- **Production Linked Incentive (PLI) Scheme:** The government has allocated **₹1.97 lakh crore** across key sectors, incentivizing domestic production and reducing import dependence.
- **Make in India initiative**: This initiative aims to make India a hub for manufacturing and design. It includes the PLI scheme, easing foreign direct investment (FDI) norms, and reducing compliance burden.
- **National Manufacturing Policy**: This policy aims to increase the share of manufacturing in GDP to 25% within a decade. It also seeks to create 100 million jobs and empower rural youth.
- **Industrial Corridor Development Programme:** In order to accelerate growth in manufacturing, Government of India (GoI) has adopted the strategy of developing Industrial Corridors in partnership with State Governments. The objective of this programme is to develop Greenfield Industrial regions/areas/nodes with sustainable infrastructure & make available Plug and Play Infrastructure at the plot level. As part of National Industrial Corridor Program, 11 Industrial Corridors are being developed in 4 phases.
- **National Single Window System:** The setting up of National Single Window System (NSWS) was announced in the Budget 2020-21 with the objective to provide "end to end" facilitation and support to investors, including pre-investment advisory, provide information related to land banks and facilitate clearances at Centre and State level.
  PM Gati Shakti National Master Plan (NMP): It is a transformative approach to facilitate data-based decisions related to integrated planning of multimodal infrastructure, thereby reducing logistics cost.
- **National Logistics Policy:** National Logistics Policy (NLP) aims to lower the cost of logistics and lead it to par with other developed countries. It is a comprehensive effort to address cost inefficiency by laying down an overarching interdisciplinary, cross-sectoral, and multi-jurisdictional framework for developing entire logistics ecosystem.
- **Udyami Bharat Scheme:** 'Udyami Bharat' is reflective of the continuous commitment of the government, right from day one, to work towards the empowerment of MSMEs. The government has launched several initiatives from time to time like MUDRA Yojana, Emergency Credit Line Guarantee Scheme, Scheme of Fund for Regeneration of Traditional Industries (SFURTI) etc. to provide necessary and timely support to the MSME sector, which has helped benefit crores of people across the country. 'Raising and Accelerating MSME Performance' (RAMP) scheme with an outlay of around Rs 6000 crore, aims to scale up the implementation capacity and coverage of MSMEs in the States, with impact enhancement of existing MSME schemes

CHALLENGES FACED BY MANUFACTURING SECTOR IN INDIA:

- **Inadequate Infrastructure**: According to the World Bank's Logistics Performance Index (LPI) 2023, India ranks 38th, indicating the need for improvement in supply chain efficiency. Poor road connectivity in rural areas affects the timely delivery of goods.
- **Skilled Labor Shortages:** A report by NSDC (National Skill Development Corporation) indicates that 53% of employers face difficulty in finding adequately skilled workers in sectors like electronics and precision manufacturing.
- **Regulatory and Bureaucratic Hurdles:** According to the Ease of Doing Business 2020 report by the World Bank, India improved its ranking to 63rd, but manufacturing still faces hurdles in areas like contract enforcement and property registration.
- **High Cost of Capital:** MSMEs, which account for 45% of India's manufacturing output, often face higher interest rates, limiting their capacity to expand or adopt new technologies.
- **Inconsistent Power Supply**: A study by CII (Confederation of Indian Industry) highlighted that power outages cost Indian industries an estimated ₹1.5 lakh crores annually due to production losses and increased generator usage.
- **Lack of Technological Adoption:** While large companies like Tata Motors and Mahindra are adopting smart manufacturing, smaller enterprises lag due to high initial costs and lack of technical expertise. Also India's R&D expenditure is less than 1% of GDP which is far lower compared to South Korea, China, USA etc.
- **Trade and Export Challenges**: Non-tariff barriers, fluctuating global demand, and limited market diversification affect export growth. Despite being the world's largest exporter of generic drugs, Indian pharmaceutical companies face regulatory hurdles in key markets like the U.S. and EU, impacting their global market share.
- **Environmental and Sustainability Issues:** The National Green Tribunal (NGT) has imposed strict environmental compliance regulations, which small manufacturers often struggle to meet, leading to penalties and operational shutdowns.
- **Supply Chain Disruptions**: Global supply chain disruptions, like those seen during the COVID-19 pandemic, exposed vulnerabilities in sourcing raw materials and components.
- **Competition from Global Markets**: Low-cost manufacturing hubs like China, Vietnam, and Bangladesh offer stiff competition, particularly in textiles, electronics, and consumer goods. India's share in global textile exports dropped from 5% in 2015 to 3% in 2023 due to competition from Bangladesh and Vietnam, which offer lower labour costs and better trade agreements.

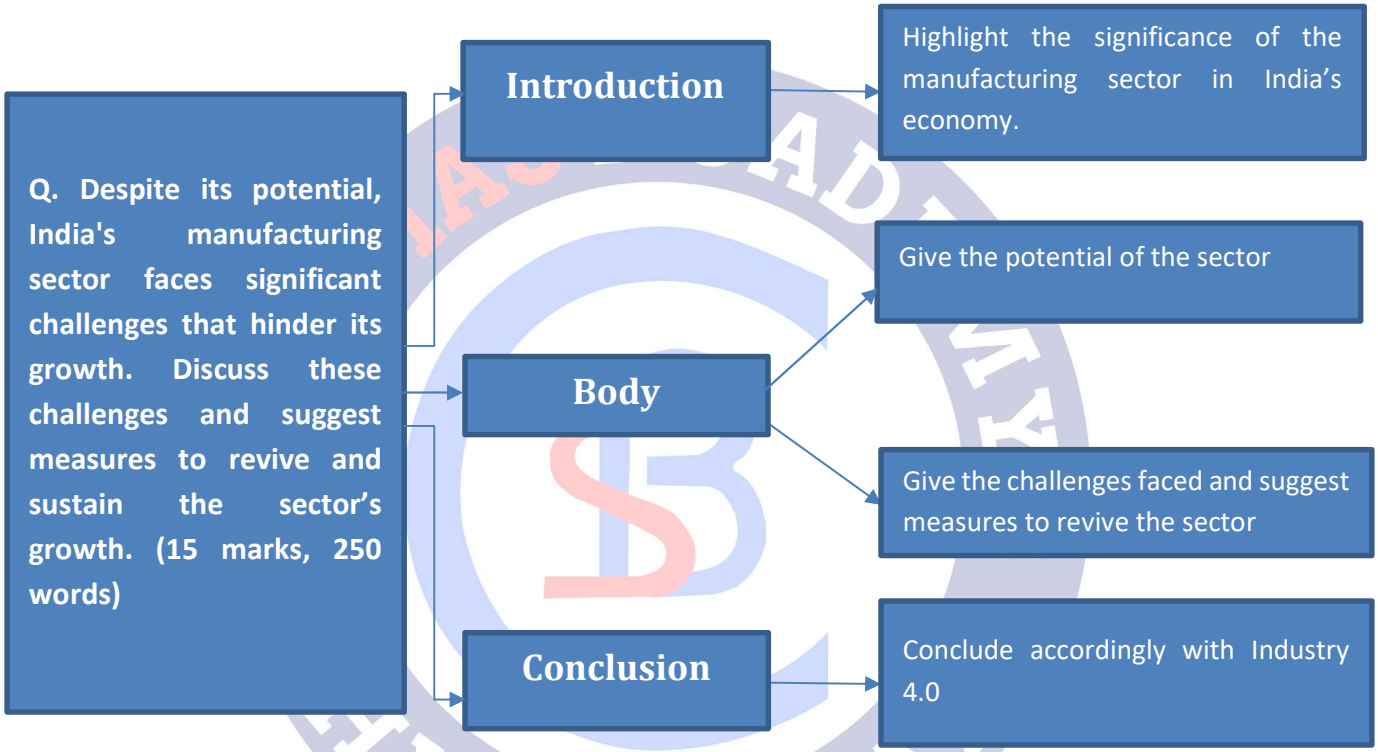
WAY FORWARD:

- **Implement National Manufacturing Policy Recommendations:** The National Manufacturing Policy (2011) aims to increase the manufacturing sector's share in GDP to 25% and create 100 million jobs by 2025.
- **Streamline Ease of Doing Business:** Countries like Singapore and New Zealand have minimal bureaucratic processes for setting up businesses.
- **Strengthening Infrastructure and Logistics**: The **Kelkar Committee** emphasized the need for investment in industrial corridors. Expand corridors like the Delhi-Mumbai Industrial Corridor (DMIC) to other regions. Enhance port, rail, and road connectivity to reduce logistical bottlenecks.
- **Adopt Smart Manufacturing Infrastructure:** Germany's Industry 4.0 promotes smart factories through IoT, AI, and automation.
- **Leverage Skill Development Programs**: The **Arvind Panagariya Committee** advocated for integrating skill development into manufacturing strategies. Expand initiatives like Skill India and Pradhan Mantri Kaushal Vikas Yojana (PMKVY) to cover advanced manufacturing skills.
- **Promote Women in Manufacturing**: Japan and South Korea have implemented gender-inclusive policies to boost female participation in manufacturing. India can introduce gender-focused skill development programs.
- **Foster a Culture of Innovation:** The **Mashelkar Committee** on innovation emphasized promoting R&D in manufacturing. Increase R&D spending to 2-3% of GDP and set up Innovation Hubs in collaboration with academic institutions.
- **Technology Adoption from Advanced Nations:** China's Made in China 2025 focuses on high-tech industries.
- **Sustainable and Green Manufacturing:** The NITI Aayog recommends increased adoption of renewable energy in manufacturing.
- **Circular Economy Model**: European Union's Circular Economy Action Plan focuses on recycling and sustainable production.
- **Strengthen MSME Ecosystem**: The **UK Sinha Committee** on MSMEs emphasized financial access and capacity building.
- **Encourage Startup Ecosystem**: Israel's Startup Nation model supports innovation through government-backed funds.
- **Export-Oriented Special Economic Zones (SEZs):** China's SEZs have driven export-led growth. India can have Employment and Economic Enclaves as per **Baba Kalyani Committee** recommendations.

PRACTICE QUESTION

Q. Despite its potential, India's manufacturing sector faces significant challenges that hinder its growth. Discuss these challenges and suggest measures to revive and sustain the sector's growth. (15 marks, 250 words)

APPROACH



MODEL ANSWER

India's manufacturing sector contributes around **16-17%** to the GDP and is a crucial driver of economic growth, employment, and exports. Despite its potential, the sector has faced sluggish growth recently, with manufacturing indices like PMI showing a decline from **57.5 in October to 56.5 in November 2024**, partly due to competitive market conditions, inflation, and slower factory orders.

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POTENTIAL OF INDIAN MANUFACTURING SECTOR:

- **Expanding Domestic Market :** India's growing middle class is expected to reach **350 million** by 2030, increasing demand for consumer goods, electronics, automobiles, and other manufactured products.
    - The **automobile sector** is a significant growth driver, with India being the **4th largest** automotive market globally in 2022, producing over **5 million vehicles** annually.
- **Global Export Hub Potential:** India aims to increase merchandise exports to **$1 trillion by 2030** through enhanced manufacturing capacity.
    - The **Pharmaceutical Sector** is a global leader, with India producing **60% of the world's vaccines** and exporting generic drugs to over **200 countries**.
- **Supportive Government Policies:** Initiatives like PLI Scheme, Make in India, Assemble in India, industrial cluster policies like PM MITRA, food processing units etc is bound to incentivise industrial growth in India.
- **Strength in Emerging Sectors"** The EV market in India is projected to reach **$150 billion by 2030**, driven by increasing investment in EV manufacturing and battery production.
    - Companies like **Tata Motors**, **Ola Electric**, and **Hero Electric** are leading in EV manufacturing, supported by government initiatives like the **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME)** scheme.
- **Technological Advancements and Innovation:** Through **Industry 4.0 Adoption** India is integrating **AI, IoT, robotics**, and **automation** into manufacturing, increasing productivity and global competitiveness.
- **Skilled Workforce and Demographic Dividend:** With **65%** of its population below the age of 35, India has a demographic advantage, providing a large pool of skilled labour.
    - The **Skill India** mission is training millions of workers in advanced manufacturing technologies, preparing them for future industrial demands.
- **Sustainability and Green Manufacturing:** India is transitioning to sustainable manufacturing practices, aiming to reduce carbon emissions and increase renewable energy usage.

CHALLENGES FACED BY THE INDIAN MANUFACTURING SECTOR:

1. **Inadequate Infrastructure:** India ranks **38th** on the World Bank's **Logistics Performance Index (LPI) 2023**, indicating the need for improved supply chain and transportation systems
2. **Skilled Labor Shortages: 53%** of employers face difficulties in finding skilled workers, particularly in advanced sectors like **electronics and precision manufacturing**

3. **Regulatory and Bureaucratic Hurdles:** Despite India's improvement in the **Ease of Doing Business ranking** to **63rd** in 2020, issues like contract enforcement and property registration remain hurdles
4. **High Cost of Capital:** MSMEs, contributing **45%** of manufacturing output, face high interest rates, limiting their ability to expand or invest in new technologies
5. **Lack of Technological Adoption:** Smaller enterprises lag in adopting **Industry 4.0** technologies like **AI, IoT, and automation**, reducing global competitiveness.
6. **Environmental Compliance Issues:** Small manufacturers struggle with stringent environmental regulations imposed by the **National Green Tribunal (NGT)**, leading to operational challenges

MEASURES TO REVIVE AND SUSTAIN GROWTH:

1. **Infrastructure Development:** Inspired by the **Delhi-Mumbai Industrial Corridor (DMIC)**, more corridors should be developed to improve connectivity Implement data-driven infrastructure planning to reduce logistics costs and enhance efficiency.
2. **Expand Skill India and PMKVY:** Focus on training in advanced manufacturing skills as recommended by the **Arvind Panagariya Committee**. Adopt gender-inclusive policies like **Japan** and **South Korea** to increase female participation in technical roles.
3. **Ease of Doing Business through Single-Window Clearance:** Implement systems similar to **Singapore** for faster business approvals, reducing bureaucratic delays.
4. **Technology and R&D Promotion:** Increase R&D spending to **2-3% of GDP** and collaborate with academic institutions as per the **Mashelkar Committee** recommendations.
5. **MSME Support and Financial Access:** Implement recommendations from the **UK Sinha Committee** by expanding credit schemes and capacity-building programs for MSMEs
6. **Sustainability and Green Manufacturing:** Increase adoption of solar and wind energy in manufacturing to meet climate goals, as suggested by **NITI Aayog**
7. **Circular Economy:** Follow the **European Union's Circular Economy Action Plan** for resource efficiency and waste reduction.

India's manufacturing sector holds immense potential for driving economic growth and creating jobs. By addressing challenges related to infrastructure, skills, finance, and technology, and learning from successful global models, India can position itself as a leading manufacturing hub. Sustainable growth in this sector is vital for achieving the **$5 trillion economy** vision and enhancing economic resilience in the long term through Industry 4.0.

28. HIGH-PERFORMANCE BUILDINGS

iMPACT ANALYSIS

SYLLABUS:

GS3 > Environment and Ecology >> Climate Change

REFERENCE NEWS:

At this year's COP, WorldGBC (Green Building Council) have been calling on governments to #BeBoldOnBuildings in their updated national climate action plans (NDCs), which are due in February 2025 under the Paris Agreement. At the High Level Ministerial roundtable, which WorldGBC attended, Ministers from several countries demonstrated their commitment to deliver ambitious, sector-specific NDCs that are backed by policy and investment plans and high-performance buildings are the sustainable way in construction sector for a mitigative approach to climate change.

HIGH-PERFORMANCE BUILDINGS:

High-Performance Buildings (HPBs) are designed to achieve optimal efficiency in energy consumption, water usage, indoor air quality, and overall environmental impact while ensuring comfort, durability, and cost-effectiveness. They incorporate advanced materials, innovative technologies, and sustainable design practices to reduce their carbon footprint and operating costs.

At the core of HPBs is an **integrative design approach** that encourages architects, engineers, sustainability consultants, and building owners to work together and set measurable performance goals. It ensures all building systems — air-conditioning, lighting, and building envelope components like walls, roofs, and windows — work together smoothly.

Key Features of High-Performance Buildings

- **Energy Efficiency**: Use **advanced insulation**, **high-performance windows**, **solar panels**, **LED lighting**, and **energy-efficient HVAC systems**. Incorporate **energy management systems (EMS)** for real-time monitoring and optimization of energy use.
- **Water Efficiency**: Employ **rainwater harvesting**, **greywater recycling**, and **low-flow plumbing fixtures** to minimize water consumption.

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- **Indoor Environmental Quality (IEQ)**: Focus on **air purification systems**, **natural ventilation**, **daylighting**, and **non-toxic building materials** to enhance occupant health and productivity.

- **Sustainable Materials**: Use **recycled**, life-cycled-based materials **locally sourced**, and **low-carbon materials** to reduce the environmental impact of construction. It also incorporates green infrastructure elements such as permeable paving and bioswales to manage stormwater and cool urban heat islands.

- **Smart Building Technologies**: Integration of **IoT** and **AI-based building management systems** for automated control of lighting, heating, cooling, and security systems.

SIGNIFICANCE OF HIGH-PERFORMANCE BUILDINGS:

- **Energy Efficiency and Cost Savings**: According to the **International Energy Agency (IEA)**, buildings account for nearly **30% of global energy consumption**. HPBs can reduce energy use by **30-50%** compared to traditional buildings.
    - **Infosys Campus, Hyderabad**: The GRIHA-certified campus achieved a **40% reduction in energy consumption** through efficient design and renewable energy integration.
- **Environmental Sustainability and Carbon Footprint Reduction:** The **World Green Building Council** states that green buildings can reduce **CO_2 emissions by up to 50%** compared to conventional buildings.
    - **Indira Paryavaran Bhawan**, New Delhi: India's first **net-zero energy building**, reducing its carbon footprint through solar energy, natural ventilation, and efficient resource management.
- **Water Conservation and Efficiency**: Buildings can reduce water consumption by **30-50%** using high-efficiency systems and recycling technologies.
    - **ITC Green Centre**, Gurgaon: Achieved **40% water savings** through rainwater harvesting and greywater recycling, setting a benchmark for sustainable water management in India.
- **Enhanced Indoor Environmental Quality (IEQ)**: According to the **Harvard T.H. Chan School of Public Health**, people working in green-certified buildings report a **26% increase in cognitive function**, **30% fewer sick days**, and higher overall job satisfaction.
    - **The Bullitt Center**, Seattle: Known for its emphasis on **natural ventilation**, **non-toxic materials**, and **daylighting**, creating a healthier work environment for occupants.
- **Economic Benefits and Increased Property Value:** A study by the **Royal Institution of Chartered Surveyors (RICS)** found that green-certified buildings command a **7-11% premium** in rental and resale markets.

- In **Singapore**, buildings with **Green Mark Certification** enjoy higher property values, attracting investors and tenants focused on sustainability.

- **Contribution to National Energy and Climate Goals**: HPBs support national and global initiatives like the **Paris Agreement**, **Net Zero 2050**, and **Sustainable Development Goals (SDGs)** by reducing energy demand and environmental impact. India's **Energy Conservation Building Code (ECBC)** aims to achieve **30-50% energy savings** in new commercial buildings, supporting India's climate goals.
    - **Smart Cities Mission** in India integrates HPB principles in urban planning, promoting energy-efficient infrastructure in cities like Pune and Bhubaneswar.
- **Job Creation and Economic Growth**: The growth of the HPB sector stimulates **job creation** in areas like green construction, renewable energy, and sustainable materials manufacturing. The **International Labour Organization (ILO)** estimates that transitioning to energy-efficient buildings could create **18 million jobs** globally by 2030.
    - India's **green building sector**, driven by IGBC and GRIHA, has created thousands of jobs in construction, energy management, and facility maintenance.
- **Resilience to Climate Change and Natural Disasters**: High-performance buildings with **climate-resilient designs** can reduce damage costs by **30-40%** during natural disasters.
    - **Masdar City**, UAE: Built with heat-resistant materials and energy-efficient cooling systems to handle extreme temperatures, serving as a model for climate-resilient urban planning.
- **Encouraging Sustainable Urban Development**: HPBs are integral to **sustainable urban development** by reducing resource consumption and enhancing the livability of urban spaces. By 2050, **70% of the global population** will live in urban areas, making HPBs essential for sustainable urban growth.
    - **Pune's Smart City Project** integrates HPBs into its urban infrastructure, improving energy efficiency and resource management.

CHALLENGES OF HPBs IN INDIA:

- **High Initial Costs and Limited Affordability:** According to a study by **NITI Aayog**, the initial cost of constructing an HPB in India can be **15-20% higher** than a conventional building, making it less appealing for budget-conscious developers and homeowners.

    - The **Indira Paryavaran Bhawan** in New Delhi, India's first net-zero energy building, required substantial investment in solar panels, rainwater harvesting systems, and energy-efficient technologies, making it a showcase project rather than a standard model.

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- **Lack of Awareness and Training**: A survey by the **Indian Green Building Council (IGBC)** found that **60% of developers** in Tier 2 and Tier 3 cities are unaware of the long-term benefits of green and high-performance buildings.
- **Shortage of Skilled Workforce**: According to a report by **FICCI**, India needs to train an additional **1 million green building professionals** by 2030 to meet the growing demand for sustainable construction.
    - Projects like the **Infosys campus in Hyderabad** have successfully implemented HPB principles, but the lack of skilled personnel often delays similar projects in less-developed regions.
- **Regulatory and Policy Gaps**: While India has established frameworks like the **Energy Conservation Building Code (ECBC)** and **GRIHA (Green Rating for Integrated Habitat Assessment)**, their enforcement remains inconsistent across states and municipalities. A **CII-IGBC report** highlights that only **10-12 states** have fully adopted the ECBC, resulting in fragmented implementation and varying standards for high-performance buildings.
    - In states like **Rajasthan** and **Bihar**, where ECBC compliance is low, HPB adoption remains limited due to a lack of regulatory enforcement and policy support.
- **Inadequate Incentives and Financing Mechanisms:** A report by the **World Bank** indicates that less than **5% of Indian green building projects** have received financial support, compared to over **30%** in developed countries.
    - In contrast to countries like Singapore, where the **Green Mark Incentive Scheme** provides substantial financial support, India's financial incentives for HPBs are minimal, limiting their widespread adoption.
- **Limited Availability of Sustainable Materials and Technologies:** The **Indian construction industry** relies heavily on traditional materials, with sustainable alternatives accounting for only **10-12%** of the total market.
    - In rural areas of **Northeast India**, sourcing materials like **recycled steel** and **low-emission concrete** for HPBs is costly and time-consuming, hindering the adoption of sustainable construction practices.
- **Resistance from Developers and Builders:** According to a study by **Colliers International**, the payback period for HPBs in India ranges from **7-10 years**, which many developers find unattractive compared to quicker returns from conventional buildings.
- **Inconsistent Power Supply and Infrastructure Issues:** Frequent power outages and inadequate infrastructure in certain regions pose a challenge for implementing energy-efficient technologies in HPBs.

- **Rural India** experiences power outages averaging **4-8 hours per day**, making it difficult to maintain consistent operation of smart building systems and energy-efficient technologies as per World Bank.

- **Monitoring and Maintenance Challenges**: A report by **McKinsey & Company** highlights that **maintenance costs for HPBs** can be **15-20% higher** than traditional buildings due to specialized systems and technologies.

WAY FORWARD:

- **Mandate Nationwide Adoption of Energy-Efficient Codes:** Enforce the Energy Conservation Building Code (ECBC) uniformly across all states with stricter compliance mechanisms.
    - Cities like Hyderabad and Pune already offer higher floor area ratios (FAR) for ECBC-compliant buildings, a model that can be replicated nationwide.
- **Introduce Incentive-Based Policies**: Provide tax incentives, subsidies, and fast-track approvals for HPB projects. Incentivize developers through property tax rebates and reduced utility charges for energy-efficient buildings.
    - Germany's KfW Bank offers low-interest loans for energy-efficient projects, which India could emulate to encourage wider adoption of HPBs.
- **Leverage Carbon Financing and Green Bonds:** Encourage developers to participate in carbon markets by earning carbon credits for reducing emissions. Use green bonds and climate funds to finance large-scale HPB projects, making them financially viable.
    - In 2020, global green bond issuance reached $269.5 billion. India should tap into this growing market to support HPBs.
- **Public-Private Partnerships (PPPs):** Foster PPPs to co-fund sustainable infrastructure projects, combining public funding with private sector expertise. This can bridge the gap between high initial costs and long-term savings.
    - Collaboration between Embassy Group and private investors in Bengaluru for green commercial developments highlights the success of PPPs in sustainable construction.
- **Training and Skill Development:** Establish training programs for architects, engineers, and builders on sustainable design principles and energy-efficient technologies.

- **Public Awareness Campaigns**: Conduct nationwide campaigns to educate developers, investors, and the public about the financial and environmental benefits of HPBs. Promote case studies of successful HPB projects to build trust and awareness.
    - The success of Infosys' energy-efficient campuses in reducing energy consumption by 45% can serve as a benchmark for public awareness initiatives.
- **Encourage Indigenous Technology Development**: Support R&D initiatives for developing cost-effective, energy-efficient building materials and smart technologies domestically. This will reduce dependency on imports and lower costs. Launch a Production Linked Incentive (PLI) scheme for green building materials and technologies to encourage local manufacturing.
- **Adopt Smart Building Technologies:** Integrate IoT and AI-driven energy management systems in HPBs for real-time monitoring and optimization of energy and resource usage.
    - TCS Siruseri IT Park in Chennai uses smart performance verification systems to ensure energy efficiency, setting a precedent for smart HPB adoption.
- **Broaden Certification Programs**: Promote and streamline certification programs like GRIHA, IGBC, and LEED for both new and existing buildings. Encourage retrofitting older buildings to meet these standards.
    - Nirlon Knowledge Park in Mumbai, with its LEED certification, showcases how retrofitting can transform existing infrastructure into energy-efficient hubs.
- **Develop a Robust Monitoring Framework:** Ensure transparency and accountability in carbon financing and green certifications by establishing stringent Monitoring, Reporting, and Verification (MRV) systems.
- **Regular Audits and Benchmarks:** Conduct periodic audits to ensure compliance with energy efficiency standards and benchmark performance against global best practices. Establish performance-based incentives for consistent high-performing buildings.
- **Incorporate Climate-Resilient Design:** Promote the integration of climate-adaptive designs in HPBs to withstand extreme weather events like floods, heatwaves, and cyclones.
- **Water Efficiency and Conservation:** Mandate rainwater harvesting, greywater recycling, and low-flow plumbing fixtures in HPBs to enhance water conservation and reduce stress on municipal water supplies.

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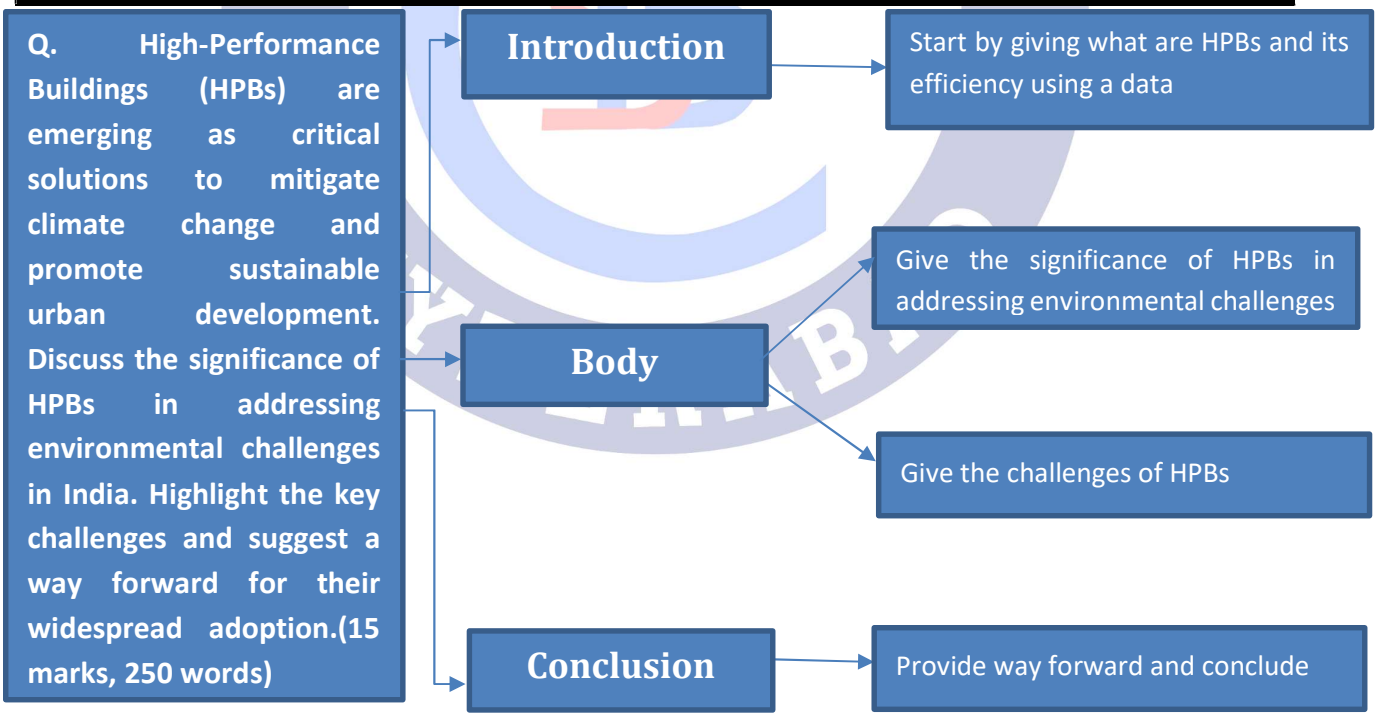
INDIA AND HPBs:

- The National Action Plan on Climate Change focuses on energy-efficient construction.
- The Energy Conservation Building Code (ECBC) aims to reduce energy demands by up to 30% in buildings.
- India's Green Rating for Integrated Habitat Assessment (GRIHA) has registered over 3,000 projects that prioritize sustainable practices and reducing carbon emissions.
- The Indian Green Building Council (IGBC) has certified more than 14,000 projects, covering 12.5 billion square feet of green building space

PRACTICE QUESTION

Q. High-Performance Buildings (HPBs) are emerging as critical solutions to mitigate climate change and promote sustainable urban development. Discuss the significance of HPBs in addressing environmental challenges in India. Highlight the key challenges and suggest a way forward for their widespread adoption. (15 marks, 250 words)

APPROACH



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MODEL ANSWER

High-Performance Buildings (HPBs) are designed to optimize energy efficiency, water conservation, and environmental sustainability while ensuring occupant well-being. Integrating HPBs into India's infrastructure is crucial for meeting national and global sustainability goals like the **Paris Agreement** and **Net Zero 2070** target. According to the **International Energy Agency (IEA)**, HPBs can reduce energy use by **30-50%** compared to traditional buildings.

SIGNIFICANCE OF HIGH-PERFORMANCE BUILDINGS IN INDIA

- **Reduction in Energy Consumption**: HPBs can reduce energy use by **30-50%**, significantly lowering carbon emissions.
    - The **Infosys Campus in Hyderabad** achieved a **40% reduction** in energy consumption through efficient design and renewable energy integration
- **Lower Carbon Footprint**: According to the **World Green Building Council**, HPBs can reduce CO_2 emissions by up to **50%** compared to conventional buildings.
    - **Indira Paryavaran Bhawan**, India's first net-zero energy building, uses solar power and natural ventilation to minimize its carbon footprint**2. Economic Benefits**
- **Cost Savings and Higher Property Values**: HPBs have lower operating costs due to reduced energy and water usage, making them financially attractive. They also command a **7-11% premium** in rental and resale markets.
    - In **Singapore**, buildings with **Green Mark Certification** attract higher property values and tenants focused on sustainability
- **Job Creation**: The growth of HPBs stimulates employment in sectors like **green construction** and **renewable energy**.
    - The **International Labour Organization (ILO)** estimates that transitioning to energy-efficient buildings could create **18 million jobs globally** by 2030
- **Water Conservation**: HPBs can reduce water consumption by **30-50%** using technologies like **rainwater harvesting** and **greywater recycling**.
    - **ITC Green Centre in Gurgaon** achieved **40% water savings** through sustainable water management practices
- **Climate Resilience**: HPBs with adaptive designs can withstand extreme weather events, reducing damage costs by **30-40%**.

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- **Masdar City**, UAE, demonstrates resilience in harsh climates with heat-resistant materials and efficient cooling systems

CHALLENGES IN ADOPTING HPBs IN INDIA

1. High Initial Costs: The initial construction cost of HPBs is **15-20% higher** than traditional buildings, deterring developers.

- **Indira Paryavaran Bhawan** required substantial investment in solar panels and energy-efficient systems, making it more of a showcase than a standard model

2. Lack of Awareness and Skilled Workforce: 60% of developers in Tier 2 and Tier 3 cities lack awareness of HPB benefits, and India needs **1 million trained professionals** in green construction by 2030

3. Regulatory and Policy Gaps: While the **Energy Conservation Building Code (ECBC)** exists, its enforcement is inconsistent across states, limiting HPB adoption.

- States like **Rajasthan** and **Bihar** show low compliance due to weak regulatory enforcement

4. Inadequate Financial Support: Less than **5%** of Indian green building projects receive financial support, compared to over **30%** in developed countries

WAY FORWARD FOR HPBs IN INDIA

- **Mandate Nationwide ECBC Compliance**: Implement stricter enforcement across all states and offer incentives like **higher floor area ratios (FAR)** for compliant buildings.
- Provide **tax rebates**, **subsidies**, and access to **green bonds** and **carbon credits** to offset high initial costs.
    - Global green bond issuance reached **$269.5 billion** in 2020, a resource India can leverage
- Launch **training programs** for architects, engineers, and construction workers on HPB technologies and sustainability.
    - The success of **Infosys' energy-efficient campuses** can serve as a model for public awareness initiatives
- Collaborate with private firms to co-fund large-scale HPB projects, combining public funding with private sector expertise.

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- Partnerships like **Embassy Group's green developments in Bengaluru** demonstrate the potential of PPPs

High-Performance Buildings represent a transformative approach to addressing India's urban and climate challenges. By integrating energy-efficient technologies, water conservation, and climate resilience, HPBs contribute to sustainable development and economic growth. Overcoming current challenges through policy support, financial incentives, and capacity building will ensure HPBs play a central role in India's journey towards a **sustainable, net-zero future**.

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29. INDIA'S SKILLED LABOUR FORCE

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Economic Development >> Employment generation

REFERENCE NEWS:

The problem of unemployment has become a contentious issue in economic policy discussions in India in recent times. Economic Survey 2023-24 estimated that India needs to create 78.5 lakh new jobs in the non-farm sector annually until 2030 to meet the demands of the rising workforce. One of the policy prescriptions often suggested to overcome the unemployment challenge is to close the growing gap between the skill sets of job seekers and the skill requirements of the industry.

INDIA'S LABOUR FORCE:

- **Large and Growing Workforce:** India has one of the largest labour forces in the world, with approximately **521 million people** in the working-age group (15–64 years) as of 2024.
- **Youthful Demographic Profile**: India's median age is 28.4 years (2023), significantly lower than that of developed countries like Japan (48.4 years). A youthful population provides India with a **demographic dividend**, contributing to sectors like technology and startups.
- **Low Labour Force Participation Rate (LFPR)**: The overall LFPR in India is around **46%** (World Bank, 2023), which is lower than the global average of 60%. (**Male LFPR**: ~74% and **Female LFPR**: ~25%, among the lowest globally).
- **Informal Employment Dominance**: About **80-90%** of India's labour force is engaged in the **informal sector**, which includes agriculture, construction, and small-scale enterprises.
- **Agriculture's Significant Share**: Despite its contribution to GDP is at ~18%, agriculture employs **~43% of the workforce**.
- **Increasing Urbanization and Service Sector Growth**: India's urban workforce has grown due to rural-to-urban migration and the expansion of the service sector, which contributes ~55% to GDP.
- **Gender Disparities**: Women's participation in the workforce is not only low but also concentrated in low-paying and informal jobs. Rural women are largely engaged in agricultural labour, while urban women often face barriers like lack of childcare and societal norms.

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- **Rising Gig and Platform Economy:** India is witnessing rapid growth in gig and platform-based jobs, especially in urban areas. Companies like Swiggy, Zomato, and Ola have created millions of gig jobs, offering flexibility but limited social security.
- **Skill Gap and Low Productivity**: A significant portion of India's labour force lacks formal vocational training compared to **52%** in the US and **75%** in Germany.
- **Regional Disparities**: Labour force distribution is uneven, with southern states like Kerala having higher literacy and skilled workforce participation, while northern states like Bihar and UP rely more on unskilled labour.
- **Impact of Technology and Automation**: Over two-thirds of Indian manufacturers are expected to embrace digital transformation by 2025. Government policy support has been given to prepare the industry for I4.0 through the SAMARTH Udyog Bharat 4.0 initiative.
- **Migrant Workforce**: Migration is a significant feature of India's labour dynamics, with an estimated **139 million internal migrants**.

INDIA'S SKILLING CHALLENGE:

India faces significant challenges in providing skill education and training to its vast labour force, impacting labour productivity and economic growth. Despite being home to one of the world's largest workforces, structural, policy, and implementation barriers hinder progress.

- **Low Formal Skill Training Coverage**: The Periodic Labour Force Survey 2022-23 identified that **only 21% of the Indian youth** aged 15-29 years had received vocational/technical training through formal and informal sources. The share of youth who had received formal vocational/technical training was 4.4% in 2022-23 compared to **52% in the US** and **75% in Germany**.
- **Skill Mismatch and Employability Issues**: Education and skill training often fail to align with industry demands. Only 1.5% of Indian engineers possess the skills for new-age jobs as per India Skills Report. The Chief Economic Advisor recently stated that **only 51% of India's graduates** are **employable**. These facts raise concerns regarding the reach, quality, and industry relevance of existing skilling programmes.
- **Regional Disparities in Skill Development**: States like **Kerala, Karnataka, and Tamil Nadu** have better skilling infrastructure than states like **Bihar and Jharkhand**. Uneven skilling opportunities exacerbate migration and regional economic inequalities. Migrants from states with poor skilling facilities often take up low-paying informal jobs in urban centres.
- **Inadequate Infrastructure for Skill Development**: Many training centres lack modern facilities, equipment, and qualified trainers. Less than 10% of India's Industrial Training Institutes (ITIs) are equipped with advanced technologies like AI and robotics.

- **Low Participation in Apprenticeships**: India's apprenticeship system is underdeveloped, with only **500,000 apprentices** in training, compared to millions in countries like Germany. Limited hands-on experience affects job readiness and productivity.
- **Low Female Participation in Skilling Programs**: Women constitute only **25% of the formal workforce** and face barriers like social norms, safety concerns, and lack of flexible training programs.Gender-specific skilling initiatives like **Mahila Shakti Kendras** have had limited outreach.
- **Informal Sector Challenges**: About **80-90% of India's workforce** is employed in the informal sector, which lacks access to formal skilling opportunities.
- **Funding and Policy Implementation Gaps**: Insufficient allocation of funds and inefficiencies in policy execution hinder large-scale skilling efforts. A report by the Parliamentary Standing Committee on Labour (2021) highlighted that many skill centres operate below capacity.
- **Rapidly Changing Skill Requirements**: The slow pace of adapting curricula to industry trends hampers India's competitiveness. The growing demand for skills in **data analytics, AI, and cybersecurity** is met with limited trained professionals. Sixty percent of the Indian MSME workforce lacks the new-age digital skills.

CHALLENGES TO WORKFORCE DUE TO THE SKILL GAP:

- **Unemployment and Underemployment**: A mismatch between the skills possessed by job seekers and the requirements of industries leads to joblessness or workers being forced into roles below their potential.
- **Stagnant Wages:** Skilled sectors offer 3-5 times higher wages compared to unskilled roles, exacerbating income inequality. Migrant labourers in urban areas are often stuck in menial jobs due to a lack of specialized training.
- **Limited Career Growth**: Workers without up-to-date skills face difficulties in career advancement and are more susceptible to job losses due to automation.
- **Low Productivity and Competitiveness:** An inadequately skilled workforce reduces the productivity of industries, limiting their competitiveness in global markets.
- **Informal Sector Dominance**: About **80–90%** of India's workforce is employed in the informal sector, which rarely offers structured skill training. Workers in this sector remain unskilled, contributing to low productivity and job insecurity.
- **Inability to Leverage Emerging Opportunities**: Rapid technological advancements in areas like AI, machine learning, and renewable energy demand new-age skills, which most workers lack.
- **Migration Pressures**: Workers from regions with limited skill development infrastructure often migrate to cities, leading to overpopulation and strain on urban resources. Migrants

from Bihar and Uttar Pradesh dominate informal jobs in Delhi and Mumbai due to a lack of localized skill training opportunities.

- **Increased Vulnerability to Automation**: Workers without technical or adaptive skills are at greater risk of being replaced by automation. Studies estimate that **over 20% of jobs in India** could be automated by 2030.
- **Missed Global Workforce Opportunities**: India's lack of adequately skilled workers limits its ability to meet global demand for professionals in healthcare, IT, and advanced manufacturing. The **ILO predicts a global worker shortage of 85 million by 2030**, which India could partially fill with the right skills.

POTENTIAL FOR INDIA WITH A SKILLED DEMOGRAPHIC DIVIDEND

India, with one of the world's youngest populations, is uniquely positioned to leverage its **demographic dividend**—a period when the proportion of the working-age population (15–64 years) is higher than the dependent population.

- **Accelerated Economic Growth**: If India fully utilizes its skilled youth, its GDP growth could increase by **1-2% annually**, contributing an additional **$500 billion by 2030**.
- **Global Workforce Hub**: With an aging population in developed countries like the US, Japan, and Europe, India can become a key supplier of skilled labour globally. The International Labour Organization (ILO) predicts a **worker shortage of 85 million globally by 2030**, creating immense opportunities for Indian talent.
- **Boost to Domestic Industries**: A skilled workforce can accelerate the growth of industries like manufacturing, services, and renewable energy. Sectors such as automotive, electronics, and green energy require specialized skills to support India's **"Make in India"** and **"Atmanirbhar Bharat"** initiatives**.**
- **Innovation and Startups:** India is home to **90,000+ startups** and ranks third globally in terms of unicorns, many driven by skilled professionals in technology and e-commerce.
- **Higher Incomes and Poverty Reduction:** A skilled workforce earns higher wages, improving living standards and reducing poverty. The per capita income in skilled sectors is 3-5 times higher than in unskilled ones.
- **Enhanced Infrastructure and Urbanization:** India plans to invest $1.4 trillion under the **National Infrastructure Pipeline** (NIP), creating a demand for skilled labor in construction, transport, and smart cities.
- **Leadership in Emerging Sectors**: India aims to generate **500 GW of renewable energy by 2030**, requiring a workforce skilled in solar, wind, and hydropower technologies.

TO ADDRESS SKILL GAPS IN INDIA:

- **Align Education with Industry Needs:** Develop industrial- academia linkage as National Education Policy 2020 suggests. Germany's **dual education system** combines classroom learning with on-the-job training.
- **Expand Vocational Training and Apprenticeships:** Increase the number of Industrial Training Institutes (ITIs) and Skill Development Centres. Promote schemes like the **National Apprenticeship Promotion Scheme (NAPS)** to incentivize industries. Japan's **Monozukuri Apprenticeship Program** provides skill-intensive, on-the-job training.
- **Enhance Digital and Technological Skills**: Expand initiatives like **FutureSkills Prime**, a collaboration between NASSCOM and the Government of India. Singapore's **SkillsFuture Program** offers courses on AI and fintech, subsidized by the government.
- **Gamified and Simulation based skilling:** While gamified learning incorporates game elements into skill training, simulation-based learning uses virtual environments that mimic real-world scenarios, allowing learners to practice and apply skills in a safe and controlled setting. Singapore and Germany have adopted gamified and simulation-based learning into their education, vocational, and skill training systems.
- **Promote Regional Equity in Skill Development:** Establish state-specific skill hubs in rural and underserved regions. Tailor skill programs to regional industries (e.g., agriculture-based skills in Bihar). Kerala's **Additional Skill Acquisition Programme (ASAP)** focuses on skill development in rural areas.
- **Increase Women's Participation in Skilling:** Introduce flexible skilling programs and provide childcare support. Ensure gender-inclusive workplaces through legal and policy reforms. Sweden's gender-inclusive policies ensure equal access to skill training and employment.
- **Address the Informal Sector's Needs**: Introduce short-term, modular training programs tailored to informal workers. Provide certifications that recognize informal learning and experience. Brazil's **National Program for Access to Technical Education and Employment (PRONATEC)** focuses on informal workers.
- **Focus on Lifelong Learning and Reskilling**: Promote continuous learning programs for workers across industries. Partner with private sector players to provide reskilling opportunities. Germany's **BIBB** (Federal Institute for Vocational Education and Training) focuses on lifelong learning.
- **Public-Private Partnerships (PPP):** Australia's **Apprenticeship Network Providers** are industry-funded and government-supported.

SKILLING INITIATIVES BY INDIA:

- **National Policy on Skill Development & Entrepreneurship (NPSDE)**: The NPSDE focuses on bridging gaps, improving industry engagement, establishing a quality assurance framework, leveraging technology, and expanding apprenticeship opportunities. Prioritising equity, it targets marginalised groups and emphasises skill development and entrepreneurship for women.
- **Pradhan Mantri Kaushal Vikas Yojana:** To date, the scheme has successfully trained 1.42 crore individuals, with 1.13 crore received certification across its Short-Term Training (STT), Special Projects (SP), and Recognition of Prior Learning (RPL) components. PMKVY has also been instrumental in introducing 119 new age and future skill courses spanning eight key sectors.
- **Craftsmen Training Scheme (CTS):** The Craftsmen Training Scheme (CTS) plays a crucial role in vocational training across India, facilitated through a vast network of 14,955 Industrial Training Institutes (ITIs).
- **Jan Shikshan Sansthan (JSS):** Jan Shikshan Sansthan (JSS) plays a pivotal role in imparting skills to non/neo literates and individuals with a rudimentary level of education. From FY19 to FY24, JSS has successfully trained 26.36 lakh individuals, with 24.94 been certified.
- **National Apprenticeship Promotion Scheme (NAPS):** The National Apprenticeship Promotion Scheme (NAPS) is aimed at fostering apprenticeship training across India. Since its inception, a total of 32.38 lakh apprentices have been engaged in various sectors.
- **Skill India Digital Hub platform:** The Skill India Digital Hub platform, represents a convergence platform facilitating access to skilling, credit, and employment through AI/ ML technology. This initiative integrates a comprehensive array of skilling schemes along with 690 online courses and 1650 QP-based e-books, enhancing accessibility to educational resources essential for vocational training
- **The SWAYAM and Skill India Digital Hub (SIDH),** the two online platforms for skill education and training initiated by the Indian government, can host the gamified and simulation training module. The SWAYAM platform hosts more than 4,000 courses. Since its inception, over 40 million participants have enrolled in the platform and a lion's share (93.45%) of successful course completions in the platform were under the engineering and physical sciences stream. As of June 2024, 7.63 lakh candidates were enrolled in SIDH's 752 online courses.
- **PM Vishwakarma Yojana**: Modernizes the skills of traditional artisans and integrates them into global markets.

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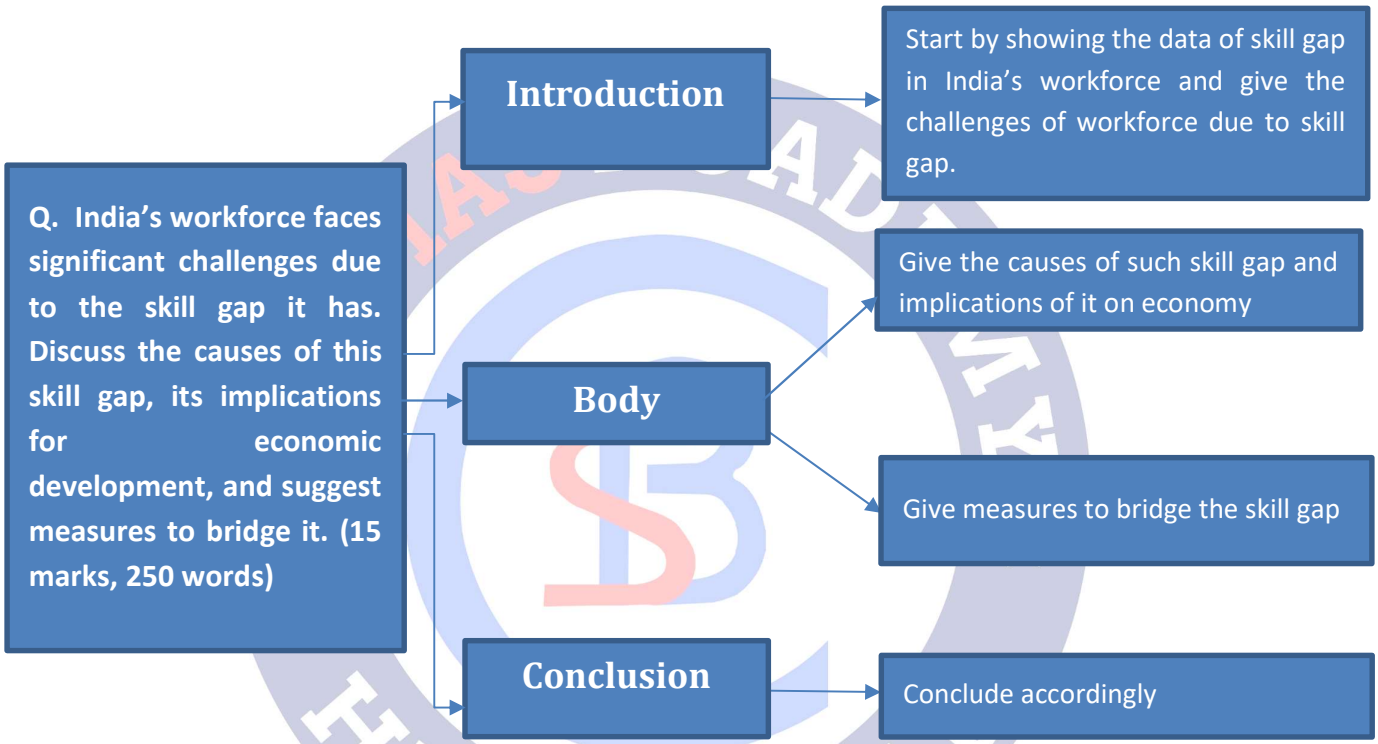
PRACTICE QUESTION

Q. India's workforce faces significant challenges due to the skill gap it has. Discuss the causes of this skill gap, its implications for economic development, and suggest measures to bridge it. (15 marks, 250 words) (15 marks, 250 words)

APPROACH



MODEL ANSWER

India is home to one of the world's largest and youngest workforces, with over **521 million people** in the working-age group (15–64 years). However, only **4.4%** of the labour force has formal vocational training, as per the Periodic Labour Force Survey (2022–23). This skill gap threatens to limit the benefits of India's demographic dividend.

CHALLENGES FACED BY WORKFORCE DUE TO SKILL GAP:

- **Unemployment and Underemployment**: A mismatch between the skills possessed by job seekers and the requirements of industries leads to joblessness or workers being forced into roles below their potential.

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- **Stagnant Wages:** Skilled sectors offer 3-5 times higher wages compared to unskilled roles, exacerbating income inequality. Migrant labourers in urban areas are often stuck in menial jobs due to a lack of specialized training.
- **Limited Career Growth**: Workers without up-to-date skills face difficulties in career advancement and are more susceptible to job losses due to automation.
- **Low Productivity and Competitiveness:** An inadequately skilled workforce reduces the productivity of industries, limiting their competitiveness in global markets.

CAUSES OF THE SKILL GAP:

1. **Low Formal Training Coverage**: Only 4.4% of youth receive formal technical training, compared to **52% in the US** and **75% in Germany**.
2. **Mismatched Curricula**: Education and skill programs often fail to align with industry demands, leaving 49% of graduates unemployable.
3. **Regional Disparities**: States like **Kerala** have better skilling infrastructure than **Bihar**, leading to uneven opportunities.
4. **Technological Advancements**: Rapid changes in industries demand new-age skills like AI and cybersecurity, which are inadequately addressed.

IMPLICATIONS FOR ECONOMIC DEVELOPMENT

- **Hindrance to Economic Growth**: The **Economic Survey 2023-24** highlights that India needs to create **78.5 lakh new non-farm jobs annually** until 2030 to sustain growth. Limited skilled workers in high-value sectors like IT, renewable energy, and healthcare reduce contributions to GDP.
- **Barriers to Industrial and Technological Advancement**: Sectors such as AI, biotechnology, and green energy require highly skilled workers, which are in short supply in India.
- **Higher Costs for Businesses**: Industries often incur additional costs for retraining and upskilling employees, impacting profitability.
- **Slower Innovation and Startup Growth**: A limited pool of skilled workers stifles entrepreneurship and innovation. While cities like Bengaluru and Hyderabad lead in startups, many Tier-2 and Tier-3 cities lack the skilled workforce to support entrepreneurial ecosystems.
- **Widening Informal Sector**: The informal sector, which employs **80–90%** of India's workforce, offers fewer opportunities for skill development, perpetuating low productivity and poor economic outcomes.
- **Rising Dependency on Foreign Talent**: A skill deficit forces industries to rely on foreign experts for critical roles, increasing costs and limiting domestic talent development.

MEASURES TO BRIDGE THE GAP

1. **Expand Vocational Training**: Increase Industrial Training Institutes (ITIs) and promote schemes like **PM Kaushal Vikas Yojana (PMKVY)**.
2. **Enhance Industry-Academia Linkages**: Collaborate with industries to align curricula with job market needs, as seen in **Germany's dual education system**.
3. **Boost Digital Skills**: Initiatives like **FutureSkills Prime** must be scaled up to train workers in emerging technologies.
4. **Promote Regional Equity**: Establish skill hubs in underserved areas to reduce migration and regional inequalities.

Bridging the skill gap is essential for India to fully harness its demographic dividend and achieve sustainable economic growth. By implementing targeted interventions and adopting global best practices, India can transform its workforce into a globally competitive asset, ensuring inclusive and equitable development.

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30. GLOBAL WARMING

iMPACT ANALYSIS

SYLLABUS:

GS 3 > Environment & Ecology > Climate change

REFERENCE NEWS:

- Recently, in a striking milestone for global warming, the **Copernicus Climate Change Service (C3S)** has reported that 2024 is set to become the warmest year on record. The agency revealed that the global average temperature for the first eleven months of 2024 was **0.72°C above the 1991-2020 average**, and **0.14°C warmer** compared to the same period in 2023.
- This makes it virtually certain that 2024 will surpass all previous records, marking a significant breach of the **1.5°C threshold above pre-industrial levels**, a critical target outlined in the **2015 Paris Agreement**.
- C3S emphasized that the continuous temperature rise highlights the accelerating pace of climate change and the urgent need for global action.

GLOBAL WARMING:

- **Global warming** refers to the **long-term increase in Earth's average surface temperature** caused by both **natural processes** and **human activities**. It results from an enhanced greenhouse effect, where certain gases trap heat within Earth's atmosphere.
- While natural causes have driven climate change over millennia, the **current rapid warming trend is overwhelmingly driven by anthropogenic causes** since the Industrial Revolution. This unprecedented pace poses significant risks to ecosystems, human health, and global stability, necessitating urgent action to mitigate its effects.

Natural Causes of Global Warming

- **Solar Variability**:
  - Fluctuations in the sun's energy output can lead to slight changes in Earth's temperature over long periods.
  - Example: Periods of increased solar activity (e.g., solar maxima) can temporarily warm the planet.
  -
- **Volcanic Activity**:

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- Volcanic eruptions release greenhouse gases like carbon dioxide (CO_2) and water vapor into the atmosphere, contributing to short-term warming.
- However, they can also release aerosols, which temporarily cool the atmosphere by reflecting sunlight.

- **Earth's Orbit and Tilt (Milankovitch Cycles)**:
  - Over thousands of years, variations in Earth's orbit, axial tilt, and precession affect the distribution of sunlight, leading to natural climate shifts such as ice ages and interglacial periods.
- **Natural Greenhouse Gas Emissions**:
  - Wetlands, thawing permafrost, and oceanic processes naturally release gases like methane (CH_4) and CO_2, which can contribute to global warming.

Anthropogenic Causes of Global Warming

- **Burning Fossil Fuels**:
  - Human activities like using coal, oil, and natural gas for energy release large amounts of CO_2, the main driver of the current warming trend.
  - For instance, according to the **IPCC AR6 (Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)),** in 2019, the energy sector was responsible for **34% of global greenhouse gas emissions**, amounting to approximately **20 $GtCO_2$-equivalent**.
- **Deforestation**:
  - The removal of forests reduces the ability to absorb CO_2, while the decomposition or burning of trees releases stored carbon.
  - For instance, the IPCC AR6, states that land-use changes, primarily **deforestation**, accounted for **13–21% of global total anthropogenic GHG emissions** between 2010 and 2019.
- **Industrial Activities**:
  - Manufacturing processes emit potent greenhouse gases like methane and nitrous oxide, which are far more effective at trapping heat than CO_2.
  - The IPCC AR6 Report highlights that the industry sector contributed **24% of global greenhouse gas emissions in 2019**.
- **Agricultural Practices**:
  - Livestock farming releases methane through enteric fermentation, and the use of nitrogen-based fertilizers emits nitrous oxide.
  - The **IPCC AR6** reveals that the Agriculture, Forestry, and Other Land Use (AFOLU) sector was responsible for **13–21% of total anthropogenic GHG emissions**

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between 2010 and 2019, with methane emissions from livestock and rice paddies being significant contributors.

- **Urbanization**:
  - Cities create heat islands due to concrete structures and increased energy consumption, locally raising temperatures and contributing to global warming.

IMPACTS OF GLOBAL WARMING:

ENVIRONMENTAL IMPACTS

- **Rising Global Temperatures:**
  - Global temperatures have already risen by **1.1°C** above pre-industrial levels due to human activities.Without significant emission reductions, temperatures could exceed **1.5°C** in the next two decades.
  - For instance, as per the **IPCC AR6,** global warming is unequivocally linked to anthropogenic activities, with warming trends accelerating post-1970.
- **Melting Glaciers and Rising Sea Levels**
  - Glaciers across the globe are melting at an unprecedented rate due to rising temperatures, with profound consequences for freshwater resources, sea levels, and ecosystems.
  - For instance, **Venezuela recently became the first country in modern history to lose all its glaciers**, as the **Humboldt Glacier** was reclassified as an ice field. The loss of the Humboldt Glacier highlights how warming temperatures and reduced snowfall are driving glaciers to extinction worldwide.
  - **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).
- **Increased Frequency of Extreme Weather Events**
  - The intensity of hurricanes, heatwaves, and heavy rainfall has increased globally.
  - Extreme events are expected to become more frequent and severe with ongoing global warming.
  - According to NASA, the worldwide intensity of extreme wet and dry events has been closely linked to global warming. From 2015 to 2021, **the frequency of these events was four per year**, compared to three per year in the previous 13 years.

ECOSYSTEM IMPACTS

- **Changes in Biodiversity and Species Extinction**
  - Many species are unable to adapt to rapid climate changes, leading to habitat loss and extinction.

- For instance, as per the IPCC Special Report on the Ocean and Cryosphere, **70–90% of coral reefs are at risk at 1.5°C warming**, and up to **99% may be lost at 2°C**, due to ocean warming, acidification, and deoxygenation.

- **Impact on Vegetation and Agriculture**
  - Changes in temperature and precipitation disrupt crop cycles and reduce yields.
  - Crops like wheat and maize may see productivity drops of up to **30% in Africa by 2050**.
  - For instance, as per the **UNFCCC**, prolonged droughts in East Africa have led to food insecurity for **over 20 million people**.

SOCIO-ECONOMIC IMPACTS

- **Effects on Food Security, Poverty, and Malnutrition**
  - Climate-induced disruptions to agriculture increase food prices and worsen malnutrition. Vulnerable regions, especially in developing countries, face compounded risks of poverty and hunger.
  - According to the **Food and Agriculture Organization (FAO)**, the 2023 drought in the Horn of Africa was among the worst in recent decades, impacting agriculture, livestock, and food security across the region.
- **Economic Repercussions:**
  - Climate change impacts economies dependent on natural resources, such as agriculture and fishing.
  - Developing nations face significant economic losses due to rising disaster costs and reduced productivity.
  - For instance, the NBER working paper reveals that global GDP could have **been 37% higher without global warming** from 1960 to 2019. Additionally, the study in Nature predicts a nearly 20% decline in average incomes over the next 26 years due to climate change, highlighting its significant impact on global economic productivity and potential.

HUMAN HEALTH IMPACTS

- **Spread of Diseases**
  - Warmer temperatures expand the habitats of disease vectors like mosquitoes, increasing diseases like malaria and dengue.
- **Heat-Related Illnesses**
  - Increased heatwaves have led to higher cases of heatstroke, cardiovascular stress, and mortality.

- Urban areas with dense populations face greater risks due to the **"urban heat island" effect.**
- **The World Health Organization (WHO)** estimates that climate change could result in approximately **250,000 additional deaths** per year worldwide, from causes such as malnutrition, malaria, diarrhea, and heat stress, in the period between 2030 and 2050.

INDIA'S INITIATIVES TO COMBAT GLOBAL WARMING:

International Commitments

- **Panchamrit Goals**:
  - Achieve **500 GW non-fossil energy capacity** and meet **50% energy needs from renewables** by 2030.
  - Reduce **carbon intensity by 45%** and **carbon emissions by 1 billion tonnes** by 2030.
  - Achieve **net zero emissions by 2070**.
- **Enhanced NDCs**: Updated commitments under the Paris Agreement.

Renewable Energy Transition

- **National Solar Mission**: Target of **280 GW solar energy** by 2030.
- **National Green Hydrogen Mission**: Aims to make India a hub for green hydrogen.
- **International Solar Alliance (ISA)**: Promotes global solar energy adoption.

Forest and Ecosystem Conservation

- **National Afforestation Programme**: Restores forests to create carbon sinks.
- **CAMPA**: Compensatory afforestation for diverted forest land.
- **Nagar Van Yojana**: Develops urban forests.

Energy Efficiency and Conservation

- **PAT Scheme**: Improves energy efficiency in industries.
- **UJALA**: Distributed **370 million LED bulbs**, reducing **38 million tonnes of CO_2 annually**.
- **National Smart Grid Mission**: Modernizes energy distribution systems.

Sustainable Urban Development

- **Smart Cities Mission**: Builds sustainable urban infrastructure.
- **AMRUT**: Improves water supply and urban transport.
- **Swachh Bharat Mission**: Incorporates waste-to-energy projects.

Climate-Resilient Agriculture

- **PM Krishi Sinchayee Yojana**: Promotes micro-irrigation and water efficiency.
- **National Bamboo Mission**: Boosts green cover and farm income.

Low-Carbon Transportation

- **National Electric Mobility Mission Plan**: Promotes electric vehicles.
- **Green Highways Mission**: Plants trees along highways.

Behavioral Change

- **Mission LiFE**: Encourages sustainable lifestyles and eco-friendly practices.

International Collaborations

- **One Sun, One World, One Grid (OSOWOG)**: Connects renewable energy grids globally.
- **Climate Leadership**: Active role in G20 and global climate negotiations.

INTERNATIONAL EFFORTS

- **UNFCCC**: Framework for global climate action, including the annual COP meetings.
- **IPCC**: Provides scientific assessments and reports on climate change impacts and solutions.
- **Paris Agreement (2015)**: Aims to limit global warming to 1.5–2°C, with nations setting emission reduction targets.
- **Kyoto Protocol (1997)**: Introduced binding emission reduction targets for developed countries and mechanisms like carbon trading.
- **Green Climate Fund (GCF)**: Supports climate projects in developing countries to reduce emissions and build resilience.
- **Montreal Protocol (1987)**: Focuses on phasing out ozone-depleting substances, indirectly aiding climate mitigation.
- **Global Methane Pledge (2021)**: Targets a 30% reduction in methane emissions by 2030.
- **International Solar Alliance (ISA)**: Promotes the global deployment of solar energy, co-founded by India and France.
- **Mission Innovation**: Advances clean energy technologies and innovation.
- **Sustainable Development Goal 13 (SDG 13)**: Advocates urgent climate action as part of the global development framework

WAY FORWARD

- **Global Commitments**: Nations must adhere to and exceed the targets set under the **Paris Agreement** and **Enhanced NDCs**. Increase funding for the **Green Climate Fund (GCF)** to support climate adaptation and mitigation in developing countries.
- **Technology Sharing**: Enhance cooperation on clean energy technologies through platforms like **Mission Innovation** and the **International Solar Alliance**. Expand access to carbon capture, utilization, and storage (CCUS) technologies globally.
- **Scaling Renewable Energy**: Invest heavily in solar, wind, and green hydrogen to reduce dependency on fossil fuels. Enhance infrastructure for grid integration of renewable energy, focusing on initiatives like **Green Energy Corridors**.
- **Decentralized Systems**: Promote off-grid and community-based renewable energy systems to increase rural energy access.
- **Adaptation**: Strengthen climate-resilient urban infrastructure under programs like **Smart Cities Mission** and **AMRUT**.
- **Sustainable Development**: Incorporate climate risks into urban planning, particularly for vulnerable coastal and flood-prone areas.
- **Afforestation**: Expand reforestation and afforestation projects under **CAMPA** and **National Afforestation Programme**.

- **Nature-Based Solutions**: Promote conservation of wetlands, mangroves, and forests as natural carbon sinks.
- **Industrial Efficiency**: Strengthen initiatives like the **PAT Scheme** to reduce energy consumption in industries.
- **Consumer Awareness**: Encourage the use of **energy-efficient appliances** through labeling programs like **Star Rated Appliances**.
- **Climate-Smart Agriculture**: Scale up micro-irrigation and sustainable farming techniques under **PM Krishi Sinchayee Yojana**.
- **Methane Reduction**: Promote alternative livestock feed and better manure management to cut agricultural methane emissions.
- **Mission LiFE**: Advocate for sustainable consumption and production patterns at individual and community levels.
- **Public Awareness**: Run awareness campaigns on the impacts of global warming and the role of citizens in mitigation.
- **Policy Implementation**: Enforce stricter emission standards for industries, vehicles, and power plants.
- **Monitoring and Accountability**: Regularly track and report progress on climate goals through transparent mechanisms.
- **Green Financing**: Mobilize private sector investments in renewable energy and climate adaptation projects.
- **Carbon Pricing**: Implement carbon trading markets to incentivize low-carbon **technologies.**
- **UNFCCC and COP Meetings**: Push for binding agreements with clear timelines and accountability measures.
- **Global Methane Pledge**: Expand participation and implementation to curb short-lived climate pollutants.

PRACTICE QUESTION

Q. Discuss the causes of global warming and their impacts on the environment, ecosystems, and human societies. (10 marks, 150 words)

APPROACH

Mention 2024 being the warmest year as per C3S and how it highlights the urgency to tackle global warming.

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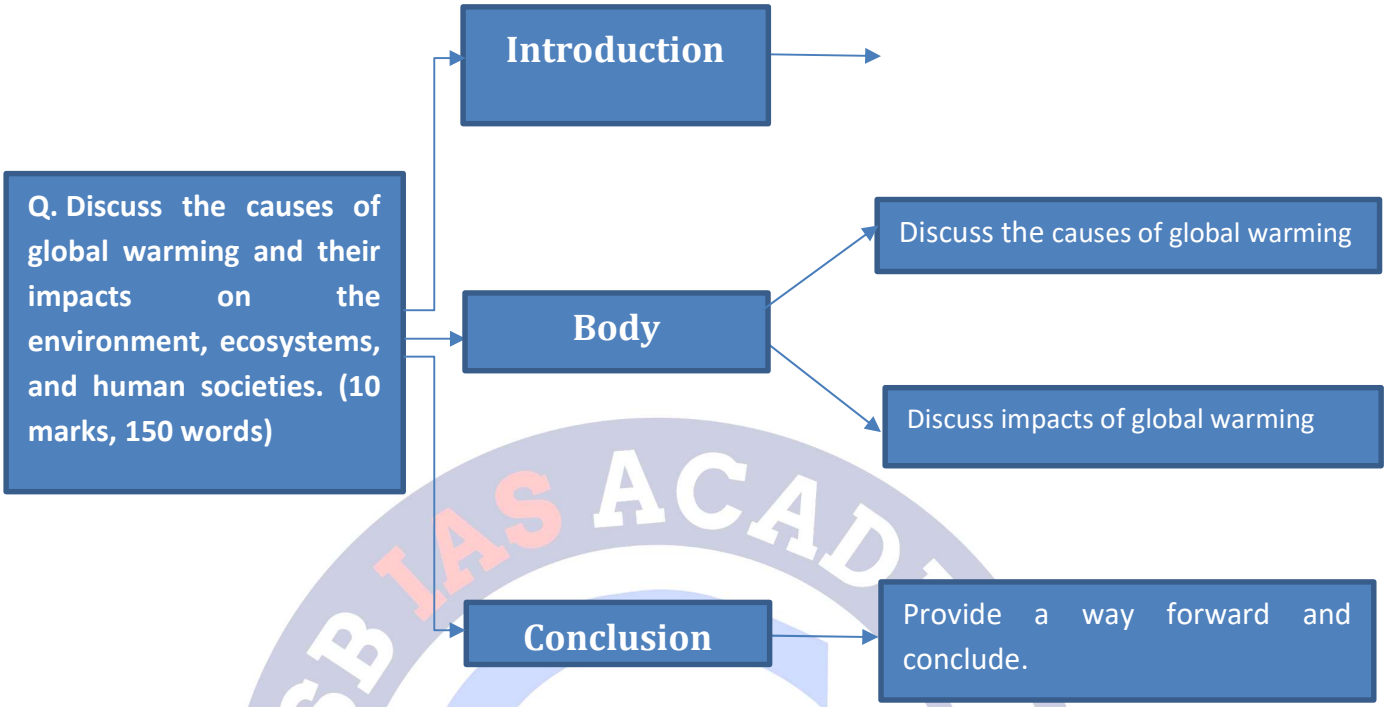

MODEL ANSWER

Global warming, predominantly caused by human activities, poses a grave threat to the planet. As per the Copernicus Climate Change Service (C3S), 2024 is set to be the warmest year on record, breaching the critical 1.5°C threshold above pre-industrial levels. This underscores the urgent need for global action.

Causes of Global Warming:

- **Natural Causes**:
  - **Solar Variability**: Changes in solar activity influence Earth's temperature.
  - **Volcanic Eruptions**: Release greenhouse gases like CO_2, causing temporary warming.
  - **Earth's Orbit and Tilt**: Long-term cycles alter sunlight distribution, driving natural climate shifts.
  - **Natural Emissions**: Wetlands and thawing permafrost release methane and CO_2.
- **Anthropogenic Causes**:
  - **Burning Fossil Fuels**: Contributes 34% of global greenhouse gas emissions (IPCC AR6).
  - **Deforestation**: Reduces CO_2 absorption and accounts for 13–21% of global emissions.
  - **Industrial Processes**: Emit potent gases like methane and nitrous oxide.

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- **Agriculture**: Methane from livestock and nitrous oxide from fertilizers are major contributors.
- **Urbanization**: Heat islands and high energy consumption amplify warming.

Impacts of Global Warming:

- **Environmental Impacts**:
  - Rising global temperatures and accelerated glacier melting (e.g., Humboldt Glacier in Venezuela).
  - Increased sea level rise due to Greenland ice sheet loss, contributing 20% of the rise (WWF).
  - More frequent extreme weather events, such as hurricanes and heatwaves (NASA).
- **Ecosystem Impacts**:
  - Up to 99% of coral reefs at risk if warming exceeds 2°C (IPCC SROCC).
  - Reduced agricultural yields, with crops like maize and wheat facing 30% productivity losses in Africa by 2050.
- **Socio-Economic Impacts**:
  - Food insecurity affecting over 20 million people in East Africa due to droughts (UNFCCC).
  - Economic losses, with global GDP projected to decline by 20% in the next 26 years.
  - Rising health risks from heatwaves and expanding disease vectors like malaria and dengue.

Way Forward:

- **Emission Reduction**:
  - Transition to renewable energy, particularly solar and wind.
  - Enforce stricter emission regulations on industries and urban development.
- **Climate Resilience**:
  - Strengthen adaptation strategies under programs like the Green Climate Fund.
  - Promote afforestation and nature-based solutions to enhance carbon sinks.
- **Global Collaboration**:
  - Increase financial and technological cooperation through platforms like the International Solar Alliance and Mission Innovation.

Global warming demands immediate and coordinated action to mitigate its catastrophic impacts. Addressing both natural and anthropogenic causes through sustainable practices and international efforts is essential to secure a livable future.

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