



# VAJIRAO IAS ACADEMY

India's Premier Coaching Institute for Civil Services (IAS/PCS)



## WEEKLY **CURRENT** AFFAIRS

24<sup>th</sup> MAR - 29<sup>th</sup> MAR 2025

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## DIRECTOR'S MESSAGE



“Civil Service is not just a job; it is an opportunity, to do your bit for society and to contribute to nation-building. It is an opportunity to realise your potential and make a meaningful contribution in the emancipation of masses.”

**Mr. Dilip Kumar**

**Director, Vajirao IAS Academy**

Good Civil Servants ensure efficient and smooth governance. They are the backbone of the country and they have the power to make a difference in people's life.

We have set up extremely tough targets for ourselves. Now a day's, most of the students are well aware and focused about their aim. They just need a streak of guidance. We feel that we have done our bit in providing that blue streak of guidance and we are honoured to be a reason of smile on certain lips, proud to be your teacher, friend and guide.

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# I. SIMPLIFY EDITORIAL

## [1.1] Migration Trends Five Years After COVID-19

**Syllabus: Indian Society & Geography [GS Paper-1], Economic Development [GS Paper-3]**

### **Context**

Migration patterns have undergone significant shifts in the aftermath of the COVID-19 pandemic. While rural-to-urban migration has resumed, international emigration has diversified, presenting new challenges and opportunities for migration governance.

### **Migration Trends Post-COVID-19**

#### **Restoration of Rural-to-Urban Migration**

- The pandemic has been a major disruption to rural-to-urban migration the world over, yet migration has substantially reopened five years later. Urbanization remains an ongoing trend with a projection of about 68% of the global population residing in urban areas by the year 2050. Of this growth, over 90% is projected to take place in Asia and Africa, with space for countries such as India, China, and Nigeria taking center stage.
- The pursuit of economic opportunities, with significantly higher wages in cities than in rural areas, drives this migration. One other major driver of rural-to-urban migration is structural transformation, which involves the movement of labor from agriculture to sectors of higher productivity. Migration was facilitated even further by improved transport infrastructure, that is, roads linking far-off rural hamlets with the urban center.

#### **Diversification of International Emigration**

- The international pattern of migration has diversified post-pandemic. In fact, urban areas are increasingly viewed as staging points for international emigration. Urban migrants accumulate resources and the experience necessary to lower the barriers to moving abroad. This is clearly exhibited in Sub-Saharan Africa, where rural-urban migrants have the propensity to develop international migration intentions compared to non-migrants.
- Gradient disparities between countries, food insecurity, and conflicts remain a push factor for international migration. However, development assistance aimed at rural areas can reduce the pressures of migration through the provision of local economic opportunities.

## Challenges in Migration Governance

- **Urbanization Pressure:** The huge influx of migrants into cities presents significant challenges to urban infrastructure and services. The cities accommodating more people are faced with many other challenges, such as the housing deficit, transportation needs, and environmentally sustainable development. Such agglomeration of urban growth, especially in developing countries, poses greater challenges.
- **Health Risks:** Urbanization and migration determine health outcomes. Often, migrants confront an increased risk of NCDs due to lifestyle changes accompanying life in urban areas. The right interventions are needed to reduce these health inequalities in both urban and migrant populations.
- **Integration of Migrants:** The integration of migrants into host communities continues to pose a challenge. Initially, some social links help migrants enter this new environment, but as time goes by, the strength of these social links diminishes. The new migrants find it much more difficult to reconnect with their place of origin or integrate into the new environment. Therefore, policies and programs to promote social cohesion are needed to integrate them successfully.

## Improving Migration Governance

- **Strengthening Infrastructure:** Infrastructure in towns needs to invest so as to provide growing masses with initial urban habitats, a more efficient transportation system, and access to healthcare facilities. Migrants are able to get supported by these.
- **Landed Development Initiatives:** The policies of development should thus deliberately focus on managing migratory pressures through offering opportunities in rural areas. Investments in agriculture, literacy or education, and the local industry would make rural life more viable in tandem with reducing the necessity for migration.
- **Legal Pathways for Migration:** Establishing effective channels for international migration is very important for governments. These should be highly prioritized on skill matching between the migrant and labor market demands and humane treatment of the migrants.
- **Health Interventions:** Specific targeted interventions are needed to tackle the health risks that accrue with migration. A comprehensive program promoting healthy lifestyles among urban populations and migrants can reduce the incidence and burden of noncommunicable diseases (NCDs).
- **Social Cohesion Policies:** Successful migration governance incorporates these policies on social integration, by linking people with their communities, and connecting them to their places of origin through community building.

## Conclusion

Five years after COVID-19, migration patterns have resumed with new dynamics shaping rural-to-urban movement and international emigration. While these trends offer economic and demographic benefits, they also pose challenges that require robust governance frameworks. Strengthening infrastructure, promoting development in rural areas, establishing legal pathways for international migration, addressing health risks, and

fostering social cohesion are critical steps toward improving migration governance. Effective management of these issues will not only enhance the lives of migrants but also contribute to sustainable development globally. As nations navigate these complex dynamics, collaboration between governments, international organizations, and local communities will be key to ensuring that migration serves as a catalyst for growth rather than a source of strain.

**Source:** [The Indian Express](#)

## [1.2] Green Transition: Key to India's Viksit Bharat 2047 Vision

**Syllabus: Environment [GS Paper-3], Economy [GS Paper-3]**

### **Context**

India's ambitious vision of becoming a Viksit Bharat (Developed India) by 2047 is intricately tied to its commitment to achieving a green transition. As the fastest-growing large economy, India faces the dual challenge of meeting escalating energy demands while ensuring a sustainable, low-carbon future.

### **The Vision of Viksit Bharat and Green Growth**

#### **Viksit Bharat by 2047**

- The goal of Viksit Bharat envisions India as a developed nation by its centenary of independence in 2047. Achieving this requires sustained economic growth exceeding 8% annually, robust infrastructure, and enhanced living standards.
- Energy independence is pivotal to this vision, as India currently imports 90% of its oil and 80% of industrial coal. Reducing dependency on fossil fuels will enhance economic resilience.

#### **Green Transition Goals**

- India has committed to achieving net-zero emissions by 2070. Interim goals include:
- Reducing emissions intensity by 50% by 2030.
- Installing 500 GW of renewable energy capacity by 2030.
- Transitioning heavy industries to green hydrogen and electrification.
- These objectives align with global climate action while supporting domestic energy security.

#### **Challenges in Balancing Growth and Sustainability**

- **Rising Energy Needs:** The energy demand of India will rise at a large rate owing to the urbanization, industrialization, and population growth in the country. It is not a small task to meet this demand sustainably.

- **Modernizing Infrastructure:** Modern technologies have to improve grid modernization, battery storage, carbon capture technologies for the effective absorption of such large-scale renewable energy into the grid system.
- **Transition Financing:** It's about the whole economy-now transition of around \$290 billion for renewable energy by 2030. Going ahead, international funding will be critical to bringing in innovative new financing models like green bonds.

### Strategies for Achieving Green Growth

- **Leveraging International Partnerships**
  - Collaborating with global players can accelerate technology transfer, skill development, and project management expertise.
  - Public-private partnerships (PPPs) can drive innovation in areas like green hydrogen, critical minerals, and renewable energy integration.
- **Promoting Cutting-edge Technologies**
  - **Green Hydrogen:** The National Green Hydrogen Mission is preparing for the production of low-carbon hydrogen for major industrial sectors, such as steel, cement, and transport.
  - **Battery Innovations:** Developing efficient lithium-ion batteries will give a boost to electric mobility as well as renewable energy storage.
  - **Carbon-capture technologies:** Carbon capture, utilization, and storage (CCUS) technologies help to mitigate emissions from hard-to-abate sectors.
- **Policy Interventions**
  - State-driven policies can incentivize investments in biofuels, renewable energy manufacturing zones, and advanced nuclear technologies.
  - Rationalizing GST on green hydrogen and offering production-linked incentives (PLI) for renewable energy components can enhance domestic manufacturing capabilities.
- **Skilling for the Green Economy**
  - Training programs are essential to equip the workforce with skills for emerging industries like solar panel manufacturing, wind turbine assembly, and hydrogen production.
  - Job creation in the renewable sector will ensure an inclusive transition that benefits all socio-economic strata.

### Sectoral Focus Areas

#### Renewable Energy Expansion

- India aims to achieve an 80% green grid by 2040 and 90% by 2047 through solar, wind, hydroelectric power, and bioenergy.
- Solar power already leads with over 90 GW capacity installed as of 2024.

#### Electric Mobility

- Nearly all new vehicle sales are targeted to be electric by 2035. This shift will reduce urban air pollution while decreasing dependence on imported oil.



### **Industrial Decarbonization**

- Heavy industries like iron, steel, cement, and fertilizers are transitioning to green hydrogen and electrification.
- By 2047, 90% of these sectors are expected to operate on low-carbon technologies.

### **Role of Innovation and Financing**

#### **Innovative Financing Models**

- Blended finance models combining public funds with private investments can de-risk projects in emerging sectors like green hydrogen.
- Multilateral development banks can provide guarantees to attract private capital into high-risk areas.

#### **Energy Transition Investment Monitor**

- Platforms like the "Energy Transition Investment Monitor" track over 1,000 decarbonization projects from concept to commissioning.
- Such initiatives provide transparency in investment opportunities across clean energy landscapes.

### **Conclusion: A Greener Future for Viksit Bharat**

India's journey towards Viksit Bharat is inseparable from its green transition goals. By integrating sustainability into its development strategy, India can emerge as a global leader in climate action while ensuring economic growth.

Achieving this dual objective requires:

1. Strategic international collaborations.
2. Adoption of cutting-edge technologies.
3. Robust policy frameworks.
4. Significant investments in infrastructure modernization.

As India advances towards its centenary milestone in 2047, the synergy between development and sustainability will define its success on the global stage—a true testament to where Viksit Bharat meets green growth.

**Source:** [The Indian Express](#)

## **[1.3] India-China Relations: Balancing Dialogue with Deterrence**

### **Syllabus: International Relations [GS Paper-2]**

#### **Context**

India's relationship with China is undergoing a nuanced recalibration as both nations seek stability amid persistent challenges. Prime Minister Narendra Modi's recent emphasis on dialogue reflects pragmatic diplomacy aimed at balancing economic priorities with security

concerns. India-China relations have historically oscillated between conflict and cooperation, shaped by border disputes, economic interdependence, and evolving geopolitical strategies.

### Historical Context

India-China ties have been marked by border disputes dating back to colonial times. The 1962 Sino-Indian War and subsequent clashes like the Galwan Valley incident underscore the fragility of peace along the LAC. Despite these tensions, economic interdependence has grown, making China India's largest trading partner.

### Diplomatic Shifts

In 2024, military disengagement in eastern Ladakh signaled progress in managing border tensions. High-level meetings between Modi and Xi Jinping have focused on fostering mutual trust while addressing contentious issues like territorial disputes. India's External Affairs Minister has reiterated that normalcy hinges on restoring peace at the border.

### Strategic Balancing

India is adopting a dual approach:

- 1. Engaging China:** Diplomatic overtures aim to stabilize relations and leverage economic opportunities.
- 2. Strengthening Alliances:** Partnerships like the Quad ensure India's security interests are safeguarded amidst regional uncertainties.

### Economic Dynamics

While anti-China sentiment persists, bilateral trade remains robust. Calls for greater Chinese investments highlight India's pragmatic approach to economic collaboration despite strategic concerns.

### Background of India-China Relations

- **Border Disputes:** The Line of Actual Control (LAC) remains a contentious issue, with major clashes such as the 2020 Galwan Valley incident and the 2017 Doklam standoff highlighting unresolved tensions.
- **Economic Relations:** Despite political strains, China remains India's largest trading partner, with bilateral trade exceeding \$136 billion in 2023. However, India faces a significant trade imbalance and has sought to reduce dependence on Chinese imports through initiatives like 'Atmanirbhar Bharat.'

### Recent Developments

- **Military Disengagement:** In 2024, India and China completed military disengagement in eastern Ladakh after years of standoff. This facilitated dialogue between leaders and special representatives.
- **Diplomatic Engagement:** Prime Minister Modi and President Xi Jinping emphasized mutual trust and cooperation during recent meetings. India also resumed access to Hindu pilgrimage sites in Tibet and restored direct flights with China.

- **Economic Collaboration:** Despite anti-China sentiment, trade ties remain strong, with calls for increased Chinese investments in India.

### Strategic Considerations

- **Balancing Diplomatic Engagement and Security:** India continues to hedge its bets by maintaining dialogue with China while strengthening partnerships like the Quad (U.S., Japan, Australia).
- **Geopolitical Shifts:** The evolving global landscape, including U.S.-China dynamics, influences India's approach to Beijing.

### Challenges Ahead

- **Border Security:** The heavily militarized LAC remains a flashpoint for potential conflict.
- **Economic Dependence vs. Decoupling:** India must navigate its reliance on Chinese goods while fostering domestic manufacturing.
- **Trust Deficit:** Deep-seated mistrust and China's assertive foreign policy complicate efforts to normalize relations.

### Future Outlook

India must complement diplomatic efforts with military preparedness to deter aggression along the LAC. Trust-building measures should be pursued cautiously, ensuring engagement occurs from a position of strength rather than vulnerability. Balancing economic development with geopolitical security will be key to navigating this complex relationship.

Source: [The Hindu](#)

## [1.4] India's Approach to Afghanistan: Balancing Engagement

### Syllabus: International Relations [GS Paper-2]

#### Context

The situation in Afghanistan changed drastically after the U.S. withdrew its forces in 2021, leading to the Taliban's return to power. This event sparked worldwide discussions on how to deal with the Taliban regime. Some believe engaging with the Taliban is necessary, while others warn that recognizing them could strengthen a radical regime. India, like many other countries, initially distanced itself but later started engaging with the Taliban for strategic reasons. However, this shift in policy carries both opportunities and risks. To understand this issue better, we must look at past U.S. actions in Afghanistan, India's changing approach, and the challenges of engaging with the Taliban.

## **The U.S. Withdrawal and Its Impact**

The U.S. played a crucial role in Afghanistan for two decades, especially under Presidents Donald Trump and Joe Biden.

- **The Doha Agreement (2020):**  
Under Trump, the U.S. negotiated with the Taliban in Doha, Qatar. This agreement set the stage for the U.S. withdrawal but did not include strong protections for democracy, women's rights, or minority groups.
- **The Fall of Kabul (2021):**  
When Biden completed the withdrawal in August 2021, the Afghan government collapsed, and the Taliban took control. Many Afghans felt abandoned, as two decades of progress—especially in education and women's rights—were quickly reversed.
- **International Response:**
  - The U.S. and European countries distanced themselves from the Taliban government.
  - Russia, China, Pakistan, and some Central Asian nations engaged with the Taliban in different ways.
  - The Taliban remains unrecognized by most countries but continues to consolidate power.

## **India's Changing Approach to the Taliban**

Initially, India strongly opposed the Taliban's rule. It even shut down its embassy in Kabul in 2021. However, India later decided to reopen a small diplomatic office and start engaging with Taliban officials.

### **Reasons for India's Shift in Policy**

#### **1. Pragmatism and Realpolitik:**

- Since the Taliban is in control, India sees engagement as a way to protect its interests.
- Ignoring the Taliban could lead to a loss of influence in Afghanistan.

#### **2. Humanitarian Concerns:**

- India has provided food and medical aid to Afghan people.
- Engaging with the Taliban allows India to continue these efforts.

#### **3. Regional Security:**

- Afghanistan shares borders with Pakistan and China, two countries India watches closely.
- India wants to ensure that Afghanistan does not become a base for anti-India activities.

### **What Has India Done So Far?**

- Reopened a 'technical mission' in Kabul (not a full embassy).
- Held talks with Taliban officials at official levels.
- Reports suggest India may accept a Taliban-appointed ambassador.

## Challenges and Risks of Engaging with the Taliban

While engagement might seem practical, it comes with several risks.

- **Taliban's Internal Conflicts and Instability:** The Taliban is not really a whole entity. There are different factions in conflict with each other like the Haqqani network and Kandahari clerics. Some Taliban leaders who supported more moderate reforms have fled the country. The Afghan economy is weak, and it is increasingly tense with Pakistan.
- **Security and Strategic Concerns for India:** The former Afghan Republic was indeed friendly to India, but the Taliban has been traditionally adverse to Indian interests. Previously, the Taliban conducted a series of attacks specifically aimed at Indian diplomats and missions in Afghanistan. Expecting a change in a radical regime's behavior towards India sounds rather uncertain.
- **Losing the Trust of Afghan People:** The former Afghan Republic was indeed friendly to India, but the Taliban has been traditionally adverse to Indian interests. Previously, the Taliban conducted a series of attacks specifically aimed at Indian diplomats and missions in Afghanistan. Expecting a change in a radical regime's behavior towards India sounds rather uncertain.

## A Balanced Approach: The Way Forward

India needs to find a middle ground—engaging with the Taliban without fully embracing them.

### 1. Support for Afghan Women and Civil Society

- India should advocate for women's rights in Afghanistan.
- One way is to support Afghan women's sports teams and professional initiatives.
- Providing educational scholarships to Afghan students can also help.

### 2. Strengthening Ties with Afghan Opposition and Diaspora

- India should engage with exiled Afghan leaders and democratic forces.
- Hosting conferences and discussions with Afghan opposition groups can keep alternative voices alive.

### 3. Cautious Engagement with the Taliban

- Any diplomatic engagement should be limited and focused on humanitarian efforts.
- Development projects should not be used as propaganda by the Taliban.

## Conclusion

India's approach to Afghanistan is evolving as the situation changes. While some engagement with the Taliban is necessary, blindly supporting them could harm India's long-term interests. A balanced policy one that maintains India's influence while standing by democratic values is the best path forward. By supporting Afghan civil society, women's rights, and opposition groups, India can ensure that it remains a respected and relevant player in Afghanistan's future. In a region full of uncertainty, India must stay flexible, cautious, and strategic.

Source: [The Hindu](#)

## [1.5] Sustaining Water Resources: Role of Communities

### Syllabus: Water Resources [GS Paper-3]

#### Context

On World Water Day 2025, Prime Minister Narendra Modi highlighted the urgency of collective action for water conservation, emphasizing its importance for present and future generations. Coinciding with this event, the Ministry of Jal Shakti launched the "Jal Shakti Abhiyan: Catch the Rain 2025," focusing on community participation in managing water resources. While these initiatives reflect growing awareness of water-related challenges, India's rural water policies reveal systematic gaps that demand immediate attention.

#### Challenges in Rural Water Governance

- **Community participation deficit:** India's water policies tend to exclude local communities in decision-making processes, looking to these communities only for input despite their richness in ecological knowledge. Indigenous practices may have entirely sustainable solutions for specific dynamic environments, but the authority of decision-making lies highly concentrated in the state. For example, Water User Associations were created to support participatory irrigation management and serve to assign operational responsibilities to farmers while taking away their authority over policy decisions on a larger scale. In this way, the centralized structure undercuts community-led initiatives and does not allow for differentiation that would address differing local needs.
- **Marginalized groups suffering more:** The water crisis impacts the economically poor and socially marginalized disproportionately due to their unjust access to resources and infrastructures. These communities continue to be poorly represented in governance structures, thus limiting their ability to impact policies that directly affect their lives. Addressing these inequities demands the recognition of vulnerable groups' agency through inclusive frameworks that integrate such knowledge into sustainable water management systems.
- **Disentangled Governance:** India's current governance model compartmentalizes forests, lands, waters, and biodiversity into distinct policy spheres while ignoring their interdependencies. Such a silo hypothesis leads to inefficiency and unintended adverse influences on ecosystems. For example, traditional management of orans (sacred forests) in western India demonstrates integrated resource management where rainwater harvesting is augmented with forestry cover. Following such holistic practices will definitely enhance coherence in the policy world with better results for the environment.
- **Anthropocentric Policy Orientation:** India's formal policies prioritize human needs over ecological considerations, neglecting the intrinsic value of nature. However, certain rural communities already incorporate a more-than-human perspective into their governance systems by balancing human consumption with ecosystem health—for example, adjusting irrigation schedules based on animal needs. Adopting this approach at a national level could align India's policies with global trends recognizing ecosystems as living entities deserving legal protection.

- **Climate Change Threats:** Climate change exacerbates India's water challenges through erratic rainfall patterns and increasing droughts or floods. A recent study predicts that India's water gap will widen significantly as global temperatures rise. Building climate-resilient infrastructure is essential to mitigate these impacts while preserving existing resources through adaptive measures like rainwater harvesting systems and modern technologies such as smart irrigation networks.

### Solutions for Sustainable Water Management

- **Decentralized Governance Frameworks:** Empowering local communities by decentralizing decision-making processes can enhance policy responsiveness to unique environmental contexts. Capacity-building initiatives should equip communities with scientific knowledge while respecting traditional wisdom to create balanced solutions.
- **Equitable Access Strategies:** Policies must actively involve marginalized groups in shaping governance structures while providing them with necessary resources for meaningful participation. Ensuring equity in access not only addresses social vulnerabilities but also improves overall sustainability outcomes by leveraging diverse perspectives.
- **Integrated Ecosystem Management:** Recognizing the interconnectedness of natural resources is crucial for effective governance. Policymakers should adopt integrated frameworks inspired by traditional practices like *orans*, which promote biodiversity conservation alongside efficient resource utilization.
- **Legal Recognition for Ecosystems:** Introducing legal protections for natural water bodies as living entities can safeguard ecosystems from exploitation while fostering sustainable usage patterns aligned with ecological health priorities.
- **Climate-Resilient Infrastructure Development:** Combining traditional techniques such as stepwells with modern innovations like climate-responsive storage facilities can strengthen India's ability to withstand extreme weather events while reducing reliance on depletable sources.

### Way Forward:

- While current policies emphasize community participation, practical implementation often falls short due to superficial engagement mechanisms that exclude local voices from meaningful decision-making roles. Policymakers must prioritize genuine inclusion by addressing structural barriers limiting community autonomy while supporting capacity-building efforts tailored to diverse needs.
- Recognizing limitations inherent within traditional practices is equally important; integrating scientific advancements without undermining indigenous wisdom can create balanced solutions addressing contemporary challenges effectively.

### Conclusion

India's rural water policies require transformative changes aligning governance structures with modern environmental realities while empowering communities through decentralized frameworks promoting equity and sustainability across diverse contexts—both human-centric and ecological alike.

Source: [The Hindu](#)

## [1.6] India's Cotton Crisis: A Policy-Made Disaster

### Syllabus: Economy [GS Paper-]

#### Context:

Prior to recent years India maintained positions as one of the principal global cotton producers followed by major exporters in the world. Current production levels of cotton in the country remain significantly lower thus leading to more imports than exports of this agricultural product. The cotton crisis emerged because of defective government policies and GM crop restrictions compared to other natural causes.

- New technologies, especially hybrid and genetically modified GM cotton, pushed India to join the ranks of major cotton producers.
- C.T. Patel pioneered H-4 which became recognized as the first hybrid cotton in history when he developed it during 1970.
- Cotton specialist B.H. Katarki pioneered Varalaxmi which became the initial interspecific hybrid cotton during 1972.
- The introduction of GM Bt cotton during 2002-03 brought a solution to combat the damaging American bollworm pest.
- New technology Bollgard-II entered the market in 2006 to deliver improved pest protection capabilities.
- By 2013-14 Bt cotton seeds had become the major cotton farming technology in India covering all major fields and achieving record yields of 566 kg per hectare.

#### The Fall of Cotton Production

- Indian cotton production expanded from 13.6 million bales in the year 2002-03 to 39.8 million bales in 2013-14. The decrease in imports reached 1.1 million bales during this period but exports increased to 11.6 million bales. A complete opposite development has emerged recently.
- Official projections indicate that the cotton output for 2024-25 will reach 29.5 million bales marking its lowest level since 2008-09.
- The Indian cotton market will import 3 million bales while shipping 1.7 million bales throughout 2024-25.

#### Why is Cotton Production Declining?

- Policy Restrictions on GM Crops: The government treats GM crops as “hazardous substances” under the Environment Protection Act, 1986.
- Improved cotton varieties developed as pest-resistant plants remain unavailable for commercial authorization.
- Pink bollworm infestation has increased because farmers cannot access pest-resistant seeds.



## **Regulatory and Policy Failures**

### **Ban on GM Crops:**

- In 2010 the Indian government issued a ban against GM Bt brinjal seed which led to a new pattern of denying GM crop approvals.
- Under the leadership of current authorities field testing for new GM cotton hybrids has become prohibited.
- Scientific evidence points to the necessity of approving new GM crops yet such approvals continue to remain absent.

### **Activist and Judicial Interference:**

- Activist groups have functioned as major barriers against GM crops through their opposition activities which extend toward delaying both research advancement and regulatory approval processes.
- Judicial bodies have stopped policy decisions through their involvement in technical areas and this has caused delays.

## **Economic Impact of the Cotton Crisis**

### **Effect on Trade:**

- India led as the leading cotton producer in 2015-16 at the same time it functioned as a significant exporter.
- The current Indian cotton demand drives significant purchases of the fibre from these major exporting nations: US, Australia, Egypt and Brazil.
- All market reports show that Indian cotton imports grew 2x in value from 2024-25 to reach \$1,040.4 million.
- The export performance of India has decreased toward \$660.5 million while exports reduced to \$729.4 million.
- The United States together with Brazil are pushing India to eliminate the import tax of 11% which applies to cotton.

### **Impact on Farmers:**

- The government prohibits Indian cotton farmers to access the latest genetically modified cotton varieties on the market.
- Indian authorities permit the GM soyameal and corn imports while enforcing a contradictory standard compared to domestic cultivation restrictions.

## **What Needs to Change?**

### **Scientific Approach Over Activism:**

- Science-based decision making represents the appropriate foundation for making policies rather than letting activists create pressure.
- The venues for public engagement must integrate experienced members of the scientific community rather than simply activists groups.

**Reviving GM Research:**

- Government authorities need to grant approval for the deployment of new GM cotton variants which combat pests.
- The approval process for GM crops should become clean through scientific methods and achieve transparency in its monitoring procedures.

**Reducing Import Dependence:**

- India requires an expansion of its cotton cultivation within its borders.
- Access to highest quality technology along with sustainable environmental safety measures should be provided to farmers.

**Conclusion**

- During 1853 Karl Marx reported that British imperial power wiped out India's handloom production and established India's dependency on foreign cotton supplies. The nation faces current circumstances of international dependency because its government pursues ineffective domestic regulations rather than legacy foreign governance patterns.
- The current cotton crisis in India demonstrates that modern scientific progress should not be hindered by outdated governmental policies. The lack of immediate government intervention will result in increased difficulties for farmers and strengthened dependency on foreign cotton imports by India. The present needs an agriculture policy approach that relies on scientific evidence.

**Source:** [The Indian Express](#)



## 2. DAILY CURRENT AFFAIRS

### [2.1] No extension for the PLI Scheme beyond the existing Sectors

#### Syllabus - Economy [GS Paper-3]

##### Context

The Government has determined not to extend the PLI Scheme beyond the existing 14 sectors.

##### Key Highlights

- Despite preliminary success in some sectors, the scheme underperformed in others and noticed delays in incentive payouts.
- Out of the \$23 billion allotted, only \$1.73 billion (8%) has been dispensed as of October 2024.
- \$151.93 billion worth of goods were produced under the scheme—only 37% of the unique target. Firms like Foxconn, Reliance, and Adani confronted delays, unmet objectives, or non-compliance.
- Hence, the government has declined requests to increase production last dates or add new sectors to the scheme.

##### About the PLI Scheme

- **Launch:** In 2020 under the Ministry of Commerce & Industry with an outlay of ₹1.97 lakh crore.
- **Sectors Included:** It covers 14 sectors (Mobile, Pharma, Auto, ACC Battery, Telecom, White Goods, Solar, and so on.)
- **Objectives:** It offers incentives to eligible firms on incremental sales for five years as part of the Make in India initiative.
  - It aims to lessen India's dependence on foreign nations like China and growth employment in hard work-extensive sectors.
  - Raise manufacturing's share in GDP to 25% by 2025
- **Incentive Mechanism:** four–6% on incremental sales over a base year.
  - Applicable to both domestic and foreign corporations registered in India.

##### Benefits of PLI Scheme

- **Electronics Success:** India produced \$49 billion worth of mobiles in FY 2023–24; Apple now manufactures high-end trends in India.
- **Pharmaceutical Growth:** Exports almost doubled to \$27.85 billion from a decade ago.
  - Boosted FDI influx, helped increase core industries, and supported India's '[China Plus One](#)' strategy.

- Encouraged manufacturing in strategic sectors (e.g., semiconductors, sun modules).

### Issues and Concerns

- **Low Disbursement:** Only 8% of incentives dispensed no matter assembly targets.
- **Delays in Subsidies:** They aren't launched on time, ultimately affecting money flow.
- **Unmet Targets:** Many companies failed to initiate or scale up production.
- **Red Tapism:** Bureaucratic hurdles and rigid compliance situations.
- **No GDP Boost:** Manufacturing proportion fell from 15.4% to 14.3% (2020–2024).

**Source:** *The Indian Express*

### Prelims PYQ

1. Consider, the following statements : (2023)

*Statement-I : India accounts for 3.2% of global export of goods.*

*Statement-II : Many local companies and some foreign companies operating in India have taken advantage of India's 'Production-linked Incentive' scheme.*

*Which one of the following is correct in respect of the above statements?*

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I*
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I*
- (c) Statement-I is correct but Statement-II is incorrect*
- (d) Statement-I is incorrect but Statement-II is correct*

**Ans:** (d)

- The Government has determined not to extend the PLI Scheme beyond the existing 14 sectors.
- Despite preliminary success in some sectors, the scheme underperformed in others and noticed delays in incentive payouts.
- Out of the \$23 billion allotted, only \$1.73 billion (8%) has been dispensed as of October 2024.
- \$151.93 billion worth of goods were produced under the scheme—only 37% of the unique target. Firms like Foxconn, Reliance, and Adani confronted delays, unmet objectives, or non-compliance.
- Hence, the government has declined requests to increase production last dates or add new sectors to the scheme.

## [2.2] Iceland's Okjökull, the First Dead Glacier

### Syllabus - Environment [GS Paper-3]

#### Context

Iceland's Okjökull became the first glacier to be formally declared dead due to human-brought on climate change in 2014.

## About Okjökull

- Okjökull was a dome-formed glacier located around the summit crater on Ok, a 1,200 meters shield volcano placed seventy 71 kilometers northwest of Reykjavik, Iceland.
- In 2023, Iceland also created the world's first iceberg graveyard, where ice-like headstones had been constructed for the 15 most important glaciers listed on the Global Glacier Casualty List, all of which can be either dead or seriously endangered.
- This listing includes the Anderson Glacier in Washington state, which, in 2015, was the first U.S. Glacier to be declared dead.

## Earth's Cryosphere

- The term "cryosphere" originates from the Greek word 'kryos' for frost or ice cold.
- It includes the additives of the Earth System at and under the land and ocean floor which can be frozen.
- They include snow cover, glaciers, ice sheets, ice shelves, icebergs, sea ice, lake ice, river ice, permafrost, and seasonally frozen floor, and solid precipitation.
- An ice sheet is described as a mass of glacial land that extends more than 50,000 rectangular kilometers throughout a land.
- There are only two ice sheets on Earth these days, the Greenland and Antarctic Ice Sheets.

## Roles and Significance of Cryosphere

- **Climate Regulation:** Reflects daylight (albedo effect) and enables regulate Earth's temperature.
- **Sea Level Control:** Stores freshwater; melting contributes to rising sea ranges.
- **Global Water Cycle:** A supply of freshwater whilst glaciers and snow soften.
- **Habitat:** Provides ecosystems for specialized species.
- **Indicator of Climate Change:** Sensitive to temperature changes, it serves as a marker for global warming.

## Threats to the Cryosphere and its Global Impact

- **Global Warming:** Higher global temperatures are inflicting extensive melting of glaciers, ice caps, and sea ice.
- **Rising Sea Levels:** Melting ice contributes to higher ocean levels, threatening coastal areas.
- **Loss of Habitats:** Species depending on ice-covered regions face habitat loss.
- **Permafrost Thawing:** Permafrost is a layer of frozen soil, composed of soil, gravel, and sand bound together through ice.
- **Changing Snow Patterns:** Altered snowfall and melting styles disrupt ecosystems and water availability.

## Global Initiatives to Conserve Cryosphere

- **Paris Agreement (2015):** A global treaty with the intention of proscribing global temperature rise to well under 2°C, ideally to 1.5°C, to lessen the effect on the cryosphere and different ecosystems. It encourages countries to reduce greenhouse gas emissions.
- **International Cryosphere Climate Initiative (ICCI):** Established in 2009 because of the COP-15, it is a community of senior policy professionals and researchers that works with governments and companies.
- **IPCC Reports and Climate Action:** The Intergovernmental Panel on Climate Change (IPCC) frequently releases reports that emphasize the need for action to mitigate the effects of climate change on the cryosphere.

- **The National Mission for Sustaining the Himalayan Ecosystem (NMSHE)** is one of the 8 missions under the National Action Plan on Climate Change (NAPCC) with the aid of India.
- **CryoNet (WMO):** The World Meteorological Organization's Cryosphere Observing Network (CryoNet) aims to screen and track changes in the cryosphere.
- **Sustainable Development Goals (SDGs):** The United Nations' SDGs, mainly Goal thirteen (Climate Action) and Goal 15 (Life on Land), include objectives to reduce the influences of climate change on ecosystems, which includes the cryosphere.
- **The Arctic Council:** It is a forum for Arctic countries to collaborate on environmental safety, sustainable development, and climate change mitigation in the Arctic place.
- **Global Ice Monitoring Initiatives:** Programs just like the Global Cryosphere Watch (GCW) and the European Space Agency's CryoSat undertaking offer vital records for monitoring ice mass loss and other cryospheric modifications globally.

### Conclusion

- All living beings rely immediately or not directly on the cryosphere.
- Conserving the cryosphere is vital for maintaining the stability of Earth's climate, ecosystems, and freshwater sources.

**Source: The Indian Express**

### Mains PYQ

#### 1. How does the cryosphere affect global climate? (2017)

- Iceland's Okjökull became the first glacier to be formally declared dead due to human-brought on climate change in 2014.
- Okjökull was a dome-formed glacier located around the summit crater on Ok, a 1,200 meters shield volcano placed seventy 71 kilometers northwest of Reykjavik, Iceland.
- In 2023, Iceland also created the world's first iceberg graveyard, where ice-like headstones had been constructed for the 15 most important glaciers listed on the Global Glacier Casualty List, all of which can be either dead or seriously endangered.
- This listing includes the Anderson Glacier in Washington state, which, in 2015, was the first U.S. Glacier to be declared dead.

## [2.3] Efficiency of Fast Track Special Courts (FTSCs)

### Syllabus - Polity [GS Paper-2]

#### Context

With an disposal rate of 96.28%, Fast Track Special Courts (FTSCs) have notably expedited justice for survivors of sexual crimes by ensuring swift legal proceedings in cases of rape and offenses under the [POCSO Act](#).

#### Fast Track Special Courts (FTSCs)

- They are dedicated courts set up in India to lessen the pendency of cases involving heinous crimes like rape and child sexual abuse by delivering time-bound justice.

- **Establishment:** Initiated in 2019 by the Department of Justice, Ministry of Law & Justice, as a Centrally Sponsored Scheme with funding shared between the central and state governments.
  - 60:40 (Centre:States) for maximum States/UTs with Legislature.
  - 90:10 for Northeastern and Hilly States/UTs.
- **Target:** Under the Scheme, a total of 790 FTSCs, including different POCSO (e-POCSO) courts, are to be established.
  - Each FTSC is anticipated to do away with 41-42 cases per quarter and at least 165 cases annually to ensure timely justice and case backlog reduction.

### Need for Fast Track Special Courts (FTSCs)

- The Supreme Court of India in 2019 issued directives for the rapid disposal of POCSO cases as both the Criminal Procedure Code (CrPC) and the POCSO Act, 2012 mandate strict timelines for investigation and trial.
- Inadequate judicial sources leading to extended trials. Delayed justice fails to serve victims and weakens the regulation's deterrent impact.
- By rushing up the judicial procedure, FTSCs assist to deliver a clear message that society will not tolerate these crimes.

### Key Recommendations by Indian Institute of Public Administration (IIPA)

- **Continuation of the Scheme:** FTSCs ought to preserve, as they may be vital for ensuring streamlined and expedited trials in cases of sexual violence.
- **Strengthening Judicial Infrastructure:** States and High Courts have to appoint special judges skilled in coping with POCSO cases. Ensure sensitization training for judicial officials and workforce.
- **Technological Upgradation of Courtrooms:** Equip court with audio-video recording systems, e-filing of cases & digitization of court data.
- **Strengthening Forensic Support:** Increase the number of Forensic Labs & teach manpower with necessary skills.
  - Ensure timely submission of DNA reviews, thereby accelerating trials and ensuring honest justice.
- **Establishment of Vulnerable Witness Deposition Centres (VWDCs):** Set up VWDCs in every district to allow sensitive and child-friendly recording of testimonies.
  - Appoint a child psychologist at each FTSC to assist sufferers by the pre-trial and trial approaches.

**Source:** *The Indian Express*

### Mains PYQ

1. *We are witnessing increasing cases of sexual violence against women in the country. Despite existing legal provisions against it, the number of such incidences is on the rise. Suggest Some innovative measures to tackle this menace. (2014)*
  - With an disposal rate of 96.28%, Fast Track Special Courts (FTSCs) have notably expedited justice for survivors of sexual crimes by ensuring swift legal proceedings in cases of rape and offenses under the [POCSO Act](#).

- They are dedicated courts set up in India to lessen the pendency of cases involving heinous crimes like rape and child sexual abuse by delivering time-bound justice.
- **Establishment:** Initiated in 2019 by the Department of Justice, Ministry of Law & Justice, as a Centrally Sponsored Scheme with funding shared between the central and state governments.
- **Target:** Under the Scheme, a total of 790 FTSCs, including different POCSO (e-POCSO) courts, are to be established.

## [2.4] Concerns over the Amendment into the RTI Act, 2005

### Syllabus - Governance [GS Paper-2]

#### Context

Over 30 civil society firms are urging the Union government to preserve the Right to Information Act, 2005.

#### Key Highlights

- **Concern Raised:** Organizations urge the government to avoid imposing adjustments to the RTI Act through the [Digital Personal Data Protection Act \(DPDP\) of 2023](#).
  - Section 8(1)(j) of the RTI Act now includes a cover prohibition on disclosing personal data, although it serves the general public interest.
- **Government's Position:** The government defends the trade, mentioning the Supreme Court's judgment on the Right to Privacy (Justice K.S. Puttaswamy case, 2017) as a fundamental right.

#### Concerns Raised by Activists

- The change makes it tougher to access data critical for social audits and uncovering misuse of public funds or corruption.
- RTI requests had been critical in verifying government programs and ensuring duty, e.g., checking food ration distribution.
- The unique RTI Act balanced privacy and transparency; they reject the argument that the adjustments align with the Supreme Court's privacy ruling.

#### Right to Information Act (RTI), 2005

- **Aim:** It was designed to promote transparency inside the functioning of the government by giving residents the right to access data from public authorities.
- **Scope:** The Act applies to public government, which include government departments, ministries, and businesses which might be appreciably funded by the government.
- **Information Accessible to the Public:** Citizens have the right to request data from public authorities. This includes the right to access records, documents, and other information.
- **Exclusions:** Information that can compromise national security, breach confidentiality, or damage the integrity of ongoing investigations.
- **Timeframe for Response:** Public authorities are required to respond to data requests in 30 days. In positive cases, this timeframe may be extended to 45 days.
- **Penalties:** The Act provides for consequences against officers who withhold records without affordable purpose or offer false records.



### Significance of the Act

- **Empowers Citizens:** By gaining access to data from public authorities, promoting transparency and accountability in government.
- **Holds Government Accountable:** Helps in protecting public government liable for their actions, stopping corruption.
- **Promotes Good Governance:** It strengthens democratic methods by ensuring that the government operates transparently, fostering public trust.
- **Enables Social Audits:** Activists and NGOs use RTI to carry out social audits of presidency schemes and services.
- **Access to Public Records:** RTI requests have been used to attain info of presidency contracts, exposing corruption or inefficiencies.
- **Strengthens Democracy:** Provides a tool for citizens to actively take part in the decision-making procedure, improving democracy.

### Criticism of the Act

- **Overburdening Public government:** It has caused an overload of records requests, putting a stress on public government and diverting interest from their primary duties.
- **Misuse of the Act:** Some people or corporations use RTI requests as a tool for harassment or to settle personal or political rankings, leading to pointless administrative burdens.
- **Delay in Processing Requests:** Despite the stipulated time frames for reaction, a few public authorities struggle to adhere to these time limits, inflicting frustration amongst data seekers.
- **Capacity and Training Issues:** Some public authorities lack the essential infrastructure, manpower, and education to efficiently implement the RTI Act.
- **Exemptions and Ambiguities:** The Act's provisions regarding exemptions are from time to time vaguely described, this ambiguity may be exploited to withhold records that ought to ideally be in the public sector.

### Way Ahead

- The RTI Act has played a large position in promoting transparency, decreasing corruption, and empowering residents to actively participate inside the democratic process by conserving government institutions responsible.
- Parliament should codify clean definitions of what constitutes “personal data” and “public interest”.
- Disclosure of personal data needs to be allowed if it serves a bigger public good, along with exposing corruption, ensuring delivery of entitlements, or verifying misuse of public finances.

**Source:** [The Hindu](#)

### Mains PYQ

**1. The Right to Information Act is not all about citizens' empowerment alone, it essentially redefines the concept of accountability.” Discuss. (2018)**

- Over 30 civil society firms are urging the Union government to preserve the Right to Information Act, 2005.
- **Concern Raised:** Organizations urge the government to avoid imposing adjustments to the RTI Act through the [Digital Personal Data Protection Act \(DPDP\) of 2023](#).

- **Government's Position:** The government defends the trade, mentioning the Supreme Court's judgment on the Right to Privacy (Justice K.S. Puttaswamy case, 2017) as a fundamental right.

## [2.5] Seabed Warfare

### Syllabus - International Relations [GS Paper-2]

#### Context

As countries increasingly rely upon undersea infrastructure for communication, energy transmission, and resource extraction, the sea surface has grown to be a contested space.

#### Seabed Warfare

- Seabed warfare encompasses army operations carried out on, from, or concentrated on the ocean surface.
- It includes the use of superior technology which include Unmanned Underwater Vehicles (UUVs), Remotely Operated Vehicles (ROVs), and submersibles to goal essential undersea infrastructure, which includes:
  - **Communication Cables:** Essential for international net and information transmission.
  - **Energy Pipelines:** Vital for transporting oil and fuel.
  - **Sensors and Surveillance Systems:** Used for monitoring and defense.
- Geotech Conflicts refers to geopolitical tensions fueled by using improvements in era. In the seabed struggle space, it includes:
  - **Cyber and Hybrid Warfare:** Deep-sea drones and AI-powered submarines can conduct espionage or sabotage operations without detection.
  - **Autonomous Underwater Systems:** Nations are growing superior UUVs able to surveillance, reconnaissance, and offensive operations.
  - **Seabed Militarization:** There are developing concerns about 'weaponizing' the seabed, consisting of putting in mines or deploying offensive UUVs close to important infrastructure.

#### Strategic Importance of the Seabed

- **Communication Infrastructure:** Over 95% of global net traffic relies on undersea fiber-optic cables. These cables are important for international finance, military communications, and internet connectivity.
- **Energy and Resources:** The seabed hosts large reserves of oil, fuel, rare earth minerals, and polymetallic nodules.
  - Underwater energy pipelines additionally form a crucial part of international energy supply chains.
- **Military and Surveillance Operations:** Nations install sensor networks, submarines, and UUVs for surveillance, intelligence gathering, and military operations on the ocean surface.

#### Global Incidents & Major Players in Seabed Warfare

- **United States:** It has Seawolf-magnificence and Virginia-class submarines equipped with advanced seabed warfare tools.
- **China:** It has advanced deep-sea studies submarines, underwater sensor networks, and artificial intelligence-pushed seabed monitoring systems.

- The Great Underwater Wall—a surveillance network within the South China Sea—pursuits to come across enemy submarines and vessels.
- **Russia:** The specialized Russian submarine Losharik and deep-diving research vessel Yantar have been connected to tap or reduce undersea cables.
- **NATO & European Powers:** NATO has expanded its recognition on defensive undersea infrastructure following current suspected sabotage incidents, inclusive of the Nord Stream pipeline explosions.
  - European countries, which include the UK and France, are investing in seabed safety features.
  - Sabotage of undersea cables in the Baltic Sea in 2023 and 2024.

### India's Efforts in Seabed Warfare

- **Strengthening Submarine Capabilities:**
  - **Project 75 & Project 75I:** Acquisition of Scorpène-magnificence submarines (INS Kalvari) and planning for subsequent-technology submarines.
  - Nuclear Submarines like INS Arihant
- **Focus on Undersea Infrastructure Protection:**
  - India's [Deep Ocean Mission](#) For Deep-Sea Mining & Resource Protection.
- **Seabed Surveillance & Unmanned Systems:**
  - Deployment of Autonomous Underwater Vehicles (AUVs);
  - **Coastal & Deep-Sea Monitoring:** Project By National Institute of Ocean Technology (NIOT).
- **Strategic Alliances & Cooperation:**
  - QUAD Partnership to beautify maritime security and undersea infrastructure safety in the Indo-Pacific.

### Future of Seabed Security

- **Strengthening Seabed Surveillance:** Nations are deploying AI-powered underwater sensors and satellite-based monitoring structures to monitor suspicious seabed activities.
- **Legal and Policy Frameworks:** The **United Nations Convention on the Law of the Sea (UNCLOS)** offers some suggestions for seabed governance, however enforcement stays susceptible.
  - A new global agreement on seabed security is needed.
- **Advancing Defensive Technologies:** Development of anti-UUV structures to counter underwater drones.

**Source: The Indian Express**

### Mains PYQ

1. **Critically evaluate the various resources of the oceans which can be harnessed to meet the resource crisis in the world. (2014)**
  - As countries increasingly rely upon undersea infrastructure for communication, energy transmission, and resource extraction, the sea surface has grown to be a contested space.
  - Seabed warfare encompasses army operations carried out on, from, or concentrated on the ocean surface.

- It includes the use of superior technology which include Unmanned Underwater Vehicles (UUVs), Remotely Operated Vehicles (ROVs), and submersibles to goal essential undersea infrastructure.

## [2.6] Re-skilling TB survivors under control programmes ‘TB champions’

### Syllabus - Health [GS Paper-2]

#### Context

The Meghalaya government is pushing for a TB-free State by re-skilling TB survivors and bringing them back into control programmes as ‘TB champions’.

#### TB Champions

- A TB Champion is a person who has been suffering from TB and successfully finished the remedy.
- As survivors, they could provide valuable aid to those with TB and their families.
- NTEP has designed a standard sensitization and education curriculum for empowering TB survivors as TB Champions.
  - TB survivors themselves can get entry to the self-gaining knowledge of modules to be had on-line.
  - Districts can coordinate with NTEP partners or local NGOs to conduct the training.

#### What is Tuberculosis?

- Tuberculosis (TB) is an infectious disease that most customarily affects the lungs and is as a result of the bacteria *Mycobacterium tuberculosis*.
- It spreads via the air when infected humans cough, sneeze or spit.
- **Symptoms:** prolonged cough (now and again with blood), chest pain, weak point, fatigue, weight reduction, fever, night sweats.
  - While TB usually affects the lungs, it also impacts the kidneys, mind, backbone and pores and skin.
- **Treatment:** It is preventable and curable with antibiotics.
- **TB Vaccine:** The Bacillus Calmette-Guérin (BCG) vaccine remains the only certified vaccine against TB; it affords moderate safety against extreme sorts of TB (TB meningitis) in children and youth.

#### TB in India

- **TB as a global health challenge:** India has the highest TB burden in the world, contributing to 26% of the global burden and 29% of global TB-associated deaths.
  - India is followed by Indonesia (10%), China (6.8%), the Philippines (6.8%), and Pakistan (6.3%).
- **Multidrug-Resistant TB:** India represents 27% of the sector’s multi-drug-resistant TB cases, underscoring the need for specialized treatment approaches.
- The **World Health Organization (WHO)** has known India’s progress, with a 17.7% decline in TB prevalence from 2015 to 2023, a rate more than double the global decline of 8.3%.
- India’s aim is to remove tuberculosis (TB) by 2025, five years beforehand of the global target of 2030.

## Challenges Faced by India in Eliminating TB

- **Drug-resistant TB cases:** India has a high burden of drug-resistant TB, which include multidrug-resistant TB (MDR-TB).
- **Diagnostics and Case Detection:** The accurate and timely prognosis of TB remains a mission.
- **Poor number one health-care and infrastructure:** In many components of India, specifically in rural and remote areas, there may be confined access to healthcare centers.
- **Stigma and Awareness:** Stigma associated with TB result in delays in search of healthcare, and lack of knowledge about the disorder make contributions to its persistence.
- **Private Sector Engagement:** A massive portion of healthcare services in India is furnished through the private sector.
- **Treatment Adherence:** TB remedy calls for a prolonged direction of antibiotics, and ensuring affected person adherence to the whole path is tough.
- **Vulnerable Populations:** Certain populations, which include migrant people, urban slum dwellers, and people living in crowded conditions, are at high risk of TB.

## Steps Taken by Government of India to Eliminate TB

- **Revised National Tuberculosis Control Program (RNTCP):** The RNTCP, launched in 1997, was the flagship program to control TB in India.
- **National Tuberculosis Elimination Program (NTEP):** The Government of India has developed a National Strategic Plan (2017-25) for ending TB in the country by 2025.
- **Pradhan Mantri TB Mukh Bharat Abhiyan (PMTBMBA):** Launched in 2022 for network help to TB patients with the objective to provide nutritional, diagnostic and vocational aid.
- **Universal Drug Susceptibility Testing (DST):** The government has scaled up efforts to provide regularly occurring access to drug susceptibility trying out, supporting to become aware of drug-resistant strains of TB early and tailor treatment for this reason.
- **Ni-kshay portal:** An on-line Ni-kshay portal has been set up to tune the notified TB cases.
- **New Drugs:** Newer drugs which include Bedaquiline and Delamanid for the remedy of drug-resistant TB had been covered in the government's basket of drugs that provided free TB sufferers.
- **R&D for Treatment:** Researchers have been studying shorter three- and four-month publications of anti-tubercular pills, instead of the existing six-month remedy.
- **Vaccine Development:** Trials are underway to test the effectiveness of a vaccine known as Immuvac, which was initially advanced to prevent leprosy, in stopping TB.

Source: [The Hindu](#)

## Mains PYQ

1. *“Besides being a moral imperative of a Welfare State, primary health structure is a necessary precondition for sustainable development.” Analyse. (2021)*
  - The Meghalaya government is pushing for a TB-free State by re-skilling TB survivors and bringing them back into control programmes as ‘TB champions’.
  - A TB Champion is a person who has been suffering from TB and successfully finished the remedy.
  - As survivors, they could provide valuable aid to those with TB and their families.

- NTEP has designed a standard sensitization and education curriculum for empowering TB survivors as TB Champions.

## [2.7] Key issues and Recommendations regarding India's Fertilizer Sector

### Syllabus - Economy [GS Paper-3]

#### Context

The Parliamentary Standing Committee on Chemicals and Fertilizers highlights several key issues and suggestions concerning India's fertilizer sector.

#### Key Recommendations of the Committee

- **Funding Concerns:** The committee is concerned about the Ministry of Finance's reduction within the Department of Fertilizers' finances allocation for 2025-26, mainly impacting the **Nutrient-Based Subsidy (NBS)** and Urea Subsidy Schemes.
- **Nano Fertilizer Promotion:** Committee emphasizes the need to amplify manufacturing potential for nano urea and nano diammonium phosphate (DAP).
  - It requires a method to popularize these nano fertilizers among farmers, mentioning their potential to improve crop yields and reduce traditional fertilizer usage.
- **Raw Material Security:** The committee highlights the lack of mining hire agreements for raw material extraction, exploration, refining, or manufacturing.
  - It recommends that the Centre input into such agreements to bolster domestic supply and obtain self-sufficiency in fertilizers.
- **Fund Utilization:** It points out underutilization of budget throughout various fertilizer classes throughout 2024-25.
  - It recommends that the Centre guarantees complete usage of allocations in a deliberate and continuous manner.
- **Urea Subsidy Scheme:** Given urea's importance in food-grain production, the committee stresses the need for the Urea Subsidy Scheme to retain.

#### Nutrient Based Subsidy (NBS) Policy

- **Objective:** Launched in 2010, the NBS Policy aims to:
  - Provide sponsored fertilizers to farmers
  - Promote balanced use of nutrients, ensuring soil fitness
  - Reduce economic burden by making subsidy nutrient-specific
- **Validity:** The coverage has been approved for implementation till the financial year 2025-26.
- **Legal Framework:** It operates under the Fertilizer (Control) Order (FCO), 1985, which is issued under the Essential Commodities Act, 1955.
  - The FCO sets standards for fertilizer use, specifications, licensing, and buying and promoting regulations.
- **Scope and Eligibility:** The NBS coverage covers 25 grades of Phosphorus (P) and Potassium (K) fertilizers, including common ones like Di Ammonium Phosphate (DAP), Muriate of Potash (MOP), Mono Ammonium Phosphate (MAP), and Triple Super Phosphate (TSP).
  - The government sets a set subsidy rate (in Rupees according to kilogram) for every primary nutrient in those fertilizers: Nitrogen (N), Phosphate (P), Potash (K), and Sulphur (S).

- **Subsidy Determination:** An Inter-Ministerial Committee (IMC) plays a vital function in recommending the per-nutrient subsidy rates for N, P, K, and S.
  - These guidelines are made earlier than the start of every monetary 12 months and are then considered by the Department of Fertilizers for final approval.
- **Key implications:** The NBS coverage allows for the rate of fertilizers to range in keeping with the fee of the raw materials used to provide the fertilizers. Thus the subsidy amount changes, but the farmer nevertheless receives a sponsored fertilizer.

**Source:** [The Hindu](#)

### Prelims PYQ

1. With reference to chemical fertilizers in India, consider the following statements: (2020)

1. At present, the retail price of chemical fertilizers is market-driven and not administered by the Government.
2. Ammonia, which is an input of urea, is produced from natural gas.
3. Sulphur, which is a raw material for phosphoric acid fertilizer, is a by-product of oil refineries.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1, 2 and 3

**Ans:** (b)

- The Parliamentary Standing Committee on Chemicals and Fertilizers highlights several key issues and suggestions concerning India's fertilizer sector.
- **Funding Concerns:** The committee is concerned about the Ministry of Finance's reduction within the Department of Fertilizers' finances allocation for 2025-26, mainly impacting the **Nutrient-Based Subsidy (NBS)** and Urea Subsidy Schemes.
- **Nano Fertilizer Promotion:** Committee emphasizes the need to amplify manufacturing potential for nano urea and nano diammonium phosphate (DAP).
- **Raw Material Security:** The committee highlights the lack of mining hire agreements for raw material extraction, exploration, refining, or manufacturing.
- **Fund Utilization:** It points out underutilization of budget throughout various fertilizer classes throughout 2024-25.
- **Urea Subsidy Scheme:** Given urea's importance in food-grain production, the committee stresses the need for the Urea Subsidy Scheme to retain.

## [2.8] Deep-sea ecosystems beneath the George VI Ice Shelf

### Syllabus - Geography [GS Paper-1]

#### Context

Scientists under the Challenger 150 initiative uncovered thriving deep-sea ecosystems beneath the George VI Ice Shelf in Antarctica.

### About George VI Ice Shelf

- **Location:** Situated in George VI Sound, isolating Alexander Island from Palmer Land, adjoining the Bellingshausen Sea in the Southern Ocean.
- **Governance:** Falls below the Antarctic Treaty System, with energetic studies led by countries like the UK and USA.
- **Geographical Features:**
  - **Length:** Extends from Ronne Entrance to Niznik Island
  - Rich in floating ice shelves, subglacial ecosystems, and complex underwater geography

### Key Findings under Challenger 150 Initiative

- **Flourishing Deep-Sea Ecosystems:**
  - Discovery of massive corals, sponges, icefish, and giant sea spiders
  - Ecosystems survived no matter being reduced off from sunlight and surface nutrients for hundreds of years.
  - The presence of complicated life in absence of known nutrient sources indicates unknown nutrient delivery pathways, beginning new avenues for research.
- **New Species Identified:**
  - Giant phantom jellyfish
  - Octopi, vase-shaped sponges (in all likelihood centuries old), and sea spiders

### About Deep-Sea Ecosystems

- **Definition:** Marine ecosystems taking place under 200 metres, extending into the aphotic area—which accommodates 90% of Earth’s marine habitat.
- **Significant Habitats:**
  - **Abyssal Plains:** Support species like sea cucumbers sustained by marine snow. Marine Snow is natural debris from upper layers, helping food chains and carbon sequestration.
  - **Hydrothermal Vents:** Host chemosynthetic life (e.g., tubeworms, yeti crabs)
  - **Whale Falls:** Create transient but efficient ecosystems (e.g., hagfish)

### Significance of the Discovery

- **Scientific Relevance:** Overshadow preceding assumptions that intense, nutrient-disadvantaged environments can't support complicated life.
  - Opens new frontiers in marine biology, ecology, and geosciences.
- **Climate Change Insights:** As polar ice shelves melt due to global warming, these ecosystems may also undergo dramatic shifts.
  - Studying them enables apprehend atmosphere resilience and predict environmental responses to climate trade.
- **Marine Conservation Imperative:** Emphasizes the need for worldwide frameworks to protect fragile marine biodiversity, specifically in the Southern Ocean.

### International Cooperation & Ocean Decade

- The Challenger 150 programme is a part of the UN Decade of Ocean Science for Sustainable Development (2021–2030).
- It underscores the role of multilateral scientific collaboration in exploring and retaining the deep ocean.



- Endorsed by UNESCO/IOC, the initiative aligns with international sustainable development needs, particularly SDG 14 (Life Below Water).

**Source:** [The DTE](#)

### **Prelims PYQ**

**1. With reference to the United Nations Convention on the Law of Sea, consider the following statements: (2022)**

- 1. A coastal state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baseline determined in accordance with the convention.**
- 2. Ships of all states, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.**
- 3. The Exclusive Economic Zone shall not extend beyond 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.**

**Which of the statements given above are correct?**

- (a) 1 and 2 only**
- (b) 2 and 3 only**
- (c) 1 and 3 only**
- (d) 1, 2 and 3**

**Ans: (d)**

- Scientists under the Challenger 150 initiative uncovered thriving deep-sea ecosystems beneath the George VI Ice Shelf in Antarctica.
- George VI Ice Shelf in Antarctica is situated in George VI Sound, isolating Alexander Island from Palmer Land, adjoining the Bellingshausen Sea in the Southern Ocean.
- **New Species Identified:**
  - Giant phantom jellyfish
  - Octopi, vase-shaped sponges (in all likelihood centuries old), and sea spiders

## **[2.9] In-house Inquiry into the Conduct of Delhi High Court Judge**

### **Syllabus - Polity [GS Paper-2]**

#### **Context**

Recently, the Chief Justice of India (CJI) initiated an unprecedented 3-member in-house inquiry into the conduct of Delhi High Court judge Justice Yashwant Varma.

#### **Origins and Evolution of In-House Inquiry**

- The need for an in-house inquiry mechanism arose in 1995 following allegations of economic impropriety against Bombay High Court Chief Justice A.M. Bhattacharjee.
- In-House Procedure was formulated by the Supreme Court in 1997 following a case related to allegations against Justice V. Ramaswami, a former SC judge.

- The method was refined in 2014 after a sexual harassment complaint caused the establishment of a seven-step inquiry framework

### Key Features of the In-House Inquiry

- **Distinct from Impeachment:** Unlike impeachment, which demands Parliamentary approval under Article 124(4) of the Constitution, the in-house inquiry is an inner mechanism aimed at addressing conduct inconsistent with judicial values.
- **Formation of Inquiry Committees:** Committees generally encompass senior judges from specific High Courts to ensure impartiality.
- **Transparency:** Recent inquiries have verified a commitment to transparency, with reports and evidence made public.

### Process of In-House Inquiry

- **Preliminary Scrutiny:** Complaints against judges are first examined by the Chief Justice of India (CJI) in the case of SC judges, or by the Chief Justice of the respective High Court for HC judges.
- **Formation of a Committee:** If a prima facie case is established, a three-judge committee is formed to research the allegations.
- **Inquiry Proceedings:** The committee examines the evidence, questions the accused judge, and determines whether or not the allegations hold merit.
- **Report Submission:** The committee submits its findings to the CJI, who then makes a decision on in addition action.

### Possible Outcomes

- If the judge is found responsible of misconduct, the document is dispatched to the President of India for consideration of elimination via Parliamentary impeachment.
- If the misconduct is minor, the judge may be recommended to resign voluntarily.
- If the allegations are baseless, the issue is dropped.

### Challenges within the In-House Inquiry Process

- **Lack of Transparency:** The inquiry is performed in the back of closed doors, and reviews aren't made public. It increases concerns about duty.
- **No Binding Authority:** Even if misconduct is established, the judiciary cannot at once dispose of a judge; impeachment by Parliament is required.
- **Rare Impeachment:** The complex impeachment system makes it nearly not possible to impeach judges, as seen in the cases of Justice Ramaswami (1991) and Justice S. N. Shukla (2022).
- **Political Influence:** The impeachment process may be influenced by political issues, reducing its effectiveness.
- **Delayed Justice:** Investigations regularly take years, diminishing public trust in judiciary.

### Notable Cases of Judicial Inquiry in India

- **Justice V. Ramaswami Case (1991):** The first judge to stand impeachment complaints, however Parliament did not impeach him due to political maneuvering.
- **Justice Soumitra Sen Case (2011):** Found guilty of economic misconduct by an in-house inquiry; the Rajya Sabha passed an impeachment motion, but he resigned before the Lok Sabha could vote.
- **Justice S. N. Shukla Case (2022):** Accused of favoring private medical faculties; he was observed guilty by an in-house inquiry, but impeachment did not comply with.

### Recommendations for Reform

- **Transparency of Inquiry Reports:** Increasing transparency will enhance public trust.
- **Judicial Oversight Bodies:** The established order of Judicial Standards and Accountability Commission may be a widespread step toward ensuring transparency and responsibility in the judiciary.
- **Alternative Disciplinary Mechanisms:** Instead of only counting on impeachment, other disciplinary actions like suspensions or fines must be considered.
- **Time-Bound Proceedings:** Delays in inquiries need to be minimized to prevent judicial misconduct from going unpunished.

**Source:** [The Hindu](#)

### Mains PYQ

**1. Critically examine the Supreme Court's judgement on 'National Judicial Appointments Commission Act, 2014' with reference to appointment of judges of higher judiciary in India. (2017)**

- Recently, the Chief Justice of India (CJI) initiated an unprecedented 3-member in-house inquiry into the conduct of Delhi High Court judge Justice Yashwant Varma.
- The need for an in-house inquiry mechanism arose in 1995 following allegations of economic impropriety against Bombay High Court Chief Justice A.M. Bhattacharjee.
- In-House Procedure was formulated by the Supreme Court in 1997 following a case related to allegations against Justice V. Ramaswami, a former SC judge.
- The method was refined in 2014 after a sexual harassment complaint caused the establishment of a seven-step inquiry framework

## [2.10] National Task Force to address students' Mental Health Concerns

### Syllabus - Society [GS Paper-1]

#### Context

The Supreme Court has set up a national task force to address students' mental health concerns and prevent suicides in higher educational institutions.

#### Key Highlights

- The Supreme Court referred to that students suicides in higher educational institutions, along with IITs, have accelerated, surpassing the number of farmer suicides due to agrarian distress.
- The routine incidents highlight the institutional frameworks in addressing students mental health, emphasizing the need for higher mechanisms to prevent suicides.

## Task Force Established

- **10-Member Task Force:** Formed to investigate causes of students suicides, along with ragging, caste-based discrimination, instructional pressure, financial pressure, and mental health stigma.
- **Assessment of Current Frameworks:** The undertaking pressure will evaluate the effectiveness of existing laws, regulations, and frameworks in higher education and advocate enhancements.
- **Authority for Surprise Inspections:** The task force has the authority to conduct surprise inspections at higher education institutions.
- **Flexible Mandate:** The task force can make suggestions after its particular mandate if essential.
- **Reporting Timeline:** The court has ordered the task force to present an interim report within 4 months and a final report within 8 months.

## Student's Suicide in India

- As per the Report of the National Crime Records Bureau 2022, over 13,000 students having ended their lives by committing suicide in the country.
- **Surge in Student Suicides:** Student suicides in India have risen at an alarming annual rate of 4%, double the national average.
- **Gender Trends:** Between 2021-2022, male suicides decreased by 6%, while female suicides accelerated by 7%.
- **States:** Maharashtra, Tamil Nadu, and Madhya Pradesh account for one-third of scholar suicides.

## Reasons for the Rise in Student's Suicide

- **Academic Pressure:** Intense competition and high expectations in educational institutions, in particular in education hubs like Kota.
- **Mental Health Issues:** Increasing rates of depression, anxiety, and stress among students, with insufficient mental health help systems.
- **Social Stigma:** Stigma surrounding mental health, discouraging students from in search of help.
- **Caste and Gender Discrimination:** Discrimination based on caste, gender, and other social elements inside educational institutions.
- **Family and Financial Pressure:** Pressure from families to carry out well academically, frequently mixed with financial issues.
- **Failure and Academic Setbacks:** Struggles with failing tests, educational underachievement, and fear of failure leading to despair.
- **Lack of Support Systems:** Insufficient counseling services and mental health infrastructure in educational institutions.
- **Social Media and Peer Pressure:** The impact of social media on self-esteem, comparison with peers, and bullying.

## Government Initiatives

- **Manodarpan Initiative:** The Union Education Ministry launched 'Manodarpan,' a program providing mental help to students through a national toll-free helpline and internet site.
- **Rajasthan Government Actions:** Issued mental health guidelines in 2022 and 2023, enforced by district administrations.
  - Appointed 90 psychological counselors to aid students.
  - Introduced a toll-free helpline for students' help.

- 10,000 hostel gatekeepers were educated to identify signs and symptoms of mental distress among students.
- **Dinner with DM Initiative in Kota:** A program in which students in distress can meet district administration officials for guidance and counselling.
- **Helpline for Support:** Students dealing with distress or suicidal dispositions can call the helpline at 104 for help.
- **National Mental Health Policy:** Focused on enhancing mental health infrastructure and attention in educational institutions.

### Way Ahead

- **Need for Mental Health Focus:** The **IC3 (Career Counseling Program)** Institute emphasizes the need for a shift in instructional cognizance to prioritize students well-being over aggressive pressures.
- **NCRB Report:** The report advocates for a strong, inclusive profession and college counseling system within institutions to address mental health challenges and scholar aspirations.

**Source:** [The Indian Express](#)

### Mains PYQ

*1. In order to enhance the prospects of social development, sound and adequate health care policies are needed particularly in the fields of geriatric and maternal health care. Discuss. (2020)*

- The Supreme Court has set up a national task force to address students' mental health concerns and prevent suicides in higher educational institutions.
- The Supreme Court referred to that students suicides in higher educational institutions, along with IITs, have accelerated, surpassing the number of farmer suicides due to agrarian distress.
- The routine incidents highlight the institutional frameworks in addressing students mental health, emphasizing the need for higher mechanisms to prevent suicides.

## [2.11] Importance of Inclusive Development for all Regions

### Syllabus - Governance [GS Paper-2]

#### Context

President Droupadi Murmu emphasized the significance of inclusive development for all regions, which include the ones suffering from Maoist extremism in Chhattisgarh.

#### Key Highlights

- She confused the need to stabilize recent development with environmental protection and the inclusion of all sections of society in the development method.
- **Naxalism** or **Left Wing Extremism (LWE)** is one of the crucial challenges to India's inner protection.
- Naxalites are searching to overthrow the State through violent means.
- Naxal affected areas in India are referred to as the 'Red Corridor'.

- The States of Chhattisgarh, Jharkhand, Orissa and Bihar are considered critically affected.
- She emphasised the “saturation method” to ensure that no citizen is left behind in India’s development adventure.

### **Inclusive Development**

- Inclusive Development refers to a development approach that ensures all segments of society have equal access to opportunities, sources, and advantages of economic, social, and political development.
- It makes a speciality of lowering inequality and addressing the needs of various populations.
- The Indian version of inclusive growth, considered from a development economics perspective, has 3 pillars: Market economics, Empowerment, and Pragmatism.
- India ranked 62nd out of 74 emerging economies within the World Economic Forums’ Inclusive Development Index (IDI), remaining released in 2018.

### **National key performance signs**

- The 3 key processes for inclusive development include:
  - Good governance (innovative politics, effective management and engagement within the global economy;
  - Structural transformation, (financial, social and demographic), and;
  - Multi-pronged coverage and programme blend (macroeconomic regulations, sound establishments, public-private region development, effective financial policy control).

### **Identified Segments for Inclusive Development**

- **Tribal and Rural Communities:** Assimilation of communities in society; instructing at grassroot level; power, network connectivity; connectivity through roads; pucca homes; advent to new basic technologies and so forth.
- **Physically Disabled:** Providing facilities along with wheelchairs and audio-visual aids; set up of ramps and tactical paths for clean accessibility; education of people on interacting with differently abled; skilling specially-abled, and so on.
- **Streamlining Unbanked Section:** Awareness has to be furnished associated with the importance of bank accounts in rural and tribal areas, financial literacy, mobile banking and many others.
- **Women:** Pre- and post-pregnancy care, healthcare, education, childcare, skill-development, opportunities for financial development etc.

### **Need for Inclusive Development in India**

- **Addressing Inequality:** India has big disparities in income, education, healthcare, and living standards, specially between urban and rural regions, and amongst different social groups.
- **Empowering Marginalized Communities:** Large sections of society, along with tribal communities, women, and the differently-abled, continue to be excluded from mainstream development and opportunities.
- **Promoting Social Justice:** Inclusive development ensures that each citizen, no matter their historical past, has access to the benefits of growth, promoting fairness and decreasing social tensions.
- **Economic Growth:** India can liberate the total capability of its population, leading to more sustainable and equitable economic growth.
- **Global Competitiveness:** A greater inclusive society leads to a more effective, skilled, and revolutionary staff, enhancing India’s global competitiveness.
- **Sustainable Development:** It aligns with the intention of long-term, sustainable growth, thinking about the needs of all sections of society, including future generations.

## Constitutional Framework for Inclusive Development

- **Fundamental Rights (Part III):**
  - **Equality Before Law (Article 14):** Guarantees equality for all citizens.
  - **Prohibition of Discrimination (Article 15):** Ensures no discrimination on grounds of religion, race, caste, sex, or place of birth.
  - **Equality of Opportunity (Article 16):** Ensures equal opportunities in public employment.
  - **Right to Education (Article 21A):** Guarantees free education for children aged 6 to 14.
  - **Protection of Minorities (Articles 29 & 30):** Safeguards the cultural and educational rights of minorities.
- **Directive Principles of State Policy (Part IV):**
  - **Social Justice (Article 38):** Promotes the welfare of the people, focusing on justice and reducing inequalities.
  - **Promotion of Weaker Sections (Article 46):** Aims to protect and promote the interests of SCs, STs, and OBCs.
  - **Reservation and Affirmative Action:** Articles 15(4) and 16(4) allow for affirmative movement, including reservations in education and employment for SCs, STs, and OBCs.
  - **Panchayats and Local Governance (Part IX):** Article 243N strengthens local self-governance, ensuring the participation of marginalized communities.
  - **Legal Protection for Vulnerable communities:** Laws like the Protection of Civil Rights Act, 1955 and the SC/ST (Prevention of Atrocities) Act, 1989 protect deprived communities from discrimination and violence.
  - **Judicial Oversight:** The Supreme Court and High Courts ensure that rules align with the constitutional values of equality and justice.

Source: [The Hindu](#)

### Mains PYQ

1. **Article 244 of the Indian Constitution relates to administration of scheduled areas and tribal areas. Analyze the impact of non-implementation of the provisions of the Fifth schedule on the growth of Left-wing extremism. (2018)**
  - President Droupadi Murmu emphasized the significance of inclusive development for all regions, which include the ones suffering from Maoist extremism in Chhattisgarh.
  - She confused the need to stabilize recent development with environmental protection and the inclusion of all sections of society in the development method.
  - **Naxalism or Left Wing Extremism (LWE)** is one of the crucial challenges to India's inner protection.
  - Naxalites are searching to overthrow the State through violent means.
  - Naxal affected areas in India are referred to as the 'Red Corridor'.
  - The States of Chhattisgarh, Jharkhand, Orissa and Bihar are considered critically affected.
  - She emphasised the "saturation method" to ensure that no citizen is left behind in India's development adventure.

## **[2.12] Lack of Long-Term Strategies in Indian Cities' Heat Action Plans**

### **Syllabus - International Relations [GS Paper-2]**

#### **Context**

A new study has found out that maximum Heat Action Plans (HAPs) in Indian cities fail to include long-term strategies to combat extreme heat.

#### **Key Highlights**

- The study, **'Is India Ready for a Warming World? How Heat Resilience Measures Are Being Implemented for 11% of India's Urban Population in Some of Its Most At-Risk Cities'**, was conducted by the Sustainable Futures Collaborative (SFC).
- It warns that insufficient planning may cause high heat-related deaths due to intensifying heat waves.
- Researchers recognized 9 Indian cities with populations over 1 million which can be anticipated to stand the highest increases in risky heat index values.
- The study was based on 88 interviews with officers from metropolis, district, and nation governments, including representatives from disaster management, health, urban planning, and labour departments.

#### **Key Findings of the Study**

- **Short-Term Measures in Place**
  - All nine cities had emergency measures along with access to drinking water and altered work schedules to immediately address heat risks.
- **Lack of Long-Term Strategies**
  - The study observed that important long-term actions had been either absent or poorly implemented.
- **Misaligned Urban Planning Efforts**
  - Efforts like increasing urban coloration and inexperienced spaces lacked a focused approach for populations maximum at risk from intense heat.
- **Health System-Focused Strategies**
  - Most long-term measures targeted on strengthening healthcare responses against stopping heat-related influences in the first place.
- **Institutional and Financial Constraints**
  - The study highlighted that a lack of coordination among municipal, district, and state government departments became the largest impediment to effective long-term heat action planning.

#### **Heat Action Plan (HAP)**

- A Heat Action Plan (HAP) is an early caution and preparedness system designed to mitigate the effect of excessive heat.
- It includes both instantaneous and long-term measures to enhance preparedness, enhance data-sharing, and coordinate responses to protect inclined populations from heat-associated health risks.



## Key Recommendations of Heat Action Plans (HAPs)

### • Immediate Measures

- Use of forecasts and early warning systems to alert the general public and government.
- Public focus campaigns on heatwave risks.
- Establishment of heat shelters and cooling centres.
- Provision of easy ingesting water to prevent dehydration.
- Ensuring hospitals are prepared with essential supplies and skilled healthcare employees to deal with heat-associated diseases.

### • Long-Term Strategies

- Urban planning tasks along with tree planting to reduce heat impact.
- Use of heat-resistant building substances to counter the urban heat island effect.
- Implementation of cool roofing technologies to lower indoor temperatures.
- Strengthening coordination amongst government groups, healthcare vendors, community organizations, and emergency offerings for higher heat wave preparedness.

## Way Forward

- Adaptation strategies are gaining importance as global efforts to decrease greenhouse gas emissions remain gradual.
- Solutions like less expensive cooling systems pose environmental risks because of ozone-depleting refrigerants.
- Sustainable alternatives which include green homes, passive cooling, and green infrastructure have to be incorporated into city planning.
- India should develop a national heat strategy and incorporate it into its National Adaptation Plan before COP30 in Brazil.

**Source:** [The Indian Express](#)

## Mains PYQ

### 1. *Bring out the causes for the formation of heat islands in the urban habitat of the world.*

- The study, '**Is India Ready for a Warming World? How Heat Resilience Measures Are Being Implemented for 11% of India's Urban Population in Some of Its Most At-Risk Cities**', was conducted by the Sustainable Futures Collaborative (SFC).
- It warns that insufficient planning may cause high heat-related deaths due to intensifying heat waves.
- Researchers recognized 9 Indian cities with populations over 1 million which can be anticipated to stand the highest increases in risky heat index values.
- The study was based on 88 interviews with officers from metropolis, district, and nation governments, including representatives from disaster management, health, urban planning, and labour departments.

## [2.13] Transgenic Organisms

### Syllabus - Science and Tech [GS Paper-3]

#### Context

US President Donald Trump recently made a mistaken claim that \$8 million has been spent on “making mice transgender,” which was later corrected to “transgenic mice.”

#### Key Highlights

- Media reports clarified that the research concerned hormone treatments for research on hormone therapy, HIV vaccines, breast cancer, and other health sectors— not for altering the gender of mice.
- Studies with transgenic mice have helped understand genetics, most cancers, duplicate, and more. These mice are valuable in modeling diseases because of their genetic similarities to humans.

#### Transgenic organisms

- It refers to an organism or cell whose genome has been altered by the creation of one or more foreign DNA sequences from other species by artificial method.
- Transgenic organisms are generated in the laboratory for research functions.

#### Applications

- Transgenic animals were used to observe genetic approaches, such as the role of DNA in analysing genetic data and the link between oncogenes and most cancers.
- Transgenic animals also help understand regular physiological methods and model human diseases for treatment improvement.
- Animals like goats and cows are engineered to supply healing proteins, which includes insulin.
- Transgenic crops have been produced which might be immune to infectious diseases and improve faster.
- It is utilized in bioremediation to break down pollution like oil spills and heavy metals.

#### Challenges

- There are moral issues concerning animal welfare and the morality of genetic change.
- There are probabilities of Potential environmental or health impacts, including unintended gene flow or allergies.
- The introduction of transgenic organisms is expensive and technically challenging.

#### Conclusion and Way Forward

- Transgenic organisms offer exquisite capability in medicine, agriculture, and environmental management however require cautious handling of moral, environmental, and regulatory concerns to ensure their responsible use.

**Source: The Hindu**

## **Mains PYQ**

### **1. How can biotechnology help to improve the living standards of farmers? (2019)**

- U.S. President Donald Trump recently made a mistaken claim that \$8 million has been spent on “making mice transgender,” which was later corrected to “transgenic mice.”
- Media reports clarified that the research concerned hormone treatments for research on hormone therapy, HIV vaccines, breast cancer, and other health sectors— not for altering the gender of mice.
- Studies with transgenic mice have helped understand genetics, most cancers, duplicate, and more. These mice are valuable in modeling diseases because of their genetic similarities to humans.

## **[2.14] GDP Loss Due to Road Accidents**

### **Syllabus - Governance [GS Paper-2]**

#### **Context**

The Minister of Road Transport and Highways has noted that India is dropping 3% of its GDP due to around 5 lakh road accidents annually in the country.

#### **Report on Road Accidents in India (2022)**

- In 2022, there had been 4,61,312 road accidents in India, inflicting 4,43,366 accidents and 1,68,491 fatalities.
- Compared to 2021, accidents extended by 11.9%, deaths by 9.4%, and accidents by 15.3% in 2022.
- The accident severity (deaths per 100 accidents) decreased from 37.3 in 2021 to 36.5 in 2022.
- Young adults (18-45 years) were 66.5% of road accident victims, even as 83.4% of fatalities had been from people aged 18-60.
- Two-wheelers accounted for 44.5% of road accident deaths, followed by pedestrians (19.5%), motors/taxis/trucks (12.5%), and vans (6.3%).
- Overspeeding was the leading cause, responsible for 72.3% of accidents and 71.2% of deaths in 2022.

#### **Road Accidents causing Loss of GDP**

- Medical treatment charges for accident victims stress healthcare resources.
- Infrastructure damage from accidents demands financial sources for maintenance.
- Loss of profits because of temporary or permanent disability of coincidence victims affects monetary productivity.
- Increased insurance and legal costs add to the financial burden on corporations and people.
- Road accidents lessen tourism and industrial transport performance, impacting the economy.
- Loss of life and productivity in younger and working-age populations (18-45 years) similarly affects GDP growth.

## Government Initiatives

- **National Road Safety Policy India, 2010:** It emphasised the need for better road infrastructure, stricter enforcement of traffic regulations, more desirable emergency medical services, public cognizance campaigns, and advanced post-crash care.
- **Electronic Detailed Accident Report (e-DAR)/ Integrated Road Accident Database (iRAD):** Centralized machine for reporting, handling, and studeath road accident data to improve safety.
- **Speedy Assistance to Accident Victims:**
  - Award ₹25,000 for Good Samaritans who help coincidence victims.
  - **Faster compensation:** ₹2.5 lakh for grievous hurt, ₹5 lakh for loss of life.
  - **Enhanced compensation for hit-and-run victims:** ₹2 lakh for death, ₹50,000 for grievous harm.
  - Simplified approaches for third-party insurance, which includes hired drivers.
- **Vehicle Fitness:** Old, undeserving vehicles contribute to accidents. The Ministry is setting up version Inspection and Certification Centers across States/UTs (28 States/UTs covered by 2024).
- **IIT Madras Collaboration:** Establishing a Center of Excellence for Road Safety to broaden new products, conduct studies, and promote safety projects.
- **Accident Blackspot Rectification:** Priority on identifying and enhancing accident-prone spots on National Highways through engineering measures.
- **Road Safety Audits:** Mandatory audits for all highway projects at layout, creation, and operation levels.
- **Brasilia Declaration:** India was one among the first 100+ countries to have signed the Brasilia Declaration in 2015 committing to achieve the Sustainable Development Goal 3.6 i.e., To half the number of world deaths and accidents from road visitors crashes by 2030.
- **Motor Vehicles Amendment Act, 2019:** The act delivered about higher consequences for visitors violations, along with speeding, inebriated using, and not wearing helmets or seat belts.

## Way Ahead

- Global satisfactory practices display that countries that adopted a Systems Approach have been capable of gaining their objectives of 50% discount in fatalities or are near accomplishing it.
- Countries like Australia and Sweden have long gone beyond the UN Sustainable Development Goals (SDG) 3.6 and dug deep into the issue. India can, therefore, examine these global best practices.
- India has carried out significant studies on road safety through premier institutions like Indian Institute of Technology (IITs) and Central Road Research Institute (CRRI).
- The corporate sector can play a position in supporting improved road safety through funding research, spreading awareness.

**Source:** [The Hindu](#)

## Mains PYQ

1. **National Urban Transport Policy emphasises on ‘moving people’ instead of ‘moving vehicles’. Discuss critically the success of the various strategies of the Government in this regard. (2014)**

- The Minister of Road Transport and Highways has noted that India is dropping 3% of its GDP due to around 5 lakh road accidents annually in the country.
- Medical treatment charges for accident victims stress healthcare resources.
- Infrastructure damage from accidents demands financial sources for maintenance.
- Loss of profits because of temporary or permanent disability of coincidence victims affects monetary productivity.
- Increased insurance and legal costs add to the financial burden on corporations and people.
- Road accidents lessen tourism and industrial transport performance, impacting the economy.
- Loss of life and productivity in younger and working-age populations (18-45 years) similarly affects GDP growth.

## [2.15] Parliament passes Disaster Management (Amendment) Bill 2024

### Syllabus - Disaster Management [GS Paper-3]

#### About The Disaster Management (Amendment) Bill 2024

- The Bill amends the Disaster Management Act, 2005.
- The DM Act establishes:
  - National Disaster Management Authority (NDMA),
  - State Disaster Management Authority (SDMA),
  - and the District Disaster Management Authority.
  - These authorities are answerable for disaster management at the national, state, and district level, respectively.

#### Key Highlights

- **Preparation of disaster management plans:** The Bill presents that NDMA and SDMA will prepare disaster management plans, which was in advance prepared through the National a State Executive Committee.
- **Functions of NDMA and SDMA:** The Bill adds those functions:
  - taking periodic stock of disaster risks, inclusive of emerging risks from extreme weather events,
  - supplying technical help to government under them,
  - recommending for minimum standards of comfort,
  - and preparing national and state disaster databases, respectively.
- The Bill also empowers NDMA to make guidelines under the Act with previous approval of the imperative government.
- **Disaster Database:** The Bill mandates the advent of a complete disaster database at both national and state levels.
- **Urban Disaster Management Authorities:** It empowers the state government to constitute a separate Urban Disaster Management Authority for state capitals and cities with a municipal worker.
- **Formation of State Disaster Response Force (SDRF):** The Bill empowers the country government to constitute a SDRF.
  - The state government will outline the capabilities of SDRF and prescribe the terms of provider for its individuals.

- **Statutory reputation to existing committees:** The Bill gives statutory status to present bodies which include the **National Crisis Management Committee (NCMC)** and the **High Level Committee (HLC)**.
  - The NCMC will feature as the nodal body for coping with important disasters with serious or national ramifications.
  - The HLC will offer financial help to state governments during disasters.
- **Appointments to NDMA:** It empowers NDMA to specify the wide variety and class of officials and personnel, with previous approval of the principal authorities.
  - NDMA may also hire professionals and specialists as important.

### Concerns Raised

- Several opposition members argued that the amendments may centralize power and undermine the autonomy of state governments.
- The Bill also offers more powers to a new authority, the Urban Disaster Management Authority, over the already current District Disaster Management Authority.

### Conclusion

- The amendments had been had to tackle the new types of disasters rising in the wake of global warming and climate change.
- According to the government, to deal with those issues in an efficient way, we ought to strengthen our institutions and hold them accountable.

**Source:** [The Indian Express](#)

### Mains PYQ

#### 1. *Discuss the recent measures initiated in disaster management by the Government of India departing from the earlier reactive approach. (2020)*

- **Preparation of disaster management plans:** The Bill presents that NDMA and SDMA will prepare disaster management plans, which was in advance prepared through the National a State Executive Committee.
- **Disaster Database:** The Bill mandates the advent of a complete disaster database at both national and state levels.
- **Urban Disaster Management Authorities:** It empowers the state government to constitute a separate Urban Disaster Management Authority for state capitals and cities with a municipal worker.
- **Formation of State Disaster Response Force (SDRF):** The Bill empowers the country government to constitute a SDRF.
- **Statutory reputation to existing committees:** The Bill gives statutory status to present bodies which include the **National Crisis Management Committee (NCMC)** and the **High Level Committee (HLC)**.
- **Appointments to NDMA:** It empowers NDMA to specify the wide variety and class of officials and personnel, with previous approval of the principal authorities.

## [2.16] Marginalisation of Parliament in India's Budgetary Affairs

### Syllabus: Governance [GS Paper-2]

#### Context

The national budget is more than a financial statement; it reflects a country's economic vision, governance philosophy, and policy priorities. In democratic systems, parliamentary control over public finance is crucial to ensuring fiscal discipline, transparency, and accountability. However, in India, the role of Parliament in shaping the budget is minimal, with an executive-driven process that sidelines legislators.

#### Budget as a Pillar of Democracy

- A nation's budget is its fiscal blueprint, outlining how the available resources shall be allocated and what the economic priorities shall be.
- Control by legislation of public finance has been a hallmark of democratic rule throughout history, preventing executive aggrandizement.
- Parliaments worldwide perform different roles in budget-making. Whereas some parliaments actively draft and modify proposals, others merely approve government submissions without much scrutiny.
- Greater involvement of parliament has been linked with greater coherence in the economy and better social outcomes.

#### Structural Weaknesses in India's Budgetary Process

##### Executive Monopoly Over Budget Formulation

- In India, the budget is drafted almost entirely within the Finance Ministry, with little reference to Parliament.
- Cabinet ministers and legislators remain largely uninvited until the very last moment.
- The secrecy here very much contrasts that of the U.S., Germany, and Sweden, which allow an active participation of their Legislatures in pre-budget discussions.

##### Limited Time for Debate and Review

- There is hardly any depth to the parliament's budgetary discussions and are very hardly their priority; usually, it is conducted in haste.
- The government presents budgets in early February and expects the approval of the budget by the end of March. With such a short time frame, in-depth analysis of financial allocation across sectors is limited.

##### Weak Role of Parliamentary Committees

- Departmentally Related Standing Committees (DRSCs) review demands for grants but their recommendations are non-binding.
- Unlike Canada or Australia, Indian parliamentary committees lack dedicated budget offices to provide independent economic research.

##### Marginal Role of Rajya Sabha

- Article 110 of the Indian Constitution classifies the budget as a Money Bill. Consequently, the Rajya Sabha can only discuss it but cannot amend or reject it.

##### No Power to Modify the Budget

- MPs can raise objections but cannot directly alter expenditure or taxation proposals.
- Opposition parties often struggle to push amendments due to ruling party majorities.

## Required Reforms to Address Structural Weaknesses

### Institutionalising Pre-Budget Discussions

- These pre-budget discussions during the monsoon session would unmask the members of the legislature from assessing financial health and, further, defining priorities.
- It brings a constructive debate space, empowering intelligent decision making and fair resource appropriation.

### Establishing a Parliamentary Budget Office (PBO)

- India does not have a structural mechanism for independent budgetary analysis. A PBO modeled on the United States Congressional Budget Office would help fill that void.
- A well-structured PBO will provide parliamentarians with evidence-based analysis, expert forecasts, and policy briefs.

### Reclaiming Parliamentary Authority in Budget-Making

The current budgetary process diminishes Parliament's role, undermining democratic principles. By integrating pre-budget discussions and establishing a PBO:

1. Parliament can transition from being a passive approver to an active participant in economic policymaking.
2. These reforms would ensure collective deliberation rather than executive fiat, leading to equitable policies and greater public trust.

### Conclusion

A truly democratic budgetary process demands active legislative participation and oversight. The marginalisation of Parliament in India's budgetary affairs requires urgent reforms such as pre-budget discussions and a PBO. These steps would restore balance and accountability, reinforcing Parliament's role as the guardian of India's economic integrity.

Source: [The Hindu](#)

### UPSC Mains Practice Question

**Q. Critically examine the role of the Indian Parliament in budgetary affairs. Do you think the increasing dominance of the executive has undermined parliamentary oversight in fiscal matters? Suggest measures to strengthen parliamentary control over the budgetary process. (250 words)**

## [2.17] Water Conservation in Jharkhand

### Syllabus: Conservation [GS Paper-3]

#### Context

Water conservation initiatives in Jharkhand have played a pivotal role in reversing the fortunes of several villages, particularly in addressing water scarcity and improving agricultural productivity. Among these success stories, the villages like Jitkundi, Guni, and Bedo stand out as shining examples of sustainable development and self-reliance.



## The Challenges Faced by Jharkhand Villages

Jharkhand has long struggled with water scarcity due to deforestation, overgrazing, and inadequate irrigation infrastructure. The state's agriculture, which is heavily rain-dependent, often suffered from droughts, leading to poor crop yields and migration for survival. Villages like Jitkundi and Guni were particularly affected, with wells drying up by March and limited access to irrigation facilities.

## Key Water Conservation Projects

### 1. Jitkundi Village: A Reservoir of Hope

- It is during 2023 that under NITI Aayog's Rejuvenation Window-II Program at Jitkundi, a reservoir was constructed using GIS planning for soil and water conservation.
- Further interventions like Trench Cum Bunds (TCBs) and soak pits reduced the rainwater runoff to an extent to recharge groundwater.
- Thus, the reservoir assured water throughout the year, particularly in summer when the water level did not go down to six feet.

### 2. Guni Village: National Recognition

- The village initiated the construction of trench cum bends over 400 acres under the 'Deen Dayaal Upadhyaya Swawalamban Yojana' (DDUSY).
- These interventions brought up the water table to such levels that farmers can grow three crops a year.
- The village was awarded the National Water Award for the Best Village Panchayat (East Zone). The award is a good testimony to its water conservation activities.

### 3. Bedo Block: The Legacy of Simon Oraon

- The "Waterman of Jharkhand", Padma Shri Simon Oraon, established his first check dams, tree plantations and pond constructions way back in 1961.
- With his hard work, these actions transformed wastelands into cultivable fields where farmers managed to plant more than one crop every year.
- Today, Bedo exports more than 20,000 metric tons of vegetables to neighboring states.

## Impact on Agriculture and Livelihoods

### 1. Increased Agricultural Productivity

- In Jitkundi, paddy yields increased from 30 kg to 75 kg per harvest after the reservoir was built. Farmers also reported better grain quality due to consistent water availability.
- Guni farmers transitioned from subsistence farming to cultivating cash crops like onions and mustard. Their incomes increased fivefold due to improved irrigation systems.

### 2. Self-Reliance and Community Development

- Villages like Guni became self-reliant in water needs and adopted community farming practices to boost collective productivity.
- Initiatives also promoted cleanliness drives, eliminated open defecation, and banned harmful practices like liquor consumption.

## Role of Government Schemes and Community Participation

Key factors that contributed to the success of these projects are as follows:

- **Government Support:** Programs such as MGNREGA financed infrastructure buildup, while DDUSY provided technical guidance.
- **Community Participation:** Villagers build reservoirs, trenches, and bunds, while also forming producer groups for efficient resource management.

## Lessons for Sustainable Development

Jharkhand's villages demonstrate that:

- 1. Integrated Approaches Work:** The ancient and modern methods of water conservation go hand in hand with modern tools like GIS.
- 2. Mobilizing the Community:** The active involvement of the villagers creates ownership, strengthens sustainable development, and ensures sustainability.
- 3. Collaboration Between Government and NGOs:** When local government collaborates with NGOs, conservation efforts gain that much more strength.

## Conclusion

The transformation of Jharkhand's villages through water conservation underscores the importance of sustainable practices in rural development. These initiatives not only address water scarcity but also empower communities economically and socially. By replicating such models across India, other regions can achieve similar success in combating climate challenges and ensuring agricultural resilience.

Source: [The Indian Express](#)

## UPSC Mains Practice Question

**Q. Water conservation is crucial for sustainable development, particularly in water-stressed regions like Jharkhand. Discuss the role of community-led initiatives in water conservation with suitable examples. Also, suggest measures to enhance water security in rural India. (250 words)**

## [2.18] Progress on GM Food Crops in India

### Syllabus: Science and Technology [GS Paper-3]

#### Context

India's journey with genetically modified (GM) crops has been marked by significant developments, debates, and controversies. The government's recent push for GM mustard and the Supreme Court's upcoming hearing on its commercial cultivation have reignited discussions about the future of GM food crops in the country.

#### Background: GM Crops in India

- Introduction of GM Technology:** India adopted GM technology in 2002 with the approval of Bt cotton, which remains the only commercially cultivated GM crop in the country. Bt cotton now accounts for 95% of India's cotton production, showcasing the success of GM technology in non-food crops.
- Current Status:** While Bt cotton thrives, no GM food crops have been approved for commercial cultivation. However, biosafety clearances have been granted for GM mustard and eggplant (brinjal), though their release remains stalled due to legal and public opposition.

## Challenges Facing GM Food Crops

- **Regulatory Hurdles:**
  - India's regulatory framework for GM crops has faced criticism for lack of coordination among ministries and departments.
  - The Supreme Court has frequently intervened to address concerns over biosafety and environmental risks.
- **Environmental Concerns:**
  - Critics argue that herbicide-tolerant crops like GM mustard could lead to increased use of herbicides such as glyphosate, potentially harming soil health and biodiversity.
  - Risks of cross-pollination with non-GM varieties threaten crop diversity.
- **Public Opposition:**
  - A significant portion of India's population is vegetarian, leading to skepticism about genetically engineered food products.
  - Concerns over food safety and long-term health effects remain widespread.
- **Economic Implications:**
  - Small-scale farmers fear dependence on multinational seed companies for patented GM seeds.
  - The cost of inputs like herbicides could negate potential economic benefits for marginal farmers.

## Global Perspective on GM Crops

- Globally, GM crops such as maize, soybean, and canola are widely cultivated for traits like pest resistance and herbicide tolerance.
- Countries like the U.S., Brazil, and Argentina have embraced GM technology to boost agricultural productivity.
- India's cautious approach contrasts with these nations but aligns with concerns raised by environmentalists and public health advocates worldwide.

## Key Arguments in Favor of GM Food Crops

- **Food Security:**
  - With a growing population, India faces increasing pressure to ensure food security. GM crops can enhance yields and nutritional content to meet rising demand.
  - They offer resilience against climate change by tolerating droughts, pests, and diseases.
- **Economic Benefits:**
  - Higher yields can improve farmers' incomes.
  - Reduced dependency on imports can save foreign exchange reserves.
- **Scientific Advancements:**
  - India's research capabilities in biotechnology have grown significantly. Commercializing GM crops can position the country as a global leader in agricultural innovation.

## Concerns Raised by Critics

- **Health:** Fear also stems from long-term insufficient studies on the safety of GM food or health hazards on GM crop consumption.
- **Monoculture Farming:** The generic GM variety may bring about monoculture farming within which the type of crops whose planted are more prone to pest or disease attack.
- **Ethics:** Introducing foreign genes into plants is seen by critics as being unethical because the plants are tampering with nature by altering their identities.

## Way Forward

- **Strengthening Regulatory Frameworks:** To achieve biosafety while innovating in agricultural biotechnology, a well-structured regulatory system is warranted.
- **Public Awareness Campaign:** Consumer and farmer education on the advantages and safety of GM crops would be better to dispel myths and gain consumer confidence in the technology.
- **Encouraging Research and Development:** Continued funding of research will alleviate concerns regarding biosafety and improve crop performance.
- **Balancing Innovation with Sustainability:** Advances in biotechnology must not compromise environmental sustainability or farmer welfare.

Source: [The Hindu](#)

## UPSC Prelims Practice Question

Q. Consider the following statements regarding Genetically Modified (GM) Food Crops in India:

1. Bt Cotton is the only genetically modified crop approved for commercial cultivation in India.
2. The Genetic Engineering Appraisal Committee (GEAC) is responsible for regulating the approval of GM crops in India.
3. Golden Rice, a GM variety of rice rich in Vitamin A, has been approved for commercial cultivation in India.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

Ans- A

## [2.19] Revised Criteria for MSME Classification

### Syllabus: Economy [GS Paper-3]

#### Context

The Government of India has notified new criteria for classifying Micro, Small, and Medium Enterprises (MSMEs), effective from April 1, 2025. This revision, announced in the Union Budget 2025-26, significantly increases the investment and turnover thresholds for MSMEs. These changes aim to foster growth, enhance competitiveness, and provide better access to government benefits for businesses in this sector.

#### Key Changes in MSME Classification

##### Revised Investment and Turnover Limits

The revised criteria increase the investment and turnover limits across all MSME categories:

- **Micro Enterprises:**
  - Investment limit raised from ₹1 crore to ₹2.5 crore.
  - Turnover limit increased from ₹5 crore to ₹10 crore.

- **Small Enterprises:**
  - Investment limit increased from ₹10 crore to ₹25 crore.
  - Turnover limit raised from ₹50 crore to ₹100 crore.
- **Medium Enterprises:**
  - Investment limit enhanced from ₹50 crore to ₹125 crore.
  - Turnover limit doubled from ₹250 crore to ₹500 crore.

### Unified Classification

Unified Classification-All types of MSMEs operate for consideration for manufacturing or rendering services. The enterprises are classified together under a single umbrella based upon parameters of investment and turnover.

### Objectives of the Revision

- **Encouraging Growth Without Losing Benefits:** The revised limits allow businesses to expand without fear of losing their MSME status, addressing a long-standing concern in the sector.
- **Creating More Jobs and Technology Innovation:** Through expansion of enterprises, the government aims to generate more employment opportunities and technological innovation.
- **More Access to Finance:** It is expected that these changes will provide easier access to credit via government schemes, such as credit guarantees, extended under the newly defined classification.

### Impact on the MSME Sector

#### Economic Contribution

MSMEs play a critical role in India's economy:

- Account for 45% of exports.
- Employ over 25 crore people.
- Contribute significantly to manufacturing output.

The revised classification is expected to further strengthen their role by integrating more businesses into global supply chains and boosting competitiveness.

#### Benefits for Enterprises

- Easier access to government incentives such as subsidies, tax benefits, and reserved procurement opportunities.
- Enhanced credit guarantees, with coverage increased from ₹5 crore to ₹10 crore for micro and small enterprises.

### Challenges

Despite its benefits, the revision has raised concerns:

- Smaller enterprises tend to have a fear that larger players within the MSME category will gulp the most of the benefits.
- Most micro-enterprises claim that increased threshold limits do not correspond with actual growth potential. Increased raw material costs inflate turnover figures without such business expansion.

### Government Initiatives to Support MSMEs

- **MSME Credit Support:** An amendment has been made to provide additional grants under Credit Guarantee Schemes along with an estimated credit flow of ₹1.5 lakh crore over five years.
- **Digital Transformation:** IMAP includes training and special assistance for MSMEs to go digital in not only activity but also growth.
- **Awareness campaigns:** Certain initiatives in place also educate the small businesses about benefits available to them from the revised classification.

### Conclusion

The revised criteria for classifying MSMEs mark a significant step towards fostering economic growth and inclusivity. By expanding investment and turnover thresholds, the government has created a more flexible framework that encourages enterprises to scale up while retaining access to essential benefits. However, addressing challenges like equitable distribution of benefits and improving credit access for smaller units will be crucial. A collaborative approach involving industry stakeholders, financial institutions, and policymakers is essential for building a resilient MSME ecosystem that supports both short-term growth and long-term sustainability.

Source: [AIR](#)

### UPSC Prelims Practice Question

**Q. With reference to Micro, Small, and Medium Enterprises (MSMEs) in India, consider the following statements:**

1. The classification of MSMEs in India is based on investment in plant & machinery and turnover.
2. MSMEs contribute significantly to India's GDP and employment generation.
3. The Ministry of Finance is the nodal ministry for MSME policy formulation in India.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

Answer: (a) 1 and 2 only

## [2.20] Coal Production Hits 1 Billion Tonnes in 2024-25

### Syllabus: Economy [GS Paper-3]

#### Context

India has achieved a historic milestone in its energy sector, surpassing the 1 billion tonnes (bt) mark in coal production for the financial year 2024-25. The total coal output reached 1.03 bt, reflecting a 5.24% increase from the 953.3 million tonnes produced in FY 2023-24. This achievement underscores India's growing focus on energy security and self-reliance.

## Key Drivers of Growth

- **Coal India Limited (CIL) Contribution:** Coal India Limited (CIL), the largest public-sector company producing coal, contributed greatly to the achievement of this milestone. While production in CIL increased by 1.3% on a very large base, it was responsible for a large part in the increase in the overall output. For FY 2024-25, CIL produced around 838 million tonnes of coal, in line with its revised target of 850 million tonnes after considering the high stock levels at thermal power plants.
- **Private Sector Initiatives:** Private captive and commercial coal mines' production increased by an impressive 29% year-on-year. This increase demonstrates the success of the government's intent in encouraging the private sector for coal mining.
- **Government Initiatives:** Various governmental initiatives, like ramping up rake deployment for coal transportation and commissioning coal handling plants (CHPs) with silos, have enabled smooth coal evacuation processes. During FY 2024-25, 20 first-mile connectivity projects were launched, enhancing the logistics efficiency of coal transportation.
- **Resilience Amid Challenges:** The coal sector of India has displayed resilience despite subservient climatic conditions obstructing the mining operations. The Ministry of Coal put forth that these achievements are a testimony to the sector's commitment toward fulfilling the growing energy demands of the nation.

## Significance of the Milestone

- **Energy Security:** The crossing of the 1 bt mark is a very important stride associated with India's energy security. With domestic demand for coal likely to increase to around 1,192-1,325 million tonnes by 2030, this milestone contributes to reduced dependency on imports and thus, energy independence for India.
- **Economic Significance:** Increased production of coal thus supports the major industries-the power generation and steel manufacturing-from time to time. For example, coking coal production rose from 60.76 million tonnes in FY23 to 66.63 million tonnes in FY24, leading to decreased dependency on imports for steel production.
- **Environmental Considerations:** Coal may still dominate India's energy mix, but initiatives are underway to minimize its environmental effects. The government is promoting the adoption of cleaner technologies, such as washeries, as well as working toward alternatives such as renewable energy to complement coal generation.

## Future Outlook

- **Production Targets:** The government is confident of achieving an even higher target of 1.08 billion tonnes in FY25-26. This includes plans to open three new coking coal mines in Jharkhand with capacities ranging from 5 to 6.5 million tonnes each.
- **Demand Trends:** India's aggregate coal demand is projected to grow by 3.1% annually, reaching approximately 1,371 million tonnes by 2025. This demand will be driven by industrial applications and the commissioning of new coal-fired power plants with a capacity of 14 GW in FY24.
- **Policy Reforms:** The government is focusing on reducing coking coal imports through initiatives like auctioning high-grade coal exclusively for the steel sector and adopting advanced technologies for steelmaking.

## Conclusion

India's achievement of crossing the 1 billion tonnes milestone in coal production marks a significant leap toward energy self-sufficiency and economic growth. While challenges such as environmental concerns persist, this accomplishment underscores the resilience and potential of India's energy sector. With continued policy support and technological advancements, India is well-positioned to meet its future energy demands sustainably and efficiently.

Source: [BS](#)

### UPSC Prelims Practice Question

Q. Consider the following statements regarding coal production in India:

1. India is the second-largest producer of coal in the world.
2. The majority of India's coal reserves are found in the northeastern states.
3. Coal India Limited (CIL) is the largest coal-producing company in India.

Which of the statements given above is/are correct?

- A) 1 and 2 only  
B) 1 and 3 only  
C) 2 and 3 only  
D) 1, 2, and 3

Answer: B) 1 and 3 only

## [2.21] US Targets India for Key Agricultural Exports

Syllabus: International Relation [GS Paper-2], Economy & Agriculture [GS Paper-3]

### Context

The US seeks to boost agricultural exports to India, focusing on cotton, corn, and soybean amid trade tensions, pushing for market access while warning of reciprocal tariffs.

### US Agricultural Exports: A Global Perspective

The United States has made huge strides in its efforts to export cotton, corn, and soybeans. However, the combined value of the exports hit an all-time high in 2022 at \$62 billion. While the markets have all enjoyed patronage from traditional importers, namely China, in the last couple of years, they have reduced imports as a means of facing off geopolitical tensions and by competition from aggressive suppliers such as Brazil and Argentina. For example:

- From the close of 2022 to just before the final quarter of 2024, US soybean exports to China collapsed from \$17.9 billion to \$12.8 billion.
- So did corn exports to China; they fell from \$5.2 billion in 2022 to just \$328 million in 2024.

There is fresh impetus for the exploration of new markets, and India has become an attractive country to consider given its economic growth and corresponding expansion in demand for agricultural produce.

### India: A Potential Market for US Crops

India's growing population, rising incomes, and changing dietary patterns are driving an increase in the consumption of animal products like milk, eggs, fish, and meat. This trend is expected to boost the demand for animal feed ingredients such as corn and soybean meal. According to a USDA report:

- India's domestic corn consumption is projected to rise from 34.7 million tonnes (MT) in 2022-23 to 98 MT by 2040 under rapid income growth scenarios.
- Soybean meal consumption could grow from 6.2 MT in 2022-23 to as much as 68.3 MT by 2050.



To meet this demand, India may need substantial imports of these crops in the coming decades. This presents a significant opportunity for US exporters.

## Key Crops of Interest

### 1. Cotton

- The USA is one of the major exporters of raw cotton while India is another emerging market where its textile industry becomes huge for the incoming cotton.
- In the recent past, US cotton exports to India were worth \$491.2 million in 2022, though they continued to slide slightly, following an increment in import duties (11%). Duty-free imports could boost India's textile export and certainly provide a ready market for US cotton.

### 2. Corn

- Corn, most of all, has become the most important ingredient for livestock feeding systems in India, a sector growing tremendously in the last two decades.
- Although domestic production has been growing steadily, it is anticipated that demand for feeds is likely to outstrip their supply capacity by the early 2030s. The current tariffs which amount to about 50 percent prohibiting genotech crop imports will be what limits US corn to India. These would indeed lead to a significant potential in trade.

### 3. Soybean

- Soybean meal is primarily necessary for nutrition in poultry and livestock feeding. This demand is expected to increase along with the fast growth of India's middle class along with increased protein consumption.
- It is known that the US is one of the largest soybean producers in the world, but imports into India are burdened with counter profit by a steep import duty of 45% and bans against GM products. Lowering such tariffs opens up a great business opportunity for the US, making it a key supplier of soybean meal in the animal feed industry in India.

## Barriers to Trade

Despite its potential as a market, India imposes high tariffs and non-tariff barriers on agricultural imports:

- Soybean imports face a 45% duty; corn imports are taxed at 50%.
- Restrictions on GM crops effectively block US exports of corn and soybeans. These measures have limited India's reliance on imports, with total feed commodity imports amounting to just 178,969 tonnes in 2022.

## Opportunities for Collaboration

The US sees strategic opportunities in engaging with India:

- 1. Making Farming in India More Modern:** Efforts together could bear on the supply chain, cold storage, and sustainable agricultural practices.
- 2. Tariff Reduction:** Negotiations may focus on reducing or eliminating duties on certain crops such as cotton, corn, and soybeans.
- 3. Increasing Export of Objective Goods:** Duty-free access for raw cotton could allow India to compete better in textiles, while at the same time raising volumes of U.S. exports.

## Conclusion

The US's focus on expanding agricultural exports aligns with India's growing demand for feed ingredients and raw materials like cotton. However, realizing this potential will require addressing trade barriers such as high tariffs and GM crop restrictions. Strengthened agricultural cooperation between the two nations could create mutually beneficial opportunities while reshaping global trade dynamics in farm produce.

**Source:** [The Indian Express](#)

### UPSC Mains Practice Question

**Q. Discuss the significance of the US targeting India for key agricultural exports like cotton, corn, and soybean. Analyze the impact of this trade strategy on India's agricultural sector and bilateral trade relations. (250 words)**

## [2.22] Need for Decentralised Urban Planning

### Syllabus: Governance [GS Paper-2]

#### Context

India is experiencing rapid urbanisation and is poised to have the world's largest urban population. However, urban planning remains highly centralised, limiting local autonomy. A uniform, one-size-fits-all approach does not cater to the country's diverse urban landscape. To ensure effective governance and development, decentralisation is essential, enabling cities to receive need-based solutions rather than top-down directives.

#### India's Urbanisation and the Role of the Centre

- Since the 1990s, economic liberalisation has led to increased urban migration and infrastructure growth.
- However, urban planning continues to be controlled by the Centre, primarily through centrally sponsored schemes (CSS).
- Past initiatives such as JNNURM, Indira Awas Yojana, and Rajiv Awas Yojana, along with current schemes like PMAY, AMRUT, Swachh Bharat Mission, and the Smart Cities Mission, have played a key role in shaping urbanisation.
- Despite their benefits, these schemes impose rigid models that often overlook local requirements.
- Similarly, centrally planned mobility infrastructure, such as metro projects, receives nearly 30% of the Union budget, restricting cities from adopting flexible, locally driven transport solutions.

#### Challenges of Financial Centralisation

- The Centre views cities as economic growth hubs, justifying financial control over urban areas. Infrastructure investment is seen as a crucial factor in achieving the \$5 trillion economy goal.
- However, financial centralisation comes with significant challenges. The 15th Finance Commission has imposed conditions, such as linking property tax hikes to state GDP, limiting the autonomy of urban local bodies.
- Instead of providing flexible grants, the Centre dictates how funds should be used, forcing cities to adhere to central guidelines rather than addressing their own priorities.
- Moreover, states often mirror the Centre's approach by replicating national schemes without considering regional needs, leading to inefficient fund utilisation and misallocation.

### **The Need for Decentralisation**

- India's urbanisation patterns vary significantly across regions. For instance, Kerala follows a rural-urban continuum, with its Chief Minister referring to the entire state as a “single city,” while Gujarat's urbanisation is driven by industry and economic segregation.
- Migration trends in northern and southern states are also reshaping urban demographics.
- Additionally, cities have sector-specific needs; some require better housing, while others struggle with sanitation and waste management.
- However, centrally implemented schemes like PMAY and SBM fail to address these variations.
- The Smart Cities Mission, for example, has suffered from underutilisation of funds and rushed project execution due to the pressure of submitting Utilisation Certificates (UCs). Many projects lacked demand from local citizens, leading to inefficient resource allocation.

### **A Localised Fiscal Model: The Way Forward**

- To address these challenges, a reformed fiscal model is needed.
- It is proposed that 70% of the Union Budget should be directly transferred to states and urban local bodies, with only 30% retained at the central level for national priorities like climate resilience.
- Direct financial transfers should be based on local needs in key sectors such as mobility, sanitation, housing, water supply, and waste management.
- This will empower local governments to set their own development priorities with support from the states.
- Furthermore, knowledge-based urban planning should be encouraged by strengthening State Finance Commissions and urban research institutions.
- The Centre's role should be limited to providing guidance and support rather than micromanaging city development.

### **Broader Implications of Decentralisation**

- Strengthening local governance will enhance the role of city governments as the direct link between people and the state.
- This, in turn, will improve tax compliance, conflict resolution, and service delivery.
- Decentralised planning will also help prevent infrastructure collapse, as unplanned urban expansion has led to congestion, strained public utilities, and a declining quality of life.
- More importantly, decentralisation aligns with India's democratic ethos by ensuring that governance is context-sensitive and reflective of local aspirations.

### **Conclusion: Moving Towards Localised Urban Development**

India's urban future depends on shifting from centralised decision-making to a more flexible, devolved approach. Local urban bodies require greater financial and administrative autonomy to drive development that suits their specific needs. A fiscal realignment, with 70% of funds transferred directly to states and local governments, is necessary to achieve this goal. Empowering cities to plan and execute their own development strategies will ensure sustainable urbanisation, fostering growth that is inclusive and responsive to local realities.

**Source:** [The Hindu](#)

## UPSC Mains Practice Question

**Q. India's urban development has been largely driven by centrally sponsored schemes, often leading to a rigid, uniform approach. Discuss the need for decentralisation in urban planning and suggest measures to enhance local autonomy.**

## [2.23] DNA Fingerprinting in Identification and Justice

### Syllabus: Science and Technology [GS Paper-3]

#### Context

DNA fingerprinting, also known as genetic fingerprinting, DNA profiling, or DNA typing, is a revolutionary technique in molecular biology that identifies individuals based on their unique genetic makeup. It has transformed fields such as forensic science, medical research, and evolutionary biology.

#### What is DNA Fingerprinting?

- DNA fingerprinting is a process whereby particular loci of DNA are analysed in order to compare and study individuals against each other, as those loci generally show high variability amongst individuals. These loci are generally called minisatellites or Variable Number Tandem Repeats (VNTRs). These are basically the pieces of non-coding sequences of the DNA-string, and highly variable between any two individuals. The specificity of these sequences makes one different from another.
- The technique was developed by Sir Alec Jeffreys in 1984, who realized that some DNA sequences are much more variable among individuals than others and could thus be used for identification purposes.

#### The Science Behind DNA Fingerprinting

- DNA fingerprinting is a method of analyzing select loci in DNA for comparison and study of individuals against one another, as these loci tend to have a high variation among individuals. These loci are often known as minisatellites or Variable Number Tandem Repeats (VNTRs). They are actually pieces of non-coding sequences of the DNA-string, and highly variable between any two individuals. The specificity of these sequences makes one different from another.
- The technique was invented by Sir Alec Jeffreys in 1984, who found that some DNA sequences might vary so much between individuals that they could be beneficial for identification purposes.

#### Steps Involved in DNA Fingerprinting

The process of creating a DNA fingerprint involves several precise steps:

- 1. DNA Extraction:** A sample containing cells (e.g., blood, saliva, hair follicles) is collected, and the DNA is isolated from other cellular components.
- 2. DNA Amplification:** Using Polymerase Chain Reaction (PCR), specific regions of the extracted DNA are amplified to make them easier to study.
- 3. Digestion with restriction enzymes:** Enzymes cut the DNA into fragments at specific sequences. These fragments vary in size depending on the individual's genetic makeup.
- 4. Gel Electrophoresis:** The fragments are separated by size using an electric current applied to a gel medium. Smaller fragments move faster than larger ones.

5. **Blotting and Hybridization:** The separated fragments are transferred to a nylon membrane and hybridized with radioactive or fluorescent probes that bind to VNTR sequences.
6. **Visualization:** The hybridized fragments are visualized using X-ray film or laser scanning, producing a barcode-like pattern unique to each individual.

### Applications of DNA Fingerprinting

DNA fingerprinting has diverse applications across various fields:

#### 1. Forensic Science

- Identifying suspects by matching their DNA with evidence from crime scenes.
- Exonerating wrongly accused individuals by proving their non-involvement.
- Identifying victims from remains in disasters or accidents.

#### 2. Paternity and Ancestry Testing

- Establishing biological relationships between parents and children.
- Tracing ancestry and lineage for genealogical studies.

#### 3. Medical Research

- Detecting hereditary diseases and genetic disorders.
- Matching organ donors with recipients for transplants.
- Studying genetic variations linked to diseases like cancer.

#### 4. Evolutionary Biology

- Analyzing genetic diversity within populations.
- Tracing evolutionary changes and migration patterns over time.

### Advantages of DNA Fingerprinting

- **Accuracy:** The technique is highly reliable due to the uniqueness of individual DNA profiles.
- **Non-invasive Sampling:** Samples can be obtained from hair, saliva, or sweat without invasive procedures.
- **Wide Applicability:** Useful in legal cases, medical diagnostics, and research.

### Limitations and Ethical Considerations

While DNA fingerprinting offers numerous benefits, it also raises ethical concerns:

- **Privacy Issues:** Storing genetic data in databases may lead to misuse or unauthorized access.
- **Cost:** Advanced equipment and expertise make it an expensive procedure.
- **Legal Challenges:** Interpreting results in court requires careful consideration of other evidence.

### Conclusion

DNA fingerprinting is a groundbreaking tool that has reshaped multiple disciplines by providing unparalleled accuracy in identifying individuals and analyzing genetic information. From solving crimes to advancing medical science, its applications are vast and transformative. However, its usage must be accompanied by ethical safeguards to protect individual privacy and ensure responsible application in society.

Source: [The Hindu](#)

## UPSC Prelims Practice Question

Q. Consider the following statements regarding DNA fingerprinting:

1. DNA fingerprinting is based on the analysis of coding sequences of DNA.
2. The technique was developed by Sir Alec Jeffreys in 1984.
3. DNA fingerprinting is used only in forensic investigations.

Which of the statements given above is/are correct?

- A) 1 and 2 only
- B) 2 only
- C) 2 and 3 only
- D) 1, 2, and 3

Answer: B) 2 only

## [2.24] India stresses the need for UNSC reform

### Syllabus - International Organization [GS Paper-2]

#### Context

India stresses the need for UNSC reform to attain lasting peace in conflict conditions.

#### Key Highlights

- **Security of Peacekeepers:** Peacekeepers are dealing with non-state actors, armed groups, terrorists, and complex threats.
- **Modernisation:** Advocates for integrating superior surveillance, conversation, and data analytics into peacekeeping operations.
- **Funding:** Stresses the need for competently funded and resourced peacekeeping missions, with assets matching the mandates.
- **Inclusion in Mandate Formation:** Demands the inclusion of troop-contributing countries in the mandate method procedure to adapt operations to new realities.

#### About the UNSC

- The **United Nations Security Council (UNSC)** is one of the primary organs of the United Nations, liable for keeping global peace and security.
- It was established in 1945 as part of the UN Charter and consists of 15 member states, including 5 permanent members with veto power—China, France, Russia, the United Kingdom, and USA—and ten non-permanent members elected for two-year terms by the General Assembly.
- It is centered in New York City.

#### Need for the Reforms in the UNSC

- **Current Composition:** The current composition of the Security Council has under-illustration and un-representation of key regions.
- **Inability to Address Conflicts:** The current composition of the Council has validated considerable boundaries in efficiently addressing primary global conflicts. This has undermined its credibility and hindered its core mandate of upholding global peace and security.

- **Changes in World Order:** The global has gone through significant changes since 1945 and the new realities need to be pondered in the permanent membership.
- **Veto Power:** Currently, only the 5 permanent members keep veto powers and through its use have stalled movement in the Council to deal with international challenges and conflicts including in Ukraine and Gaza.
- **Legitimacy:** The disproportionate power held by the five permanent members, mainly their veto power result in a belief of unfairness and shortage of legitimacy.

### Why Should India Get Permanent Membership of UNSC?

- **Global Population and Representation:** India is one of the world's most populous countries, accounting for about 18% of the global population.
- **Economic Powerhouse:** India has emerged as a major international economic power, rating many of the top economies by GDP (nominal) and GDP (PPP).
- **Commitment to Peacekeeping:** India has been one in every of the biggest members to [UN peacekeeping missions](#), demonstrating its dedication to international peace and security.
- **Strategic Importance:** India occupies a pivotal geopolitical position in South Asia and the broader Indo-Pacific location.
- **Democratic Values:** As the world's biggest democracy, India upholds concepts of pluralism, tolerance, and inclusivity, that are fundamental to the UN's ethos.
- **Support from Member States:** India enjoys extensive guidance from a large variety of UN member states, such as influential countries from various areas.

### Limitations in Introducing the Reforms in UNSC

- **Veto Power of Permanent Members:** Any reforms to the composition or working methods of the USA require the approval of the 5 permanent members.
- **Regional Dynamics:** Regional rivalries and geopolitical tensions complicate efforts to reform the Council.
- **Complexity of the Reform Process:** Amending the UN Charter to enact reforms requires a long and complicated process concerning ratification by a significant variety of member states, making it difficult to enact great reforms.
- **Chinese Opposition:** China being a permanent member blocks the growth of India becoming a Permanent Member.

### Way Ahead

- It is important that both the permanent and non-permanent membership be representative of the world as it is these days, not the world because it existed in the wake of the Second World War.
- Reforms within the UNSC are critical for preserving its relevance, legitimacy, and effectiveness in addressing the complicated security challenges dealing with the global community within the 21st century.
- However, attaining consensus on such reforms by some of the UN's member states remains a tough and ongoing manner.

**Source:** *The Indian Express*

### Mains PYQ

1. *Discuss the impediments India is facing in its pursuit of a permanent seat in the UN Security Council (2015)*

- India stresses the need for UNSC reform to attain lasting peace in conflict conditions.
- **Security of Peacekeepers:** Peacekeepers are dealing with non-state actors, armed groups, terrorists, and complex threats.
- **Modernisation:** Advocates for integrating superior surveillance, conversation, and data analytics into peacekeeping operations.
- **Funding:** Stresses the need for competently funded and resourced peacekeeping missions, with assets matching the mandates.
- **Inclusion in Mandate Formation:** Demands the inclusion of troop-contributing countries in the mandate method procedure to adapt operations to new realities.

## [\[2.25\] PAC Recommendations on simplified GST Regime](#)

### Syllabus - Economy [GS Paper-3]

#### Context

The Public Accounts Committee (PAC) has advocated a simplified Goods and Services Tax (GST) regime in its 19th report.

#### Key Highlights

- The Public Accounts Committee (PAC) urged the Finance Ministry to check the contemporary framework to do away with useless complexities and ease compliance.
- The Committee expressed concerns about issues in the biometric-based Aadhaar authentication method, potentially hindering the “One Nation One Tax” imaginative and prescient.

#### Goods and Services Tax (GST)

- The concept of Goods and Services Tax (GST) in India was first proposed during Atal Bihari Vajpayee’s tenure.
- In December 2014, the Constitution (122nd Amendment) Bill was delivered, surpassed in 2015, and ratified in 2016 as the 101st Constitutional Amendment, paving the way for GST.
- GST was officially launched on 1st July 2017 by Prime Minister Narendra Modi, marking a big step in India’s tax reform.
- It is a destination-based consumption tax levied in all stages, from manufacture to final consumption, with credit for taxes paid at preceding stages.
- The tax burden is in the long run borne through the final consumer, and the revenue is allocated to the authority governing the place of consumption (region of supply).

#### Objectives

- GST aims to simplify India’s indirect tax device by combining multiple Central and State taxes into one, lowering the cascading effect and growing a unified country wide marketplace.
- It stimulates economic boom, broadens the tax base, increases trade volumes, and improves tax compliance.



## Challenges

- The implementation of GST has confronted challenges, along with complex compliance necessities and excessive expenses for small agencies.
- Frequent changes in tax rates and multiple tax slabs have precipitated confusion.
- Issues with refund procedures create liquidity issues, and cross-border trade is complicated by various GST costs across states.

## Other Recommendations

- Streamlining the process by consolidating bureaucracy, lowering filing frequency, and introducing a tiered compliance method for smaller companies.
- Improving the portal's ease of use and providing clearer steerage for taxpayers all through filing.
- Addressing the issue of harsh criminal consequences for accidental mistakes in compliance, especially for honest taxpayers.
- Using records analytics and AI gear to accurately project GST sales, addressing the decline in indirect tax proportion.
- Implementing a greater efficient refund system with clear timelines, ordinary updates, and a devoted complaint redressal mechanism.
- Simplifying GST compliance for MSMEs by automating return submitting and refund processing with low frequency and simpler online reporting.

**Source:** [The Hindu](#)

## Mains PYQ

**1. What is/are the most likely advantages of implementing 'Goods and Services Tax (GST)'? (2017)**

- 1. It will replace multiple taxes collected by multiple authorities and will thus create a single market in India.**
- 2. It will drastically reduce the 'Current Account Deficit' of India and will enable it to increase its foreign exchange reserves.**
- 3. It will enormously increase the growth and size of the economy of India and will enable it to overtake China in the near future.**

**Select the correct answer using the code given below:**

- (a) 1 only**
- (b) 2 and 3 only**
- (c) 1 and 3 only**
- (d) 1, 2 and 3**

**Ans: (a)**

- The Public Accounts Committee (PAC) has advocated a simplified Goods and Services Tax (GST) regime in its 19th report.
- The Public Accounts Committee (PAC) urged the Finance Ministry to check the contemporary framework to do away with useless complexities and ease compliance.
- The Committee expressed concerns about issues in the biometric-based Aadhaar authentication method, potentially hindering the "One Nation One Tax" imaginative and prescient.

## [2.26] Growing Concerns surrounding Deepfake Technology

### Syllabus - Science & Technology [GS Paper-3]

#### Context

Recently, the MeitY submitted a comprehensive status report to the Delhi High Court, addressing the developing concerns surrounding deepfake technology.

#### Key Highlights

- It highlights the challenges posed by deepfakes, in particular in the context of misinformation, privacy violations, and malicious uses, at the same time as featuring actionable recommendations to mitigate these risks.
- **Concerns**
  - **Lack of Uniform Definition:** Stakeholders emphasized the absence of a standardized definition for 'deepfake', complicating efforts to alter and hit upon such content efficiently.
  - **Targeting Women During Elections:** Deepfakes have been increasingly used to target women, particularly during state elections, raising extreme issues about privateness and the unfolding of harmful content.

#### About Deepfake Technology

- The term 'deepfake' originates from 'deep gaining knowledge of' and 'fake' relating to AI-generated artificial media that manipulates or replaces real content with fabricated, hyper-realistic counterparts.
- Deepfake models use generative antagonistic networks (GANs), where AI models — the generator and the discriminator — compete towards each other to enhance the authenticity of the generated content.

#### Working of Deepfakes

- **Data Collection:** The AI is skilled on a massive dataset of real images, motion pictures, or audio recordings of the target character.
- **Feature Learning:** The deep learning version learns facial systems, expressions, and speech styles.
- **Synthesis & Manipulation:** AI algorithms generate artificial media that may change faces, adjust expressions, or mimic voices.
- **Refinement through Generative Adversarial Networks (GANs):** The generated content is delicate to enhance realism and decrease detectable inconsistencies.

#### Concerns Surrounding Deepfakes

- **Misinformation and Political Manipulation:** In India, wherein social media platforms play a critical role in political discourse, deepfake motion pictures may be weaponized to create unrest.
- **Threat to National Security:** Malicious actors can use deepfakes to impersonate authorities officers, leading to incorrect information or even cyber conflict approaches that threaten national security.
- **Financial Frauds and Cybercrime:** AI-generated deepfake voices have been used to mimic corporate executives, leading to economic fraud.
- **Violation of Privacy and Defamation:** Deepfakes are often used to create non-consensual specific content material, disproportionately concentrated on women.

- **Undermining Trust in Media:** When sensible faux content material circulates widely, it erodes public trust within proper journalism and proof based reporting, affecting democratic tactics.

### Government Response and Legal Framework

- **Information Technology (IT) Act, 2000:** It provides a large framework for cybercrimes but lacks precise provisions addressing deepfake-related offenses.
- **Section 66D:** Punishes identification robbery and impersonation using virtual approach.
- **Section sixty seven:** Penalizes the publishing of obscene fabric, which may be used in opposition to deepfake pornography.
- **Personal Data security Bill (PDPB) [Now Digital Personal Data security (DPDP) Act, 2023]:** It goals to adjust the gathering and use of private data. Misuse of deepfakes regarding personal identification will be challenged under this act.
- **Intermediary Guidelines & Digital Media Ethics Code (2021):** These guidelines mandate social media platforms to proactively display and take away harmful content material, along with deepfakes, failing which they will lose legal immunity under the IT Act.
- **Fact-Checking and AI Detection Initiatives:** Platforms like PIB Fact Check had been actively debunking deepfake videos spreading misinformation.
- **Global Collaboration:** India is collaborating with international tech firms and governments to fight deepfakes via coverage discussions and AI research initiatives.

### Challenges in Regulation

- **Intermediary Liability Frameworks:** The file raised concerns about over-reliance on middleman legal responsibility frameworks, which decide the volume to which structures can be held chargeable for content.
- **Detection Difficulties:** Audio deepfakes, especially, pose vast challenges for detection, underscoring the need for advanced technological answers.

### Recommendations from the Report

- **Mandatory Content Disclosure:** The report advocates for guidelines requiring AI-generated content material to be disclosed and labelled, making sure transparency and accountability.
- **Focus on Malicious Actors:** Emphasis was positioned on concentrating on the malicious uses of the deepfake era instead of benign or innovative applications.
- **Improved Enforcement:** Instead of introducing new legal guidelines, the report recommends enhancing the ability of investigative and enforcement businesses to tackle deepfake-associated crimes correctly.

**Source:** [The ToI](#)

### Mains PYQ

1. ***“The emergence of the Fourth Industrial Revolution (Digital Revolution) has initiated e-Governance as an integral part of government”. Discuss. (2020)***
  - Recently, the MeitY submitted a comprehensive status report to the Delhi High Court, addressing the developing concerns surrounding deepfake technology.
  - It highlights the challenges posed by deepfakes, in particular in the context of misinformation, privacy violations, and malicious uses, at the same time as featuring actionable recommendations to mitigate these risks.

- **Concerns**

- **Lack of Uniform Definition:** Stakeholders emphasized the absence of a standardized definition for 'deepfake', complicating efforts to alter and hit upon such content efficiently.
- **Targeting Women During Elections:** Deepfakes have been increasingly used to target women, particularly during state elections, raising extreme issues about privateness and the unfolding of harmful content.

## [2.27] Food Waste: A Global Crisis

### Syllabus: Hunger & Food Security [GS Paper-3], Environment [GS Paper-3]

#### Context

Food wastage is a global crisis that transcends resource mismanagement and highlights moral, environmental, and economic failures. The United Nations Environment Programme's (UNEP) Food Waste Index Report 2024 reveals that in 2022, 1.05 billion tonnes of food—nearly 20% of all food available to consumers—was wasted globally. This issue is particularly alarming in nations like India, where widespread hunger coexists with significant food wastage.

#### The Scale of the Problem

##### Global Food Waste

- In 2022, households contributed to 60% of the world's food waste, amounting to 631 million tonnes. The remaining 40% came from food service and retail sectors.
- On average, each person wastes 79 kg of food annually, equating to one billion meals wasted daily.
- Food loss during production and supply chains further exacerbates the problem, with an additional 13% of food lost before reaching consumers.

##### India's Contribution

- India generates 78.2 million tonnes of food waste annually, with a per capita wastage of 55 kg/year.
- Urban areas contribute significantly more to food wastage compared to rural regions.
- Despite being home to the largest hunger population (233.9 million people), India ranks among the top contributors to global food waste.

#### Moral and Ethical Dimensions

Food wastage is not merely a logistical issue but a profound moral failure:

- **Hunger vs. Wastage:** While millions face hunger and malnutrition, edible food is discarded daily. Globally, one-third of humanity experiences food insecurity while sufficient resources are wasted.
- **Ethical Responsibility:** Wasting food undermines efforts to achieve global food security and violates ethical imperatives to conserve resources for those in need.

#### Environmental Impacts

##### Greenhouse Gas Emissions

- Food waste generates 8–10% of global greenhouse gas (GHG) emissions—five times the emissions from the aviation sector.
- Decomposing food in landfills releases methane, a potent GHG that accelerates climate change.

## Resource Depletion

- Wasted food represents wasted resources: all the water, all the energy, and all the agricultural inputs used in production and transportation.
- Overproduction for consumption leads to deforestation and loss of biodiversity resulting from expansion of croplands and pastures.

## Economic Costs

The economic implications of food wastage are staggering:

- The value of wasted food crosses billions around the globe every year.
- The U.S. retailers volunteered that reducing unsold food would save millions but would reduce carbon footprints by 30%.

## Steps Toward Mitigation

### Policy Interventions

- **Government Initiatives:** Japan and the UK have managed to achieve fairly significant figures in the reduction of food waste, at 18% and 31%, respectively, through specific policy measures.
- **Public-Private Partnerships:** Involving oceans of other such public-private partnerships about government, business, and municipalities would create large-scale solutions to reduce waste.

### Technological Solutions

- Supply chain management innovation could minimize losses at production and distribution stages.
- That has proved quite promising in the city through apps that link surplus foods with needy households.

### Behavioral Changes

- Household Awareness: Educating households on portion control and proper storage will help to lessen their share of the present 60% of waste they contribute globally to waste.
- Value changes: This attitude change on leftovers and not-so-perfect produce makes the consumer save instead of wasting away into disposal.

### Community Engagement

- Encourage community composting initiatives for lowering the landfill contributions and enhancing the health of soils.
- Community-based initiatives in local donation will make sure that, at least, an excess of edible surplus food is available to the needy.

## India's Unique Challenges

India faces distinct challenges in addressing food wastage:

1. **Urban-Rural Divide:** Urban areas exhibit higher levels of waste due to lifestyle disparities, requiring targeted interventions tailored to urban settings.
2. **Data Limitations:** The lack of comprehensive data hampers effective policy implementation. Improved tracking mechanisms are essential for progress monitoring.

## Conclusion

Food wastage is a multifaceted issue with far-reaching consequences for humanity and the planet. Addressing this crisis requires collective action across governments, businesses, and individuals. By adopting sustainable practices, fostering behavioral shifts, and leveraging technology, we can mitigate this colossal wastage and move closer to achieving global goals like Sustainable Development Goal 12.3: halving per capita global food waste by 2030. This is not just an environmental or economic imperative—it is a moral obligation we owe to future generations.

Source: [The Hindu](#)

### UPSC Mains Practice Question

Q. Food wastage is not just a matter of resource mismanagement but also a moral, environmental, and economic failure. Analyze the causes and consequences of food wastage in India and suggest effective policy measures to address this issue. (250 words)

## [2.28] Judiciary's In-House Inquiry: Process and Mechanism

### Syllabus: Governance [GS Paper-2]

#### Context

The judiciary's in-house inquiry is a vital mechanism for addressing allegations of misconduct against judges, ensuring judicial accountability while maintaining the independence of the judiciary. This process is distinct from the constitutional impeachment mechanism and operates as an internal corrective measure.

#### Origins and Evolution of the In-House Inquiry

- Justification of this Mechanism was that the in-house inquiry dealt with judicial misconduct by the judges, which, by their nature, had no impeachable offenses on articles 124(4) and 218 of the Constitution. It drew much more attention from several cases like C. Ravichandran Iyer vs. Justice A.M. Bhattacharjee (1995) regarding non-impeachable misconducts where past judgments had left gaps in addressing them.
- It was in 1997 that a five-member committee submitted the guidelines. The Supreme Court adopted them in the same year but refined those later in 2014 after an incident related to a sexual harassment complaint. This now has a complete process of seven steps.

#### Key Features of the In-House Inquiry

1. Internal Mechanism: the inquiry will be independent of Parliament, hence it is necessarily for the maintenance of the integrity and values of the judiciary.
2. Distinct from impeachment: In house inquiry is an administrative process of fact finding as against the parliamentary approval which is required for impeachment.
3. Confidentiality: Proceedings, as a general principle, have to be held behind closed doors in order to keep independence of judiciary.

#### Process of Conducting an In-House Inquiry

##### 1. Receiving Complaints

- Complaints can be submitted to:
  - The Chief Justice of India (CJI) for Supreme Court judges.
  - The Chief Justice of the respective High Court for High Court judges.
  - The President of India, who forwards them to the CJI.

##### 2. Preliminary Scrutiny

- The CJI examines whether the complaint is frivolous or serious.
- If deemed serious, a preliminary report is sought from the concerned High Court Chief Justice (HC CJ).

### 3. Formation of an Inquiry Committee

- If further investigation is warranted, a three-member committee is constituted by the CJI. It typically includes:
- Two Chief Justices from other High Courts.
- One senior High Court judge.
- The committee ensures adherence to principles of natural justice, allowing the accused judge to present their defense.

### 4. Conducting the Inquiry

- The inquiry is fact-finding in nature and not a formal judicial proceeding.
- Evidence is examined, and the accused judge may be questioned.

### 5. Submission of Report

- The committee submits its findings to the CJI, categorizing the allegations as:
- Substantiated but not severe enough for removal.
- Severe enough to warrant removal proceedings.

### Post-Inquiry Actions

#### 1. Minor Misconduct:

- The CJI may advise the judge to improve conduct or issue a warning.
- The report is kept confidential but placed on record.

#### 2. Serious Misconduct:

- The CJI may recommend that the judge resign or retire voluntarily.
- If the judge refuses, they may be relieved of judicial duties.
- For extreme cases, impeachment proceedings may be recommended to Parliament.

### Challenges in the In-House Inquiry Process

1. **Lack of Transparency:** Closed-door proceedings often lead to concerns about accountability and public trust.
2. **No Direct Removal Powers:** The judiciary cannot directly remove a judge; impeachment by Parliament remains necessary.
3. **Rare Impeachment:** Parliamentary impeachment is complex and rarely successful due to political considerations.
4. **Delays:** Prolonged investigations can erode public faith in judicial accountability.

### Significance of In-House Inquiries

The in-house inquiry mechanism plays a crucial role in maintaining judicial integrity by addressing misconduct swiftly without compromising judicial independence. It ensures that judges adhere to high ethical standards while preserving public confidence in the judiciary. By balancing accountability with autonomy, this process strengthens India's democratic framework and reinforces trust in its legal system.

Source: [The Hindu](#)

## UPSC Mains Practice Question

Q. With reference to the concept of "In-House Inquiry" in the Indian Judiciary, consider the following statements:

1. An in-house inquiry is an internal mechanism adopted by the judiciary to examine allegations of misconduct against sitting judges.
2. The Supreme Court of India has the sole authority to initiate an in-house inquiry against any judge of the High Court or Supreme Court.
3. The process of in-house inquiry does not require parliamentary intervention.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, and 3

Ans. - B

## [2.29] FAO: 60% of Global Crops Depend on 9 Key Crops

### Introduction

The Food and Agriculture Organization (FAO) released the Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture (SoW3) on March 24, 2025. The report highlights alarming trends in global crop production and the growing threats to plant genetic diversity. Despite cultivation of over 6,000 plant species globally, 60% of crop production relies on just nine crops, posing significant risks to food security and biodiversity.

### Overdependence on Nine Crops

The report reveals that global crop production is heavily reliant on nine crops: sugarcane, maize, rice, wheat, potatoes, soybeans, oil palm fruit, sugar beet, and cassava. This dependency increases vulnerability to environmental changes, pests, and diseases. Such a narrow genetic base limits resilience in agricultural systems and raises concerns about long-term food security.

### Threats to Genetic Diversity

#### Farmers' Varieties and Landraces (FV/LR)

The report surveyed farmers' varieties and landraces (FV/LR) within 18 sub-national regions across the globe and reported that 6% of their diversity is threatened with extinction. Nine sub-national regions have a more alarming situation as it is reported that over 18% of FV/LR are threatened. Threatened diversity from Southern Africa ranks the highest compared to that from the Caribbean and Western Asia. In stark contrast, even lowly threatened diversity was from Southern Asia, Australia, and New Zealand.

### Conservation Challenges

- **In-situ Conservation:** Farmers' variety conservation activities have shown that 42% of plant taxa surveyed face extinction either as species or varieties.
- **Ex-situ Conservation:** Despite efforts in the past decade to establish seed banks and gene repositories, the conservation process faces numerous challenges such as lack of funds, competent personnel, and infrastructural inadequacy. The political will in most countries to foster the conservation agenda is often lacking.



## Regional Insights: India's Conservation Efforts

Genetic erosion is a pressing problem in India that calls for urgent conservation efforts. More than 50% of the documented FV/LRs across five agro ecological zones are under threat. However, India has made some progress in establishing seed hubs for indigenous pulse production. The intervention has increased pulse production from 14.76 million tonnes in 2007-08 to 24.42 million tonnes in 2020-21.

## Climate Change and Crop Diversity

The report underscores climate change as a major threat to crop diversity. Erratic weather events disrupt agricultural systems worldwide:

- Many countries fail to assess the impact of disasters on crop diversity.
- Post-disaster germplasm distribution often lacks adaptation to local conditions or cultural environments.  
These challenges exacerbate genetic erosion and hinder recovery efforts.

## Implications for Food Security

### Vulnerabilities

- Heavy reliance on a few crops increases susceptibility to disruptions caused by pests, diseases, or climate change.
- Loss of genetic diversity reduces adaptability to changing environmental conditions.

### Solutions

- Strengthening conservation measures through political commitment and financial investment.
- Promoting diversification in agricultural systems by cultivating underutilized crops.
- Enhancing global collaboration for germplasm exchange and research.

## Conclusion

The FAO's SoW3 report highlights critical challenges in global agriculture due to overdependence on nine crops and threats to plant genetic diversity. Addressing these issues requires coordinated efforts in conservation, diversification, and climate resilience strategies. For India and other nations facing similar challenges, proactive policies can mitigate risks and ensure sustainable food security for future generations.

**Source:** [DTE](#)

## UPSC Prelims Practice Question

**Q. Consider the following statements regarding Kharif and Rabi crops in India:**

- 1. Kharif crops are sown during the monsoon season and harvested in winter.**
- 2. Rabi crops require less water and are sown in the winter season.**
- 3. Rice, maize, and bajra are examples of Rabi crops.**

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only**
- (b) 2 only**
- (c) 1 and 3 only**
- (d) 1, 2, and 3**

**Answer: (b) 2 only**

## [2.30] India's Social Protection Coverage Doubles

### Syllabus: Social Issues [GS Paper-2]

#### Context

India has made remarkable progress in expanding social protection coverage, doubling it from 24.4% in 2021 to 48.8% in 2024. This achievement reflects the country's commitment to ensuring social justice and improving the quality of life for its citizens, particularly those in vulnerable groups. Below is an in-depth analysis of this development.

#### Introduction to Social Protection

Social protection refers to measures designed to reduce poverty and vulnerability by promoting efficient labor markets, diminishing people's exposure to risks, and enhancing their capacity to manage economic and social shocks. The International Labour Organization (ILO) defines social protection as encompassing benefits like healthcare, pensions, maternity assistance, unemployment benefits, and disability support financed through public investment or wage contributions.

#### Key Statistics and Achievements

- **Coverage Expansion:** India's social protection coverage increased from 24.4% in 2021 to 48.8% in 2024, benefiting nearly half of the population.
- **Population Impact:** Approximately 920 million people (65% of India's population) are covered by at least one social protection benefit, including cash and in-kind schemes.
- **Global Recognition:** India's efforts contributed significantly to the global increase in social protection coverage, which rose by 5 percentage points.

#### Factors Behind the Expansion

- **Labor Reforms:** India consolidated 29 labor laws into four simplified labor codes aimed at universalizing wages, improving working conditions, and expanding social security. These reforms modernized workforce policies and facilitated greater inclusion of informal sector workers.
- **e-Shram Portal:** Launched as a centralized database for unorganized sector workers, the e-Shram portal registered over 300 million workers. It helps streamline access to welfare schemes and ensures targeted delivery of benefits.
- **Government Schemes:** India implemented Aadhaar-linked identifiers for major schemes such as:
  - Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)
  - Employees' Provident Fund Organisation (EPFO)
  - Employees State Insurance Scheme (ESIC)
  - PM-POSHAN nutrition program

These initiatives collectively processed billions of records to identify unique beneficiaries.

- **Food Security Measures:** The government distributes free food grains to over 800 million people annually under its food subsidy program. Although not formally counted as social protection by international standards, these measures significantly enhance welfare outcomes.

#### Challenges in Implementation

- **Informal Sector Dominance:** Over 80% of India's workforce operates in the informal sector without formal contracts or paid leave. Extending social protection to this group remains a major challenge.

- **Underestimation of Coverage:** The ILO primarily focuses on cash benefits while excluding in-kind benefits like food distribution and housing assistance. India is advocating for the inclusion of such measures to reflect a more comprehensive picture of its social protection efforts.
- **Gig Economy Workers:** With the rise of gig workers in India's economy, there is growing demand for tailored social security measures for this segment. The government has announced plans to address this issue.

### Future Prospects

- **Reassessment by ILO:** India is collaborating with the ILO for a reassessment of its social protection coverage, which could increase estimates from 48.8% to over 57%. This would provide a more accurate depiction of India's achievements.
- **Innovations for Informal Sector Workers:** Strategies discussed during international seminars include formalizing informal employment and leveraging technology for efficient delivery of benefits. These efforts aim to bridge gaps in coverage and ensure equitable access for all workers.
- **Expanding Health Security:** India plans to further enhance health security measures, which already cover over 600 million individuals with free health insurance up to ₹5 lakh at more than 24,000 hospitals nationwide.

### Conclusion

India's doubling of social protection coverage marks a significant milestone in its journey toward inclusive development and social justice. By addressing challenges such as informal sector dominance and advocating for broader recognition of its welfare measures, India is setting an example for other nations striving to expand their social security frameworks. Continued reforms and innovations will be crucial in sustaining this momentum and achieving universal coverage in the coming years.

Source: [HT](#)

### UPSC Mains Practice Question

**Q. Social protection is essential for reducing poverty and inequality in India. Discuss the key challenges in implementing social protection schemes and suggest measures to enhance their effectiveness. (Answer in 250 words)**

## [2.31] Impact of Global Warming on Mountain Ranges

Syllabus: Disaster Management, Environmental Issues [GS Paper-3]

### Context

Mountains, covering 33 million square kilometers of Earth's surface, are vital ecosystems that provide freshwater to nearly 2 billion people. However, global warming is causing rapid and largely irreversible changes in mountain environments, posing serious threats to biodiversity, water resources, and human safety. Below is an in-depth analysis of how global warming impacts mountain ranges.

## Accelerated Glacier Melting

Glaciers are retreating at unprecedented rates due to rising global temperatures. Since 1975, glaciers (excluding Greenland and Antarctica) have lost over 9,000 billion tonnes of ice mass—equivalent to an ice block the size of Germany with a thickness of 25 meters.

- **Recent Trends:** The past three years have recorded the highest glacial mass loss on record, with 450 gigatons lost in 2024 alone.
- **Impact on Water Resources:** Glaciers act as "water towers," supplying freshwater to billions downstream. Their rapid melting disrupts water availability, leading to erratic flows and reduced water quality.
- **Sea-Level Rise:** Melted glacier ice contributes 25–30% of the observed increase in global sea levels. Between 2006 and 2016, glacier melt added nearly 1 mm annually to sea levels.

## Thawing Permafrost

- **Ecosystem Disruption:** Permafrost stores approximately 4.5% of global soil organic carbon. Its thaw releases greenhouse gases like methane and CO<sub>2</sub>, exacerbating climate change.
- **Increased Hazards:** Thawing destabilizes rock slopes and moraines, increasing risks of landslides, erosion, and infrastructure collapse. For example, the Himalayas have experienced frequent landslides and flash floods due to permafrost melting.

## Decline in Snow Cover

- **Statistical Decline:** Between 1979 and 2022, persistent snow cover showed a drop around 7.79% over the years.
- **Future Projections:** Climate models reported reduction in snow cover as temperature increased together with irregular precipitation patterns in the future.
- **Hydrology:** Reduced snow cover affects the water storage capacity in mountainous regions, resulting in irregularity of water flow downstream, and disrupting agriculture, hydropower generation, as well as drinking water supply.

## Erratic Snowfall Patterns

- **Elevation Change:** Due to atmospheric warming, the elevation where rainfall turns into snowfall is changing toward higher levels, causing lower elevations to have a decreased amount of snow cover with respect to depth and duration.
- **Rain vs. Snow:** Rainfall events in some areas are replacing the precipitation events with snow which alters the seasonal availability of water and increases the risk of flooding.

## Biodiversity Threats

- **Migration of Species:** Due to increased temperatures, species would seek migration upwards in search for habitats, but many will face extinction, like reaching the upper limits on mountains where conditions are not sustainable.
- **Alpine Ecosystems:** Vulnerable to endemic species thriving in snow-covered habitats. For instance, the greening of mountain slopes due to forest expansion threatens native alpine flora and fauna.

## Increased Natural Disasters

Global warming amplifies the frequency and intensity of natural disasters in mountainous regions.

- **Glacial Lake Outburst Floods (GLOFs):** Melting glaciers create unstable glacial lakes that can burst suddenly, causing catastrophic floods. GLOFs have claimed over 12,000 lives in the past two centuries.
- **Landslides and Avalanches:** Thawing permafrost destabilizes slopes, increasing landslide risks. Avalanches are also becoming more frequent due to erratic snowfall patterns.

- **Flood Risks:** Accelerated glacier melt contributes to river floods downstream, threatening communities and infrastructure.

### Socioeconomic Impacts

The changes in mountain ecosystems have far-reaching consequences for human populations.

- **Water Scarcity:** Erratic water flows from melting glaciers affect agriculture, drinking water supplies, and hydropower generation for billions living downstream.
- **Tourism Losses:** Declining snow cover impacts winter tourism economies in regions like the Alps.
- **Displacement:** Increased natural disasters force communities to relocate, leading to internal displacement and economic instability.

### Conclusion

The impact of global warming on mountain ranges is profound and multifaceted. From accelerated glacier melting to biodiversity loss and increased natural disasters, these changes threaten ecosystems and human livelihoods globally. Urgent climate action is essential to mitigate these effects and preserve the critical role mountains play in sustaining life on Earth.

**Source:** [The Indian Express](#)

### UPSC Prelims Practice Question

**Q. Which of the following statements is/are correct regarding the impact of global warming?**

1. Melting glaciers contribute significantly to sea-level rise.
2. Increased global temperatures lead to more frequent extreme weather events.
3. Global warming has no impact on biodiversity in mountain ecosystems.

**Options:**

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) 1, 2, and 3

**Answer:** a) 1 and 2 only

## [2.32] CGRFA-20: Conserving Genetic Resources

### Syllabus: Environment and Conservation [GS Paper-3]

#### Context

The 20th regular session of the Commission on Genetic Resources for Food and Agriculture (CGRFA-20) was held in Rome from March 24–28, 2025. This intergovernmental body, established under the United Nations Food and Agriculture Organization (FAO), plays a vital role in conserving biodiversity for food and agriculture. The meeting focused on strategies to conserve plant and forest genetic resources, the role of genetic diversity in climate adaptation, and policies to strengthen global forest security.

## Importance of Genetic Resources

Genetic resources are fundamental to food security, biodiversity, and sustainable agriculture. They include thousands of species and their genetic variability, which are critical for maintaining resilient ecosystems. However, the resources are threatened by climate change, destruction of ecosystems through human activities, and biological impediments such as pests and diseases. The CGRFA promotes the sustainable use of these resources toward food security, human well-being, and development.

## Key Features

- **Conservation Strategies:**
  - **Plant Genetic Resources:** Discussions focused on preserving crop diversity through seed banks, modern breeding techniques, and community-based initiatives. These efforts aim to safeguard agricultural biodiversity against climate change and other challenges.
  - **Forest Genetic Resources:** Sustainable forest management practices were emphasized to protect genetic diversity in forests. Strategies included combating habitat loss, illegal logging, and promoting climate adaptation measures.
- **Role of Genetic Diversity in Climate Adaptation:** The Commission highlighted how genetic diversity contributes to resilience against climate-induced challenges such as extreme weather events and pests. By integrating genetic resources into farming and forestry practices, countries can enhance their adaptive capacities.
- **Strengthening Global Forest Security:** Policies aimed at improving forest conservation were discussed. These included international collaborations to monitor forest biodiversity and funding mechanisms to support conservation initiatives.

## Challenges Identified

Both reports underscored several challenges:

- Funding gaps for conservation projects.
- Weak policy frameworks in certain regions.
- Threats from deforestation, habitat loss, illegal logging, pests, diseases, and climate change.

## Outcomes of CGRFA-20

- **Policy Coordination:** The Commission facilitated discussions among member countries to align policies for conserving genetic resources globally. It also monitored progress in implementing these policies.
- **Capacity Building:** Efforts were directed toward enhancing technical expertise in sustainable farming and forestry practices that integrate genetic resource conservation.
- **International Collaboration:** The session fostered international cooperation by sharing successful case studies and best practices across regions. It also encouraged countries to adopt innovative approaches such as modern breeding techniques.

## Conclusion

The CGRFA-20 session reaffirmed the critical role of genetic resources in ensuring global food security and sustainable development. By addressing conservation gaps through coordinated policies, funding mechanisms, and innovative tools like the global information system for forest genetic resources, the Commission aims to mitigate threats posed by climate change and biodiversity loss.

Source: [DTE](#)

## UPSC Prelims Practice Question

Q. With reference to the Food and Agriculture Organization (FAO), consider the following statements:

1. FAO is a specialized agency of the United Nations that leads international efforts to defeat hunger.
2. The headquarters of FAO is located in Geneva, Switzerland.
3. FAO releases the "State of Food Security and Nutrition in the World" report annually.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, and 3

Ans. - B

## [2.33] 3rd Session of India-Uganda Joint Trade Committee

### Syllabus: International Relations [GS Paper-2]

#### Context

The 3rd Session of the India-Uganda Joint Trade Committee (JTC) was held on March 25-26, 2025, at Vanijya Bhawan, New Delhi. This meeting marked a significant milestone in strengthening bilateral trade and investment relations between India and Uganda after a gap of 23 years. The session aimed to address trade bottlenecks, explore new areas of cooperation, and enhance economic collaboration in various sectors.

#### Key Participants

The meeting was inaugurated by Shri Jay Bhadoo, Additional Secretary, Ministry of Commerce, India. Distinguished attendees included:

- **India's High Commissioner to Uganda:** H.E. Upender Singh Rawat.
- **Uganda's High Commissioner to India:** H.E. Amb. Prof. Joyce Kakuramatsi Kikafunda.
- **Co-Chairs:** Ms. Priya Nair (Economic Advisor, Ministry of Commerce & Industry, India) and Amb. Elly Kamahungye Kafeero (Ministry of Foreign Affairs, Uganda).

The Ugandan delegation comprised officials from multiple ministries and agencies such as:

- Ministry of Trade, Industry and Cooperatives.
- Ministry of Agriculture, Animal Industry and Fisheries.
- Ministry of ICT and National Guidance.
- Civil Aviation Authority.
- Uganda Airlines.

#### Objectives of the Meeting

The primary objectives of the JTC session were:

- **Reviewing Bilateral Trade:** Both countries agreed that the current trade volume is inadequate to demonstrate the true partnership potential of their bilateral ties and agreed upon efforts to expand and diversify trade.

- **Trade Barriers Removal:** The two nations deliberated on removal of non-tariff obstacles and alignment of regulatory standards.
- **Outreach on New Cooperation Sectors:** The priority sectors of interest comprise mining, agriculture, MSMEs, health, pharmaceuticals, digital infrastructure, and electric vehicles.
- **Use Duty-Free Tariff Preference (DFTP) Mechanism:** Discussion on modalities to increase Uganda's exportable commodities under India's DFTP scheme.

## Key Discussion Points

### Bilateral Trade and Investment

Both sides emphasized enhancing trade ties by forming an India-Uganda Joint Business Forum to facilitate industry-level engagement. The discussions identified key commodities for trade expansion:

- Minerals, coffee, cocoa products.
- Pulses, spices, dairy products.
- Essential oils, fruits, vegetables.

### Strategic Cooperation in Sectors

Areas highlighted for collaboration included:

- Mining critical minerals like Rare Earth Elements (REE).
- Banking and digital payments (Unified Payments Interface – UPI).
- Pharmaceuticals and healthcare.
- MSME development and rural electrification.

### Memorandums of Understanding (MoUs)

Proposals for MoUs were discussed in areas such as:

- Recognition of Indian Pharmacopoeia.
- Public Works & Infrastructure Development.
- Traditional Medicine and Telemedicine.

## Achievements and Outcomes

- **Strengthening Economic Relations:** The deliberations were forward-looking and aimed at fostering deeper economic engagement between the two nations. Both sides agreed to take focused measures to diversify trade while addressing existing challenges.
- **Insights into Industrial Ecosystems:** On the sidelines of the JTC meeting, the Ugandan delegation visited the Noida Special Economic Zone (SEZ) to understand India's export ecosystem better.
- **Significance for India-Uganda Relations:** The JTC serves as a crucial platform for addressing trade challenges and identifying opportunities for collaboration. The renewed commitment displayed during this session reflects the growing partnership between India and Uganda in key economic sectors.

## Conclusion

The 3rd Session of the India-Uganda Joint Trade Committee was a landmark event aimed at enhancing bilateral trade relations after decades of limited engagement. With discussions covering diverse sectors like agriculture, mining, health, MSMEs, and digital infrastructure, this meeting has set the stage for deeper economic cooperation between the two nations.

Source: [BS](#)



## UPSC Mains Practice Question

**Q. The 3rd Session of the India-Uganda Joint Trade Committee (JTC) marked a renewed commitment to enhancing bilateral trade and investment after a gap of 23 years. Critically analyze the key outcomes of this session and discuss how such initiatives can strengthen India's economic diplomacy in Africa.**

### [2.34] Growth of India's E-retail Market

#### Syllabus - Economy [GS Paper-3]

##### Context

India's e-retail market is predicted to triple to \$170–\$190 billion in gross merchandise value (GMV) by 2030 driven by an increasing consumer base and modern business models.

##### India's retail industry

- It is one of the fastest-developing globally and India is a key market for global retail giants, pushed through its large middle class and untapped potential.
- The urban Indian consumer's increasing purchasing power is fostering demand for branded goods throughout diverse classes.

##### Drivers of Growth

- **Favorable Demographics:** India's massive, younger population, growing middle magnificence, urbanization, and changing lifestyles are important contributors to retail growth, supported by favorable government rules.
  - User adoption is spreading to Tier-2 and Tier-three cities, with 60% of new consumers since 2020 coming from smaller towns.
  - The Northeast region indicates higher e-retail penetration, with 1.2 times higher consumer adoption than different elements of India.
- **Increase in Income and Purchasing Power:** India ranks amongst the top economies in GDP by Purchasing Power Parity (PPP), with growing profits ranges and stepped improved purchasing power, alongside a large discount in extreme poverty.
- **Change in Consumer Mindset:** A shift from conventional retail to online platforms has brought about increased convenience, wider product selection, rate sensitivity, trust in on-line transactions, and more reliance on era and fast shipping.
- **Brand Consciousness:** Consumers in India are becoming more brand-aware, prompted by financial, cultural, and technological elements.
- **Easy Consumer Credit and Quality Products:** The growth of unsecured retail loans alongside a rise in quality products, has similarly boosted consumer spending.

##### Current Status

- India is presently the world's second-biggest e-retail market and had over 270 million online consumers in 2024.
- India now trails most effective China, which boasts a brilliant 920 million virtual consumers.
- The market is worth \$60 billion in 2024, with a growth rate of 10–12%, down from over 20% due to macroeconomic pressures.
- Categories like grocery, way of life, and well known products are anticipated to force 70% of incremental growth by 2030, with penetration ranges rising to four instances.

- Quick trade (Q-trade), accounting for 10% of general e-retail GMV, is forecast to grow over 40% annually.

### Challenges

- India's e-retail market surged in 2024, however its annual growth rate has slowed due to broader economic demanding situations, including growing inflation, stagnant wages, and weakened consumer spending, in particular in urban markets.
- Many consumer brands have stated slow revenue growth, suffering to evolve to converting spending patterns.

### Various projects

- The government has introduced regulations to enhance the business climate and simplify the manner for foreign agencies to set up fully owned subsidiaries, further boosting the retail zone's growth.
- Government of India has allowed 100% FDI in online retail of goods and services via the automatic course, thereby supplying clarity on the existing companies of E-trade agencies working in India.

### Way Forward

- The COVID-19 pandemic has shifted consumer opportunities, mixing on-line and offline purchasing reports.
- Retailers are the use of modern strategies, integrating e-trade with traditional strategies, and experimenting with new revenue forms to enhance customer value.
- E-commerce is growing swiftly, presenting customers with more alternatives at lower costs, and is predicted to preserve revolutionizing the retail sector.
- Retailers must recognize digital channels to lessen actual estate expenses and attain more consumers in Tier II and Tier III cities.

**Source:** [The Indian Express](#)

### Prelims PYQ

**1. With reference to foreign-owned e-commerce firms operating in India, which of the following statements is/are correct? (2022)**

- 1. They can sell their own goods in addition to offering their platforms as market-places.**
- 2. The degree to which they can own big sellers on their platforms is limited.**

**Select the correct answer using the code given below:**

- (a) 1 only**
- (b) 2 only**
- (c) Both 1 and 2**
- (d) Neither 1 nor 2**

**Ans: (b)**

- India's e-retail market is predicted to triple to \$170–\$190 billion in gross merchandise value (GMV) by 2030 driven by an increasing consumer base and modern business models.
- It is one of the fastest-developing globally and India is a key market for global retail giants, pushed through its large middle class and untapped potential.
- The urban Indian consumer's increasing purchasing power is fostering demand for branded goods throughout diverse classes.

## [2.35] Foetal Viability Debates related to Abortion

### Syllabus - Science & Technology [GS Paper-3]

#### Context

Some doctors express ethical discomfort about appearing abortions, particularly because the pregnancy progresses.

#### Key Highlights

- Concerns accentuate in cases of advanced gestation, in which Foetal viability debates emerge.
- **Foetal Viability Debate:** Viability refers to the point at which a fetus can survive outside the womb, but no definitive moment exists.
  - As pregnancy advances, the fetus's right to life grows more potent, making viability a contentious issue in legal and ethical discussions.

#### India's Legal Stance on Abortion

- The Medical Termination of Pregnancy (MTP) Act permits abortions in precise predetermined conditions.
- Before the enactment of the MTP Act in 1971, the medical termination of pregnancy was ruled by the Indian Penal Code (IPC).
  - Most of those provisions aimed at criminalising abortions, besides where the process was executed in good faith in order to save the woman's life.
  - The provisions failed to make a difference between wanted and unwanted pregnancies, making it extremely arduous for women to access secure abortions.
- In 1971, the MTP Act was enacted by Parliament as a "health" measure, to decriminalise abortion in certain defined circumstances and under due supervision of registered medical practitioners.
  - A being pregnant ought to only be terminated under Section 3(2) if it did not exceed 20 weeks.
  - It laid down that being pregnant can be terminated on the opinion of one doctor if it is done within 12 weeks of conception and two doctors if it is done between 12 and 20 weeks.
- **The 2021 modification to the MTP Act:** Rule 3B accepted abortion as much as 24 weeks for women due to change of marital status during the ongoing pregnancy, besides in cases of survivors of rape, victims of incest, and other vulnerable women.
  - It also changed the phrase "by any married woman or her husband" with the phrases "any woman or her partner", bringing in the fold of the law pregnancies outside marriage institutions.
- After 24 weeks, the MTP Act calls for medical forums of expert docs to be set up by the state government in every district, which opine on whether or not to allow termination of pregnancy in case of massive foetal abnormality.

### Arguments in favour of MTP

- **Bodily Autonomy and Reproductive Rights:** Women should have the autonomy to make decisions about their own bodies, the Supreme Court has emphasized the importance of reproductive rights as a part of private liberty.
- **Physical Health:** If being pregnant threatens a woman's health, such as conditions like gestational diabetes or eclampsia, abortion can be justified to defend her life.
- **Mental Health:** In cases wherein being pregnant exacerbates mental health conditions (e.g., postpartum depression or psychosis), abortion may be necessary to protect the mental health of the mother.
- **Non-Viable Fetuses:** If the fetus has congenital abnormalities or conditions incompatible with life, abortion may be ethically right to avoid extended suffering for the baby.
- **Unplanned Pregnancies:** For women dealing with economic or social hardships, the potential to access abortion services can allow them to keep away from certain challenges.
- **Reduction in Unsafe Abortions:** Legal access to abortion reduces the range of dangerous, unlawful abortions that regularly result in serious health risks or even death for women.

### Arguments Against MTP

- **Right to Life of the Fetus:** Ethical objections argue that the fetus has a right to life, particularly as being pregnant progresses and fetal viability will increase, making abortion much less desirable.
- **Emotional and Psychological Effects:** Terminating a pregnancy may have long-term psychological outcomes for the woman, along with guilt, regret, and emotional trauma.
- **Non-Medical Abortions:** There is a concern that permitting abortion might also result in its normalization as a method of abortion, in preference to an extraordinary and essential medical intervention.
- **Risk of Misuse:** There is a difficulty that abortion laws may be misused, including for sex-selective abortions or for non-medical motives, like comfort.
- **Negative Impact on Society:** Widespread abortion ought to make a contribution to a decline in societal values concerning family and the cost of life.
- **Cultural Beliefs:** Cultural norms often view abortion as morally unacceptable, specifically when it's perceived as a contravention of the natural order or conventional family structures.

### Way Ahead

- **Access to Abortion Care:** Making MTP medications more reachable and decreasing administrative limitations may need to improve abortion access.
  - Improved sex education and viewing abortion as a health provider as opposed to a legal exception would possibly help lessen stigma.
- **Empathy in Medical Decision-Making:** Doctors are recommended to deal with women with empathy, specifically in emotionally and physically tough situations involving late-term abortions.

Source: [The Hindu](#)

### Mains PYQ

1. *What are the continued challenges for Women in India against time and space? (2019)*

- Some doctors express ethical discomfort about appearing abortions, particularly because the pregnancy progresses.
- Concerns accentuate in cases of advanced gestation, in which Foetal viability debates emerge.
- **Foetal Viability Debate:** Viability refers to the point at which a fetus can survive outside the womb, but no definitive moment exists.
  - As pregnancy advances, the fetus's right to life grows more potent, making viability a contentious issue in legal and ethical discussions.

## [2.36] Framework for Direct Recruitment in CBI

### Syllabus - Governance [GS Paper-2]

#### Context

The Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice advocated impartial direct recruitment within the CBI.

#### Key Highlights

- **Independent Recruitment:** Significant number of posts stuffed on deputation from diverse organizations.
  - CBI ought to develop an unbiased recruitment framework.
  - Direct recruitment through SSC, UPSC, or a dedicated CBI examination.
  - Lateral entry for experts in cybercrime, forensics, economic fraud, and legal domains.
  - Deputation needs to be restricted to senior posts.
  - Create an in-house information crew to reduce reliance on external experts.
- **State Consent:** Enact a new law permitting CBI to research topics of national security and integrity without state consent.
  - Ensure safeguards to maintain impartiality and prevent state governments from feeling powerless.
- **Permanent Cadre:** CBI ought to establish a permanent cadre with structured career progression for stability.

#### Issues with the Central Bureau of Investigation (CBI)

- **Lack of Autonomy & Effectiveness:** Operates beneath the Delhi Special Police Establishment (DSPE) Act, 1946, which limits its independence.
  - State government consent is needed for investigations, frequently growing operational roadblocks.
- **Manpower Shortages:** Nearly 16% of the employer's sanctioned power is vacant leading to operational hurdles.
- **CBI Deputations Issue:** The CBI faces challenges in filling posts thru deputations, particularly for ranks under inspector, due to a scarcity of appropriate applicants from country police.

#### Central Bureau of Investigation (CBI)

- CBI is India's specialized investigative agency, chargeable for tackling high-profile crimes, corruption, and national safety matters.
- **Founded:** CBI was established in 1963 on the advice of the Santhanam Committee on Prevention of Corruption.

- **Ministry:** Ministry of Personnel, Public Grievances, and Pensions.
- **Jurisdiction:** CBI's investigative powers are subject to state government consent for crimes not covered under its general consent.
  - Eight states have withdrawn this consent, proscribing its potential to analyze positive cases.
- **Director:** The CBI is headed by a Director for a tenure of 2 years, appointed by the significant government on recommendation by a 3-member Appointment Committee.

**Source:** [The Indian Express](#)

### **Mains PYQ**

**1. The jurisdiction of the Central Bureau of Investigation (CBI) regarding lodging an FIR and conducting a probe within a particular state is being questioned by various States. However, the power of the States to withhold consent to the CBI is not absolute. Explain with special reference to the federal character of India. (2021)**

- The Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice advocated impartial direct recruitment within the CBI.
- **Independent Recruitment:** Significant number of posts stuffed on deputation from diverse organizations.
- **State Consent:** Enact a new law permitting CBI to research topics of national security and integrity without state consent.
- **Permanent Cadre:** CBI ought to establish a permanent cadre with structured career progression for stability.

## **[2.37] FMR Between India and Myanmar: A Balanced Approach**

### **Syllabus: International Relations [GS Paper-2]**

#### **Context**

The Free Movement Regime (FMR) between India and Myanmar, implemented in 2018, allowed border residents to travel up to 16 kilometers into each other's territories without a visa. While it was initially designed to strengthen trade and cultural ties under India's Act East policy, recent developments have led to its suspension due to security concerns.

#### **Background of the Free Movement Regime**

The FMR was established as a bilateral agreement to facilitate movement for hill tribes residing within 16 kilometers of the India-Myanmar border. Under this arrangement:

- Tribal members could cross the border with a one-year border pass and stay for up to two weeks.
- The regime aimed to promote trade, cultural exchange, and people-to-people connections between communities divided by colonial-era borders.

However, the porous nature of the 1,643-kilometer-long border spanning Mizoram, Manipur, Nagaland, and Arunachal Pradesh has created challenges in regulating movement effectively.

### Arguments for Retaining the Free Movement Regime

- **Cultural and Ethnic Linkages:** The FMR acknowledges the luminal relation between border communities as a result of their deep blood and ethnic ties. For instance, tribes like Kuki-Chin and Zomi have cultural heritages existing beyond the jurisdictions of nation-states. Not having the FMR, therefore, would alienate these peoples and stab shocks into their way of living.
- **Economic Benefits:** The regime provides opportunities for local commerce to be done on both sides of the border, in a manner that is consistent with India's Act East policy by which the latter tries to establish more ties with Southeast Asia economically.
- **Diplomatic Relations:** Retaining the FMR will be important for strengthening bilateral relations toward Myanmar; even though this is the case at such a moment when disorders are occurring internally in Myanmar, any relationship with them such as cooperation on border management may bear good fruit.

### Arguments Against Retaining the Free Movement Regime

- **Security Issues:** Insurgent groups taking shelter in India's northeast have continuously taken advantage of the FMR to escape into Myanmar after executing attacks. Camps these including NSCN and PLA are located across the border. Increase in smuggling of drugs, arms, and gold is due to lack of stringent checks under the FMR.
- **Demographic Implications:** The flood of illegal immigrants from Myanmar has changed the demographic pattern in the northeastern states, like Manipur and Mizoram, resulting in inter-ethnic tensions and civil riots. Border fencing has been suggested by leaders like Manipur Chief Minister N Biren Singh to check the illegal influx.
- **Political Instability in Myanmar:** The rising tide of violence across Myanmar after the military coup in 2021 has raised concerns regarding the shadowy effects it may demo into the northeastern states of India. The border being porous is not free of such infiltration.

### Recent Developments: Suspension of FMR

In February 2024, Union Home Minister Amit Shah announced the suspension of the FMR as part of efforts to secure India's borders and maintain demographic integrity. Key measures include:

- Erecting fences along the entire Indo-Myanmar border.
- Requiring visas for Myanmar nationals entering India.
- Enhanced surveillance through patrol pathways and integrated checkpoints.

### Way Forward:

To address both sides of the debate, a balanced approach is necessary:

- **Enhanced Regulation:** The FMR could be retained but with stricter controls on movement through biometric verification systems or limited entry points.
- **Community Engagement:** Consultations with tribal leaders on both sides can ensure that any policy changes account for their socio-economic needs.
- **Border Infrastructure:** Accelerate fencing projects while ensuring minimal disruption to tribal livelihoods.
- **Bilateral Cooperation:** Strengthen diplomatic ties with Myanmar for joint efforts against insurgency and smuggling.

### Conclusion

The Free Movement Regime between India and Myanmar was a unique feature aimed at fostering connectivity among border communities. However, its misuse by insurgents, smugglers, and illegal migrants has led to serious security challenges for India's northeastern states. While suspending or revoking the FMR appears necessary for safeguarding national interests, policymakers must ensure

that affected communities are not alienated in the process. A carefully calibrated approach balancing security concerns with cultural sensitivities is essential for sustainable border management.

**Source:** [The Hindu](#)

### UPSC Mains Practice Question

**Q. Critically analyze the Free Movement Regime (FMR) between India and Myanmar. Discuss its implications on security, economy, and people-to-people ties. Should India reconsider its approach? Justify your answer with relevant arguments. (250 words)**

## [2.38] India Ranks 2nd in Global Tea Exports

### Syllabus: Economy [GS Paper-3]

#### Context

India achieved a remarkable milestone in 2024 by surpassing Sri Lanka to become the world's second-largest tea exporter, according to data released by the Tea Board of India. This development marks a significant moment for the Indian tea industry, which has faced challenges in recent years but now stands poised for further growth.

#### Overview of India's Achievement

- **Export Volume:** India exported 254 million kilograms (Mkg) of tea in 2024, overtaking Sri Lanka and securing the second position globally. Kenya retained the top spot with over 500 Mkg of tea exports.
- **Revenue Generated:** The exports earned India ₹7,112 crore in revenue, reflecting a robust growth of 10% compared to previous years.
- **Historical Context:** This was India's second-best export performance, following its record of 256 Mkg in 2018. For years, Indian tea exports hovered around 200–225 Mkg annually, making this leap particularly noteworthy.

#### Key Factors Behind the Achievement

##### 1. Growth in Orthodox Tea Segment

- A significant portion of the export growth came from the orthodox tea segment, which is highly valued in international markets for its quality and flavor.
- Government schemes and incentives at both central and state levels have supported this segment's growth, enabling producers to expand their reach globally.

##### 2. Favorable Export Policies

- The Indian government introduced the export-friendly schemes to avail market access and reduce logistical handcuffs for tea exporters.
- This has also brought Indian tea into newer markets like Iraq, Turkey, and Jordan, simply displacing the Sri Lankan tea from its erstwhile destinations.

##### 3. Consistent Production Levels

- On average, India produces perch of 1,400 Mkg tea per year, most of which is derived from Assam and West Bengal. In 2024, Assam is known to have produced more than 650 Mkg,



making it India's largest tea-producing state that produces significantly sought-after robust black teas in the international market.

#### 4. Diversification of Export Destinations

- Indian tea had steadily gained in countries like Russia, the UAE, Germany, and Bangladesh. These have been a great part of driving demand for Indian teas.

#### Challenges Faced by the Industry

Despite this achievement, several challenges persist:

- **Competition from Kenya:** Kenya remains far ahead with over 500 Mkg of exports annually. Bridging this gap will require further innovation and expansion.
- **Geopolitical Uncertainties:** Global tensions and trade restrictions could impact export volumes negatively.
- **High Domestic Consumption:** Nearly 80% of India's tea production is consumed domestically, limiting the volume available for exports.

#### Economic and Social Implications

- **Economic Boost:** Increase in exports strengthens India's foreign reserves and boosts its standing in international trade. Revenues created support employment right through the tea value chain—from the plantation workers to exporters.
- **Regional Development:** Increased demand for Indian teas severely benefits the tea-growing states like Assam, West Bengal, Tamil Nadu, and Kerala. Infrastructure improvement, alongside government push, will continue to be a major engine for growth in these regions.
- **Global Recognition:** As the second-largest export producer, India has gained more strength as a key player in the world tea arena. The recognition will facilitate the entry of premium Indian teas into further international acceptance.

#### Future Prospects

- **New Markets:** The industry aims to be exploring new markets for further widening its export basket while consolidating its position in the existing ones.
- **Quality Conscious:** There would be increased investment in organic and specialty teas as global consumers are more inclined toward quality than quantity.
- **Production Target:** The Tea Board of India has set an ambitious target of reaching 300 Mkg in exports by 2030, a target that seems attainable under the present scenario.

#### Conclusion

India's rise to become the world's second-largest tea exporter is a testament to its robust production capabilities, strategic policies, and growing international demand for its high-quality teas. While challenges remain, this milestone provides a strong foundation for future growth. With continued government support and industry innovation, India is well-positioned to further strengthen its global footprint in the tea market.

Source: [The Times of India](#)

#### UPSC Prelims Practice Question

Q. With reference to global tea exports, consider the following statements:

1. India is the largest producer and exporter of tea in the world.
2. Assam and West Bengal account for the majority of India's tea production.

3. Sri Lanka and Kenya are among the top tea-exporting countries.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

Answer: (b) 2 and 3 only

## [2.39] Enhancing India's Deep-Sea Capabilities

### Syllabus: Environmental Conservation [GS Paper-3]

#### Context

India's vast coastline and maritime interests make the development of deep-sea capabilities a strategic necessity. With growing global competition, particularly from China, and the immense potential of ocean resources, India must prioritize advancements in this field to enhance its economic, technological, and security landscape.

#### Significance of Deep-Sea Exploration

##### Economic Potential:

- **Resource Extraction:** The ocean is a treasure trove of resources including rare earth metals, polymetallic nodules, gas hydrates, oil, and minerals. These resources are crucial for India's industrial growth and energy security.
- **Blue Economy:** Strengthening deep-sea capabilities will empower India's blue economy, which encompasses fisheries, aquaculture, tourism, and renewable energy.
- **Undersea Infrastructure:** Developing technologies for laying and maintaining undersea cables and pipelines is vital for modern communication systems and energy transport.

##### Scientific Advancements:

- **Oceanographic Research:** Deep-sea exploration contributes to understanding ocean biodiversity, climate change mitigation, and meteorological studies.
- **Marine Conservation:** Mapping the ocean floor and studying marine ecosystems help preserve biodiversity while ensuring sustainable resource utilization.

##### Strategic Security:

- **Maritime Domain Awareness:** With increasing threats such as China's deep-sea cable-cutting devices, India needs advanced underwater sensors and response mechanisms to safeguard its maritime interests.
- **Geopolitical Leverage:** Enhanced deep-sea capabilities will strengthen India's position in the Indian Ocean Region (IOR), countering China's dominance in underwater exploration.

#### India's Current Initiatives

##### Deep Ocean Mission (DOM)

Launched in 2018 under the Ministry of Earth Sciences, DOM aims to explore deep-sea resources for scientific and commercial purposes. Key components include:

- **Samudrayaan Mission:** India's first crewed deep-sea mission using the Matsya-6000 submersible capable of reaching depths of 6,000 meters.

- **Technological Innovations:** Development of titanium hulls for pressure resistance and self-floatation technology for emergency scenarios.

### Matsya-6000 Submersible

- Designed by the National Institute of Ocean Technology (NIOT), it can carry three crew members to extreme depths while withstanding immense underwater pressure.
- Equipped with advanced life-support systems and navigation technologies like acoustic positioning systems and sonar.

### Progress Achievements

- Successful wet testing of Matsya-6000 in 2025 marks a significant milestone.
- India is set to join an elite group of nations—China, the US, Russia, Japan, France—with crewed deep-sea exploration capabilities.

### Challenges in Deep-Sea Exploration

- **Technological Barriers:** Developing submersibles that can withstand extreme pressures at depths of 6,000 meters or more. Creating efficient underwater navigation systems in GPS-deprived environments.
- **Financial Constraints:** Deep-sea missions require substantial investments in research, development, and infrastructure.
- **Human Capital:** A shortage of skilled personnel in ocean sciences and engineering poses a challenge to scaling up operations.
- **Global Competition:** China leads the world in deep-sea exploration with submersibles like Fendouzhe, capable of reaching depths exceeding 10,000 meters. China's advancements in underwater military technology further emphasize the need for India to catch up.

### Why China's Lead Matters

China has completed over 50% of global manned deep-sea dives in recent years. Its submersibles like Fendouzhe have set records by reaching depths of 10,909 meters. Additionally:

- China has developed compact devices capable of severing undersea communication cables, a potential threat to global digital infrastructure.
- Such advancements underscore the strategic importance of dominating underwater domains.

### The Way Forward for India

- **Strengthening Research & Development:** Establish dedicated institutes for ocean sciences to foster innovation and skill development. Collaborate with global leaders like the US or Japan for technology transfer and joint research initiatives.
- **Enhancing Indigenous Capabilities:** Invest in indigenous technologies for submersibles, sensors, and underwater robotics. Incentivize private sector participation in deep-sea exploration projects.
- **Policy Reforms:** Formulate a robust framework for sustainable exploitation of marine resources. Strengthen international partnerships under UNCLOS (United Nations Convention on the Law of the Sea) to secure India's maritime rights.
- **Boosting Financial Support:** Allocate higher budgets for DOM to accelerate project timelines. Encourage public-private partnerships (PPPs) to share financial risks while leveraging expertise from multiple stakeholders.

### Conclusion

India's journey into the deep sea is not just about exploring uncharted territories but also about securing its future economic growth, technological self-reliance, and maritime dominance. With initiatives like Samudrayaan under DOM and strategic investments in research and infrastructure,

India can emerge as a global leader in deep-sea exploration while safeguarding its national interests against rising geopolitical challenges from nations like China.

**Source:** [The Indian Express](#)

**UPSC Prelims Practice Question**

**Q. Consider the following statements regarding India's deep-sea exploration:**

1. India's Samudrayaan Mission aims to send humans to a depth of 6,000 meters in the ocean.
2. Polymetallic nodules, found on the deep seabed, are a major source of rare earth elements.
3. The Deep Ocean Mission is implemented by the Indian Navy.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

**Answer:** (a) 1 and 2 only