

GS MAINS PROBABLES

PART 1

(Sept 2024 - May 2025)

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CULTURE

Buddhism as India's Soft Power

Context: The First Asian Buddhist Summit was recently organized in New Delhi by the Ministry of Culture in collaboration with the International Buddhist Confederation (IBC).

- The summit witnessed participation from 32 countries.
- Theme: "Role of Buddha Dhamma in Strengthening Asia"
- The event aligns with India's Act East Policy and Neighborhood First Policy, emphasizing collective, inclusive, and spiritual development across Asia.

What is Soft Power?

- Soft power refers to the **ability of a country to attract and influence others through its culture, values, and heritage, rather than coercion or economic inducements.**
- Buddhist art and architecture, both in ancient times through cultural exchanges and in the modern era, act as tools of diplomacy. They have become silent ambassadors of India's message of peace, compassion, and spiritual depth.

Ancient Foundations of Buddhist Soft Power

- The emergence of Buddhism in the 6th century BCE brought with structures like **stupas, viharas, and chaityas**. They were not merely religious buildings but also centers of learning and cross-cultural interaction.
- Sites such as Sanchi, Bharhut, and Amaravati featured elaborate carvings and narrative panels based on Jataka tales, making Buddhist ideals accessible to people and visitors from other lands.
- These artistic and architectural forms became templates for Buddhist sites across Asia, creating a recognizable cultural and spiritual link between India and countries like Sri Lanka, Myanmar, Thailand, Cambodia, China, and Japan.
- Nalanda and Takshashila attracted scholars from across Asia, promoting cultural exchange and intellectual diplomacy.
- Emperor Ashoka played a pivotal role in using Buddhist ideals for statecraft and international relations. His famous **rock edicts** preached non-violence, tolerance, and ethical governance.
- Ashoka's **dispatch of Buddhist emissaries to Sri Lanka, Central Asia, and Southeast Asia** sowed the seeds of a vast transnational Buddhist network.

India's Buddhist Cultural Links in the Ancient World

Central Asia & Gandhara	• Gandhara art blended Greco-Roman and Indian styles • Located on the Silk Route • Hosted major Buddhist monasteries • Symbol of early cultural globalization • Facilitated exchange of art, ideas, and religious practices
Southeast Asia	• Spread through Buddhist missionaries and Indian artisans • Influenced architecture like Borobudur (Indonesia) and Angkor Wat (Cambodia) • Created shared cultural and spiritual traditions • Deepened civilizational bonds with India

Modern Diplomacy Through Cultural Heritage

- Buddhism plays a central role in India's outreach to Southeast and East Asia under its **Act East Policy**. Countries such as **Thailand, Myanmar, Japan, Bhutan, and Sri Lanka**, which share a Buddhist cultural heritage, are engaged through cultural exchanges, relic tours, and academic cooperation. For instance, **India has gifted sacred Buddhist relics to Sri Lanka** and organized the **BIMSTEC Buddhist conclaves**, strengthening regional bonds.

- India promotes the **Buddhist Circuit** (including Bodh Gaya, Sarnath, and Nalanda) to attract pilgrims and tourists from Buddhist-majority countries like Thailand, Sri Lanka, and Japan.
- Hosting events such as the International Buddhist Conclave, Asian Buddhist Summit and reviving institutions like Nalanda University reaffirm India's role as the custodian of Buddhist heritage.
- Symbols like the Lion Capital of Ashoka (national emblem) and the Dharma Chakra (national flag) reinforce India's peaceful identity.

Strategic and Geopolitical Dimensions:

- India leverages its Buddhist legacy to strengthen cultural diplomacy and counter China's Belt and Road Initiative (BRI) narrative in Buddhist-majority nations like Bhutan, Myanmar, Sri Lanka, and Thailand.
- Initiatives such as the Nalanda University revival, Buddhist Circuit tourism, and India's respectful hosting of the Dalai Lama enhance its soft power.
- Collaborative efforts in Lumbini (Nepal) and restoration of Buddhist temples in Myanmar and Cambodia deepen India's regional engagement.

Buddhist art and architecture are central to India's soft power diplomacy, serving as enduring symbols of shared heritage and values that facilitate deeper diplomatic, economic, and cultural ties with Buddhist-majority nations across Asia. By promoting and preserving this heritage, India not only enhances its international standing but also reinforces its role as a leader in the Buddhist world.

Sufism in India

Context: The Jahan-e-Khusrau festival, recently addressed by Prime Minister Modi, celebrates the life and contributions of Amir Khusrau, a legendary figure in Indian history. As a Sufi poet, musician, and scholar, Khusrau's works reflect the core values of Sufism in India.

Sufism in India

- Sufism is the mystical branch of Islam, focusing on the inner, spiritual connection with God rather than just external rituals. In India, it took on a unique character by absorbing local customs and traditions.
- Sufism originated in the 7th century CE in the Middle East. It came to India in the 12th century and became especially popular during the 13th century.

Characteristics of Sufism

- **Deep Devotion and Love for God:** Sufism teaches that the most important path to God is through love and devotion. A Sufi views God as a beloved and the devotee as a lover. Like a person longing to be close to someone they deeply love, a Sufi longs to be united with God.
- **Expression Through Art:** Sufis express their devotion through poetry, music, and dance, which are seen as spiritual tools. These expressions are not just art forms but are considered acts of worship. Example: The whirling dance of the Sufi dervishes in Turkey is a form of meditative movement used to achieve closeness to God.
- **Inner Purity Over Outer Rituals:** While traditional Islamic practices emphasize external rituals like prayer and fasting, Sufis focus on inner purity i.e. cleansing the heart of pride, jealousy, and hatred.
- **Importance of a Spiritual Guide (Pir or Murshid):** A central part of Sufi practice is following a spiritual teacher, known as a Pir or Murshid, who helps guide the disciple toward spiritual awakening.
- **Simplicity and Humility:** Sufi saints lived simple and humble lives, often rejecting wealth, fame, and power. They believed that material things distract the soul from reaching God.
- **No Discrimination or Caste Barriers:** Sufism promotes equality among all human beings. It rejects the idea of caste or class differences. This inclusive message made Sufism very popular in India, especially among the poor and marginalized.
- **Use of Language of the People:** Sufis preached in languages that ordinary people understood, such as Persian, and later Urdu. This made their message more accessible to the common people.

- **Brotherhood and Sufi Orders:** Sufis often lived together in groups or orders, each guided by a leading saint. There were about 12 major Sufi orders, also known as Silsilas. These included famous ones like Chishti, Suhrawardi, and Qadiri.

Contribution of Sufism to Indian Culture

- **Religious Harmony and Social Integration:** Sufi saints such as Khwaja Moinuddin Chishti (Ajmer), Nizamuddin Auliya (Delhi), and Baba Farid (Punjab) created spiritual spaces where Hindus and Muslims prayed together, promoting **Ganga-Jamuni Tehzeeb (a composite Indo-Islamic culture)**.
- **Development of Indian Music:** Sufis used music as a form of devotion. Qawwali, a powerful form of Sufi music pioneered by Amir Khusrau, became deeply rooted in Indian cultural expression and continues to be performed across religions.
- **Language and Literature:** Sufi poets like Amir Khusrau played a key role in the development of Hindavi, a blend of Persian and local languages, which laid the foundation for Hindi and Urdu literature. Bedam Shah Warsi's "*Kulliyat-e-Bedam*" reflects themes of divine love, selflessness, and devotion to the Sufi master (Murshid).
- **Promotion of Vernacular Languages:** Sufi teachings were often written in regional languages like Punjabi, Bengali, and Awadhi, enriching local literary traditions and spreading spiritual messages across regions. Bulleh Shah wrote in Punjabi, was famous for his Kafis (short lyrical poems) like "*Bullah Ki Jaana Main Kaun*".
- **Architectural Heritage:** The dargahs (shrines) of Sufi saints became not only places of worship but also centers of art, culture, and charity. Their architecture reflects a mix of Persian and Indian styles, contributing to India's built heritage. E.g. Tomb of Salim Chishti in Fatehpur Sikri.

Limitations of Sufism in India

- **Limited Social Reform:** Sufis preached love and equality but did not actively challenge caste or social discrimination. Although Sufism spoke of spiritual equality, women had a marginal role in Sufi orders.
- **No Political Engagement:** By avoiding politics, Sufi order like Chishti missed the chance to influence broader institutional or state-level reforms.
- **Regional and Disjointed Reach:** Sufi influence remained localized, lacking a unified structure to create a widespread national movement.
- **Failure to Reform Orthodoxy:** Sufism did not replace or reform orthodox Islamic practices; traditional religious authorities remained dominant.
- **Drift into Ritualism:** Over time, Sufism adopted rituals and shrine-based practices, drifting away from its original focus on inner spirituality.

Their legacy, therefore, lies more in the realm of emotional unity and cultural synthesis than in structural reform, leaving behind a spiritual heritage that continues to inspire, but with clear limitations in social transformation.

Jyotirao and Savitribai Phule

Context: The Prime Minister Modi paid tribute to Savitribai Phule on her 194th birth anniversary
About the Phules

- **Jyotirao Phule** (1827–1890) was born in the Mali caste (a backward caste), and despite severe social obstacles, he gained a Western education. He was deeply influenced by thinkers like Thomas Paine and John Stuart Mill.
- **Savitribai Phule** (1831–1897) was born in Naigaon, Maharashtra, and became India's first female teacher, receiving formal training in Pune and Ahmednagar.
- Married at the age of 13, the couple became lifelong collaborators in their mission to eradicate social injustice.



Key Contributions

- **Pioneers of Education Reform**

- **First Girls' School (1848)** was opened in Pune at Bhidewada by the Phules with Savitribai as the first woman teacher. By 1851, they were running three schools for girls, and eventually established 18 schools.
- Schools also catered to children from Dalit and other marginalized communities, at a time when education was a Brahmin privilege.

- **Caste and Social Justice**

- **Satyashodhak Samaj (1873)** was founded by Jyotirao to promote the ideals of social equality, rationalism, and justice. Membership was open to all castes and religions, and it conducted inter-caste marriages without Brahmin priests.
- Phule's ideology attacked Brahminical supremacy, describing the caste system as a tool of exploitation by Aryan invaders.

- **Women's Rights and Welfare**

- The couple opposed child marriage, sati, and infanticide, which were rampant in 19th-century India. In 1853, they started the **Balhatya Pratibandhak Griha** (infanticide prevention center) for pregnant widows.
- In 1864, Savitribai opened a **home for destitute women**, one of the earliest of its kind in India. She is regarded as the "Mother of Indian Feminism" for her tireless work on women's issues.

- **Philosophy and Legacy**

- Advocated humanism, secularism, and equality as the basis of society.
- Viewed British rule as relatively liberal in comparison to Brahminical dominance, though Phule also critiqued colonial policies.
- Opposed the blind ritualism of Hindu scriptures, questioned the moral authority of the Vedas, and promoted scientific temper.
- Jyotirao was given the title "Mahatma" in 1888 by social activists in Mumbai.

Literary and Intellectual Contributions of the Phules		
Jyotirao Phule	<i>Gulamgiri (1873)</i>	Critique of Brahminical dominance and caste oppression.
	<i>Shetkaryacha Asud</i>	Highlighted the exploitation and suffering of farmers under social and economic systems.
Savitribai Phule	<i>Kavya Phule (1854)</i>	A poetry collection conveying powerful social reform messages.
	<i>Bavan Kashi Subodh Ratnakar (1892)</i>	Essays and writings focused on women's rights and social justice.

Legacy and Relevance Today

- Phule couple's lives are a testament to the power of education, moral courage, and reformist vision. In today's India, debates on caste discrimination, women's rights, and inclusive education continue to echo their concerns.

Their ideology of "Truth, Justice, and Equality for All" is a vital part of India's democratic and constitutional values.

Animal Cruelty vs Culture

Context: The Gauhati High Court has reinstated a ban on traditional buffalo and bulbul fights during Magh Bihu in Assam.

Cultural Practices Involving Animals

- **Religious Sacrifice:**

- **Animal sacrifice** is a longstanding tradition in various Indian religious and tribal communities, often performed as an act of devotion or to fulfill religious obligations.
- Such practices are deeply embedded in the cultural fabric and are seen by many as integral to faith and identity.
- Estimates suggest that around 3 crore sheep and goats are sacrificed annually in India,

- **Traditional Festivals and Entertainment:**

- **Jallikattu (Tamil Nadu):** Bull-taming sport during Pongal, symbolising Tamil pride and masculinity. Participants try to hold onto a running bull.

- **Kambala (Karnataka):** Buffalo races in muddy fields; buffaloes are whipped to run faster, popular among coastal farming communities.
- **Cow Trampling (Madhya Pradesh):** Villagers lie on the ground to let cows trample over them, believing it brings blessings and washes away sins.
- **Fox Darshan (Tamil Nadu):** Foxes are captured, paraded, and worshipped to bring good luck, often causing distress to the animals.
- **Bulbul Fights (Assam):** Songbird fights during Magh Bihu festival, now facing legal bans over cruelty concerns.
- **Cockfighting (Andhra Pradesh, Telangana, Assam):** Roosters are forced to fight, often to the death; practiced despite bans due to its popularity in rural festivals.
- **Elephant Parades (Kerala):** Elephants are elaborately decorated and paraded during temple festivals and special events, particularly in Kerala.

Legal and Ethical Framework

- **Constitutional Provisions:**
 - Article 48A directs the state to protect wildlife, while Article 51A(g) makes compassion toward living creatures a fundamental duty.
 - Article 29 protects citizens' rights to conserve their cultural heritage, creating a legal tension between animal welfare and cultural rights.
- **Prevention of Cruelty to Animals Act, 1960:** Aims to prevent unnecessary pain and suffering to animals, prohibiting acts like beating, overloading, and inhumane slaughter. It also regulates animal transport and establishes the Animal Welfare Board of India.

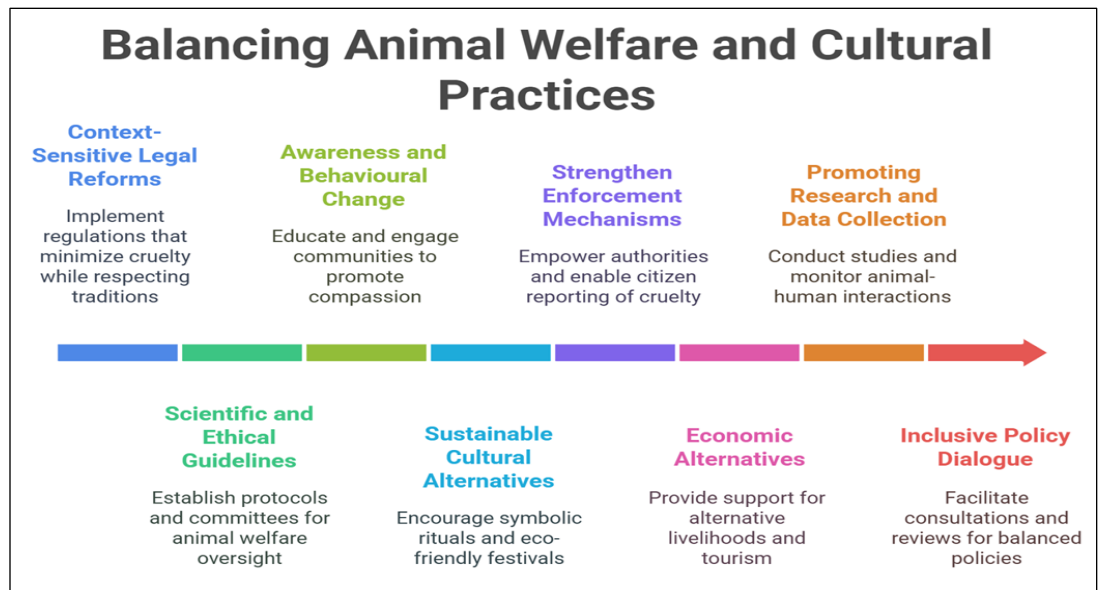
Judicial Balancing Act

- **2014 Supreme Court Ban:** In *Animal Welfare Board v. A. Nagaraja*, the SC banned Jallikattu and bullock cart racing, ruling they caused unnecessary pain and violated the PCA Act, 1960. The Court recognized that animals have a right not to be treated cruelly.
- **State Amendments (2017 Onwards):** Tamil Nadu, Karnataka, and Maharashtra amended laws to allow these events under regulation, citing cultural importance.
- **2023 Constitution Bench Verdict:** The SC upheld these state laws, stating they did not violate the Constitution. SC noted that cruelty had been significantly reduced under new rules.

Concerns related to use of Animals in Cultural Practices

- **Physical Harm and Cruelty:** Practices like Jallikattu (bull-taming), Kambala (buffalo racing), and cockfighting expose animals to stress, injuries, and death. Between 2008 and 2014, 43 humans and 4 bulls were killed in the jallikattu events.
- **Exploitation in Religious Rituals:** Elephants used in temple processions (e.g., Kerala's Thrissur Pooram) endure prolonged standing, loud noises, and restrictive chains, leading to chronic health issues. In the past six years, 154 captive elephants have died in Kerala.
- **Commercialization of Tradition:** Traditional practices are increasingly monetized, prioritizing spectacle over animal welfare. For example, camel fairs (Pushkar) and elephant parades attract tourism but often neglect humane treatment.
- **Weak Enforcement:** Despite bans on practices like cockfighting and bull racing, lax enforcement in rural areas allows traditions to persist. For instance, bulbul bird fights in Assam continue illegally during Magh Bihu.
- **Zoonotic Diseases:** Close contact with stressed or injured animals in crowded festivals increases disease transmission risks (e.g., avian flu, rabies).
- **Ecological Impact:** Overexploitation of species like snakes (Nag Panchami) and elephants disrupts local ecosystems and biodiversity.

India's cultural diversity is a source of national pride, but this must evolve with growing awareness of animal rights and ecological responsibility. A balanced approach—respecting traditions while ensuring compassion—will help uphold both constitutional duties and cultural heritage.

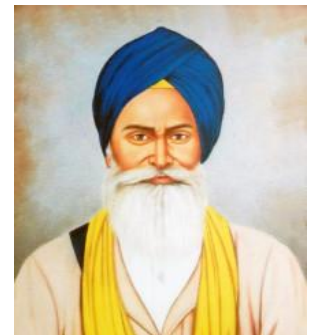


Prajamandal Movement

Context: January 20 marks the death anniversary of Sewa Singh Thikriwala, who led the Praja Mandal movement against the rulers of Punjab's erstwhile princely states.

About Praja Mandal Movement

- The Praja Mandal Movement was a significant part of the Indian independence struggle, emerging in the 1920s within the princely states of India. Unlike British-ruled territories, these regions were governed by local monarchs or feudal princes, often with the support or oversight of the British administration.
- The movement was primarily a **response to the autocratic and oppressive rule of these princes** and sought to secure democratic rights for the people living under their authority.



Main Objectives

- Demand for democratic rights and responsible government in princely states.
- Abolition of feudal exactions and restoration of civil liberties.
- Integration of princely states into a united and democratic India.

Nature of the Movement

- The movement involved both non-violent protests and, at times, confrontations that led to violence and repression by the rulers.
- It was closely linked with the broader Indian National Movement, adopting Gandhian methods such as non-cooperation, civil disobedience, and constructive programs like promoting khadi, cottage industries, and social reforms (e.g., agitation against untouchability).
- The movement created political awakening among the people, encouraging them to demand participation in governance and social equality.

Organizational Structure

- Various Praja Mandals (People's Associations) were formed in different princely states, such as Jaipur, Bundi, and Marwar in Rajasthan, and in the Garjat states of Orissa.
- The **All India States People's Conference** (established in 1927) and regional associations like the Hitvardhak Sabha and Akhil Bhore Sansthan Praja Sabha played a key role in coordinating efforts and linking local movements with the national struggle.

Major Events and Impact

- The first major agitation occurred in Nilgiri (Orissa) in 1938, where peasant demands led to brutal repression by the ruler, sparking further unrest across other states like Talcher, Dhenkanal, and Nayagarh.
- The movement in Orissa's Garjat states was particularly influential, shaping the demand for the merger of these states into the province of Orissa and contributing to the formation of Greater Orissa.
- In Rajasthan, leaders like Arjunlal Sethi, Jamnalal Bajaj, and Hiralal Shastri were prominent in organizing the Praja Mandals, which became centers for political education, social reform, and mass mobilization.
- The movement linked isolated peasant struggles, fostering unity and connecting them with the wider Indian freedom movement.

Legacy

- Breaking the isolation of the princely states and integrating their people into the mainstream nationalist movement.
- Laying the groundwork for democratic governance and social reforms in post-independence India.
- Accelerating the political awakening and eventual merger of princely states into the Indian Union after independence.

The Praja Mandal Movement was a grassroots democratic struggle that challenged both feudal and colonial authority, significantly contributing to the Indian independence movement and the shaping of modern India.

Kashi Tamil Sangamam

Context: The Kashi Tamil Sangamam (KTS) 3.0, a 10-day long event, was recently held in Varanasi, Uttar Pradesh.

About Kashi Tamil Sangamam

- The Kashi Tamil Sangamam is an annual event launched in 2022 to celebrate and rediscover these ancient links.
- Organized by the Ministry of Education, it brings thousands of Tamil delegates to Varanasi for immersive cultural and educational experiences.
- The event aims to foster unity in diversity, promote knowledge sharing, and highlight the shared heritage of North and South India, in line with the "Ek Bharat Shreshtha Bharat" initiative.
- Exhibitions, seminars, and cultural programs during the Sangamam highlight contributions from Tamil sages like Agasthyar and showcase traditional Tamil arts, literature, and cuisine.

Relations Between Kashi and Tamil Nadu

1. Spiritual and Religious Links

- **Kasi Viswanathar Temples in Tamil Nadu:** Inspired by the sacred Shiva temple in Kashi (Varanasi), many temples named Kasi Viswanathar were built across Tamil Nadu. A prominent example is the Kasi Viswanathar Temple in Tenkasi, built by King Parakrama Pandya to replicate the sanctity of Kashi for those who could not travel north.
- **Legends and Pilgrimages:** According to legend, King Parakrama Pandya brought a lingam from Kashi, which was later installed at Sivakasi when the sacred cow carrying it refused to move — seen as Lord Shiva's will.

2. Cultural and Educational Ties

- Historically, scholars in Tamil Nadu considered their education incomplete without a visit to Kashi, which was a major centre of learning.
- Sant Kumara Gurupara, a Tamil saint, established a spiritual presence in Kashi by consecrating shrines like Kedar Ghat and Vishvesvaralingam, and also composed the literary work Kashi Kalambagam.

4. Literary, Linguistic, and Trade Connections

- Literary works in both regions share themes of devotion and philosophy.

- The name "Kashi" appears in several villages across Tamil Nadu, and "Kashinath" is a popular name among Tamil people.
- Trade ties existed too, particularly in silk and textiles, connecting Banaras and Kanchipuram.

5. Pilgrimage Practices

- Pilgrims from Rameswaram would traditionally take a holy dip before journeying to Kashi, and carry back Ganga water for rituals, symbolising the sacred loop between the North and the South.

The ties between Kashi and Tamil Nadu are a living testimony to India's unity in diversity, a blend of shared faith, knowledge, tradition, and mutual reverence. Events like Kashi Tamil Sangamam are helping rediscover and re-strengthen these timeless bonds.

Konark Wheel Replicas at Rashtrapati Bhavan

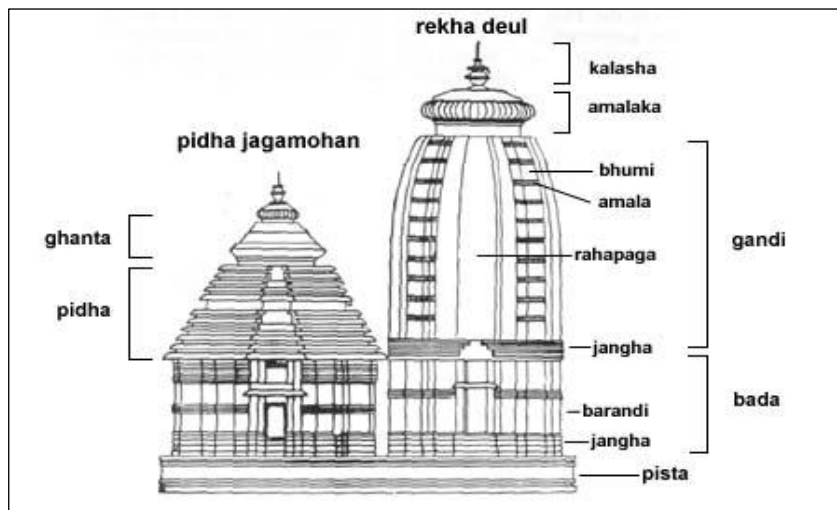
Context: Four replicas of the Konark Wheels, made of sandstone, have been installed at the Rashtrapati Bhavan Cultural Centre and Amrit Udyan.

Konark Sun Temple

- The Konark Sun Temple is a 13th-century CE temple dedicated to the Sun God, Surya, located in Konark on the coast of Odisha. It was built around 1250 CE by King Narasimhadeva I of the Eastern Ganga Dynasty.
- Declared a UNESCO World Heritage Site in 1984, the temple represents the pinnacle of Odishan temple architecture.
- It follows the Kalinga (Orissan) style of temple architecture, a regional variant of the broader Nagara style of Hindu temples.

About Kalinga Style of Temple Architecture

- The Kalinga style is a distinct regional form of Hindu temple architecture that flourished in the ancient Kalinga region—covering present-day Odisha and parts of northern Andhra Pradesh and West Bengal. As a **sub-style of the Nagara school of temple architecture**, it is noted for its refined aesthetics, advanced structural design, and deep spiritual symbolism.



Key Features:

- **Structural Composition:** A typical Kalinga temple comprises two major parts:
 - Deul (or Rekha Deula): The sanctum housing the presiding deity, marked by a towering curvilinear shikhara.
 - Jagamohana: The assembly hall or porch, often built in front of the sanctum, used for gatherings and rituals.
- **Elaborate Sculptural Decoration:** Temples are richly adorned with carvings depicting Deities and mythological narratives, Flora and fauna, Geometric and architectural motifs. The intricate ornamentation reflects a high degree of artistic skill.
- **Shikhara (Tower):** The spire rises almost vertically before curving inward at the top. It is typically crowned with an amalaka (ribbed circular stone) and a kalasha (finial), symbolizing fertility and divinity.

Types of Kalinga Temples:

- **Rekha Deula:** Tall and vertical tower, forming the sanctum of major deities.

- **Pidha Deula:** Stepped-pyramid roof, usually for the porch or assembly hall.
- **Khakhara Deula:** Semi-cylindrical vault, typically used in shrines for female deities.

Notable Examples:

- **Lingaraja Temple, Bhubaneswar:** A grand Shaivite temple showcasing the full evolution of Rekha and Pidha Deula forms.
- **Jagannath Temple, Puri:** A major pilgrimage site known for its monumental shikhara and religious prominence.
- **Sun Temple, Konark:** A UNESCO World Heritage Site, representing the artistic and engineering peak of Kalinga architecture; built in the form of a celestial chariot.

Significance:

- **Cultural Expression:** The temples serve as living embodiments of Odisha's religious devotion and cultural identity.
- **Architectural Legacy:** Kalinga architecture greatly influenced temple construction in Eastern India.
- **Tourism and Heritage Value:** These temples are integral to India's heritage tourism, drawing scholars, devotees, and tourists alike.

Rise in Mt. Everest

Context: Mount Everest's height may be rising due to erosion and **isostatic rebound** linked to the Arun River, located near the base of the Himalayas.

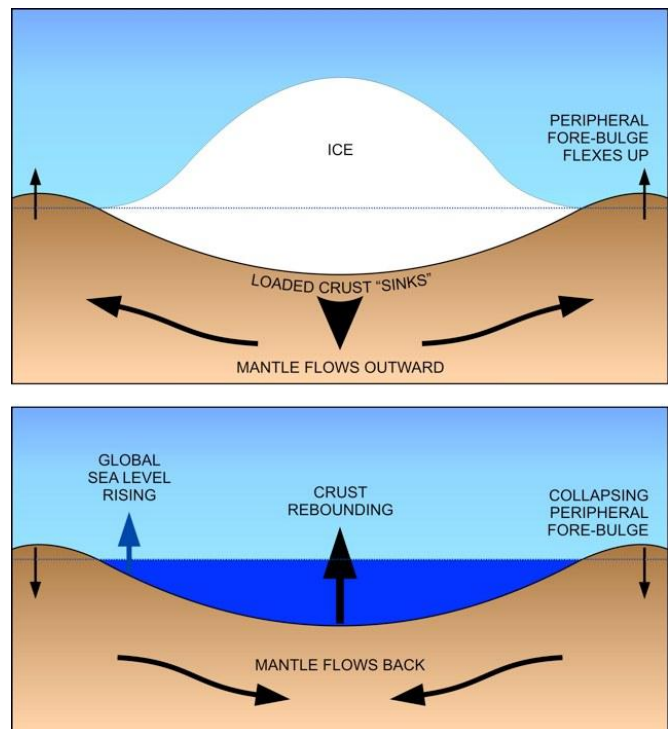
About Isostatic Rebound

- Isostatic rebound refers to the **Earth's crust adjusting to changes in surface weight** (such as retreating glaciers or erosion) by slowly rising or sinking.
- The Earth's crust floats over the semi-fluid asthenosphere. When weight is removed (e.g., due to river erosion or glacier melting), the crust rises over time.
- The Arun River's erosion near Mount Everest is reducing weight at the base of the Himalayas, causing a local isostatic uplift. Everest reportedly rises by up to 2 mm/year due to this process.

Risks Due to Isostatic Rebound in the Himalayas

- **Increased Seismic Activity:** The Himalayas lie in a tectonically active zone due to the Indian and Eurasian plate collision. Isostatic rebound adds stress to the Earth's crust, which can reactivate faults or trigger earthquakes. Example: Regions in Nepal and northern India face recurring seismic threats.
- **Alteration of River Systems:** Rising land can change river courses, leading to increased river erosion, flash floods in changed catchment areas, disruption of traditional water systems and agriculture
- **Glacial and Permafrost Instability:** Uplift may cause melting of glaciers due to surface cracking and warmer exposure. Glacial retreat, in turn, may lead to Glacial Lake Outburst Floods (GLOFs). Example: Chamoli disaster (2021) was linked to a similar chain of glacial instability.
- **Impacts on Infrastructure:** Uplifted areas can become prone to landslides, especially in steep Himalayan slopes. Roads, tunnels, and buildings constructed without accounting for geological movement face structural threats.
- **Socioeconomic Impacts:** Glacial melt and related hazards severely affect daily life and development in mountain regions. Frequent floods may displace communities and damage farmland, affecting livelihoods. Moreover, unplanned urban growth in landslide- or flood-prone areas increases disaster risks and complicates emergency response efforts.

As India aims for sustainable development in these ecologically sensitive regions, it is crucial to integrate geological assessments in planning, especially for infrastructure, disaster management, and climate adaptation strategies.

**Ken Betwa Link - Inter-Linking of Rivers Programme (ILR)**

Context: Prime Minister Modi laid the foundation stone for the Ken-Betwa river-linking project in Madhya Pradesh's Khajuraho.

Inter-Linking of Rivers Programme (ILR)

- The Inter-Linking of Rivers Programme (ILR) traces its origins back to the British Raj era when Sir Arthur Cotton, a British general and irrigation engineer, proposed the idea of connecting the Ganga and the Cauvery rivers for navigational purposes.

- The primary aim of ILR is to interconnect various surplus rivers across the country with deficient ones, facilitating the diversion of excess water from surplus regions to deficient ones.

About Ken Betwa Link Project (KBLP)	
About	Transfers water from Ken River to Betwa River (both Yamuna tributaries); includes a 221-km canal and a 2-km tunnel.
Purpose	To alleviate drought and water scarcity in Bundelkhand Promote regional development and future river-linking projects.
Dam Component	77-meter-high dam on Ken River at Daudhan (Chhatarpur district, Madhya Pradesh).
History	Conceptualised in the 1980s; stalled due to lack of water-sharing agreement. Revised deal signed on March 22, 2021 , reviving the project.
Project Phases	Phase-I: Daudhan Dam, tunnels, canal, and powerhouses. Phase-II: Lower Orr Dam, Bina Complex, Kotha Barrage.
Timeline	To be completed in 8 years (as per Jal Shakti Ministry).
Beneficiary Region	Bundelkhand Region across 13 districts in Madhya Pradesh and Uttar Pradesh .
Major Benefits	Irrigation: 10.62 lakh hectares (8.11 lakh ha in MP, 2.51 lakh ha in UP) Drinking Water: For ~62 lakh people Power: 103 MW hydro + 27 MW solar

Need for Inter-Linking of Rivers

- **Address Regional Imbalance:** By redirecting surplus rain and river water from one region to another, ILR seeks to mitigate this disparity. For example, the Ken Betwa Link Project will transfer surplus water from Ken River to the drought prone Bundelkhand Region.
- **Irrigation:** The KBLP has the potential to irrigate 1.06 million hectares of land and thus enable an increase in food grains production.
- **Flood Control:** Additionally, ILR is envisioned to provide relief from floods to some extent. For example, Proposal to link Kosi River (Sorrow of Bihar) with Mechi River to divert part of the Kosi River surplus water can mitigate the floods to an extent.
- **Hydropower Generation:** The water reservoirs can be used to generate hydropower, a clean and renewable source of energy. For instance, KBLP will also lead to generation of 103 MW of hydel power.
- **Year-round Navigation:** Utilizing interconnected rivers for navigation offers a cleaner, low carbon footprint mode of transportation infrastructure.

Issues Associated

- **Environmental Impact:** Construction of dams and canals can disrupt natural ecosystems, leading to loss of wetlands, biodiversity, and changes in water quality. For example, due to KBLP, nearly 4000 - 6000 hectares of forest land in the core tiger habitat of Panna Tiger Reserve will get submerged.
- **Social Impact:** Submergence of land due to dams can displace communities and affect livelihoods. For example, more than 6600 families will be affected due to land submergence and land acquisition related to the KBLP.
- **Economic Feasibility:** The ILR programme is estimated to be very expensive. The flagship KBLP costs around Rs. 44605 crores, which has been rising due to delays in project implementation. There are concerns about the cost-benefit ratio, considering the maintenance costs of the vast network.
- **Pairing of River Basins:** River pairs with similar rainfall patterns and geographical regions, like Ken-Betwa and Godavari-Krishna, may not benefit from interlinking due to synchronous dry or flooded conditions.
- **Diplomatic Considerations:** Projects like the Himalayan component may require collaboration with neighboring countries like Bhutan, potentially affecting international relations and necessitating diplomatic negotiations.

- **Political disputes:** ILR projects often involve the diversion of water from one river basin to another, which can impact downstream states and their water availability. Inter-state water sharing agreements are complex and politically sensitive, potentially leading to disputes over water allocation and usage.

To ensure sustainable water resource management under the Inter-Linking of Rivers Programme, stakeholders must conduct thorough environmental assessments, adopt sustainable practices, and ensure transparent, community-driven decision-making. Rigorous cost-benefit analyses, viable water management alternatives, and strong diplomatic and inter-state cooperation frameworks are essential to balance environmental, social, economic, and political concerns effectively.

Groundwater in India

Context: Annual Groundwater Quality Report 2024 was released by the Central Ground Water Board (CGWB), highlighting growing concerns over groundwater contamination in various parts of India.

Key Insights on Groundwater Quality in India (2024)

- **Groundwater Usage and Recharge:**
 - India is the top global user of groundwater, with the largest area irrigated by it.
 - Agriculture accounts for 87% of groundwater use; domestic consumption is around 11%.
- **Groundwater Exploitation Levels (by % extracted)**
 - **Safe (<70%):** Found in most states and UTs like Andhra Pradesh, Assam, Bihar, Maharashtra.
 - **Semi-Critical (70–90%):** Observed in Tamil Nadu, Uttar Pradesh, Puducherry, Chandigarh.
 - **Critical (90–100%):** No regions fall under this category.
 - **Over-Exploited (>100%):** Includes Punjab, Rajasthan, Haryana, Delhi, and Dadra & Nagar Haveli & Daman & Diu.

Central Institutions for Groundwater Management in India	
Central Water Commission (CWC)	Plans and coordinates national schemes for conserving and using water resources. Works with state governments and monitors water quality.
Central Ground Water Board (CGWB)	Develops and shares techniques for sustainable groundwater use. Monitors and assesses groundwater levels and supports policy implementation.
Central Ground Water Authority (CGWA)	Set up under the Environment (Protection) Act, 1986. Regulates and controls groundwater usage, can impose penalties and issue binding orders.
Central Pollution Control Board (CPCB)	Enforces the Water (Prevention and Control of Pollution) Act, 1974. Works to improve and maintain water quality, including groundwater.

Key Issues in India's Groundwater Scenario

- **Inadequate Groundwater Data and Monitoring:** India uses only 15,640 observation wells to monitor over 30 million groundwater structures. Lack of aquifer-level understanding hinders local management and planning.
- **Over-Extraction Due to Agriculture:** Nearly 87% of irrigation depends on groundwater. Cropping choices are often made without assessing water availability. MSPs promote water-intensive crops like rice and wheat, even in dry areas.
- **Inefficient Use of Water in Farming:** Traditional irrigation methods lead to wastage of water. There is limited use of modern technologies like drip and sprinkler irrigation. India uses almost twice as much water as China or the USA to grow the same crops.
- **Electricity Subsidies Encourage Overuse:** Cheap or free electricity in many states encourages excessive pumping of groundwater. Flat-rate tariffs (not linked to actual use) make water extraction cheap and unchecked.

Annual Groundwater Quality Report 2024

Key Highlights

- Groundwater type: Mostly **Calcium-Bicarbonate**
- **81% samples fit for irrigation**

Major Contaminants

- **Nitrate:** Found in 440 districts at Over 45 mg/L (above WHO/BIS safe limit)
- **Fluoride:** High in Rajasthan, Haryana, Karnataka, AP, Telangana
- **Arsenic:** Above 10 ppb in Ganga-Brahmaputra floodplains; States affected: Bihar, West Bengal, Assam
- **Uranium:** Found >100 ppb in: Rajasthan (42%), Punjab (30%) of high-uranium samples

- **Poor Water Quality and Pollution:** Groundwater faces increasing contamination from arsenic, nitrate, and salinity. Real-time pollution monitoring of contaminants is absent.

Steps Taken for Groundwater Management

- **Atal Bhujal Yojana (ATAL JAL):** Promotes community-based groundwater management in stressed Gram Panchayats across 7 states.
- **Jal Shakti Abhiyan:** Focuses on water conservation and rainwater harvesting; expanded nationwide under "Catch the Rain" in 2021.
- **Mission Amrit Sarovar (2022):** Aims to build/revive 75 water bodies in each district for harvesting and conservation.
- **Bhu-Neer Portal:** Shares legal and regulatory details on groundwater extraction across states and at the national level.
- **Model Groundwater Bill:** Suggested for states/UTs to regulate groundwater extraction.

India needs institutional reforms like forming a National Water Commission by merging CWC and CGWB for integrated water governance. Sustainable practices such as crop diversification, drip irrigation, rainwater harvesting (e.g., Rajasthan's Johads), and artificial recharge are essential to ensure long-term water security.

Dam Safety and NDSA

Context: The Supreme Court has asked a panel led by the National Dam Safety Authority (NDSA) to examine Tamil Nadu's concerns over Kerala's upkeep of the 125-year-old Mullaperiyar Dam.

About the National Dam Safety Authority (NDSA)

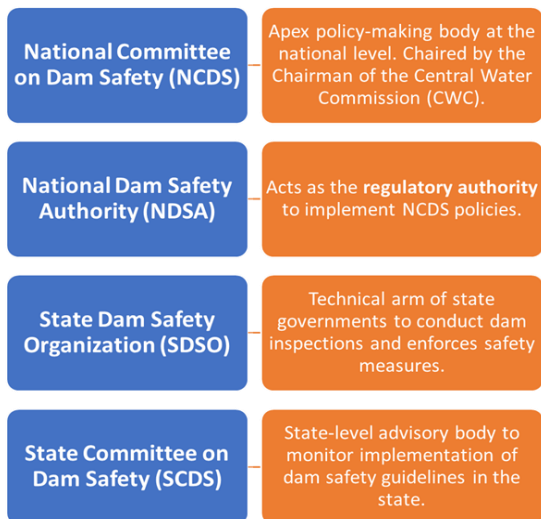
- Established under the Dam Safety Act, 2021, the NDSA came into effect in 2022.
- Headquartered in New Delhi, it is part of a 4-tier institutional mechanism for dam safety in India.
- The Authority aims to ensure dam safety, prevent dam-related disasters, and resolve inter-state disputes over dam operations.
- **Functions & Responsibilities of NDSA**
 - Regulates and inspects dams to ensure structural and operational safety.
 - Resolves disputes between state agencies (SDSOs) or between an SDSO and a dam owner.
 - Promotes public awareness about dam safety through education and outreach.
 - Ensures emergency response plans are in place for disasters or unexpected failures.
- **Structure and Leadership:** Led by a Chairman, NDSA is supported by five domain-specific members overseeing: Policy & Research, Technical, Regulation, Disaster & Resilience Administration & Finance.

Dams in India

- India has 5,745 large dams (as per the Central Water Commission); 5,334 completed, 411 under construction.
- India ranks third globally in number of dams, after the USA and China.

Challenges in Dam Safety

- **Aging Infrastructure:** According to the Jal Shakti ministry, 80% of India's large dams are over 25 years old, and 234 are over 100 years old. Dams in India are designed for approximately 100 years of useful age.
- **Non-Compliance with Regulations:** The Himachal Pradesh government recently served notices to 21 hydroelectric projects, finding them guilty of non-compliance with the DSA. The Gandhi Sagar Dam in Madhya Pradesh has been breached several times in recent years, causing flooding in downstream areas, despite warnings and recommendations.



- **Seismic Risks:** Dam systems in the Himalayas, like the Tehri Dam, face seismic risks due to the region's active tectonic movements since they are located in Seismic Zone III and IV.
- **Flooding:** Flooding has been responsible for 44% of dam failures in India. India's concentrated annual rainfall patterns, as opposed to distributed rainfall, increase the vulnerability of dams
- **Pattern of Neglect:** The recurring frequency and scale of dam disasters suggest a systemic pattern of neglect in dam safety measures. India has reported 36 dam failures till 2019, but not all of them have been properly analysed.
- **Lack of Periodic Review:** Periodic reviews are either infrequent or their findings are not readily available to the public, exacerbating transparency issues.

Government Initiatives for Dam Safety

- **Dam Rehabilitation and Improvement Project (DRIP):** Launched in 2012 with World Bank support, DRIP improves dam safety and operations. Phases II & III cover 736 dams across 19 states.
- **Dam Health and Rehabilitation Monitoring Application (DHARMA):** A web-based tool to collect and monitor dam data, aiding in rehabilitation planning and safety management.

Way Forward

- Environmental factors must be central to dam safety checks, with regular inspections by state authorities.
- Preventive actions are vital, as no penalty can undo the loss caused by dam failures.
- Climate change demands proactive, long-term planning for water and dam safety.
- Safety norms should be uniform yet adaptable to local climate and catchment conditions.
- Decommissioning old dams should be prioritized along with building new ones.
- A central authority is needed to resolve interstate dam disputes, such as the Mullaperiyar issue between Kerala and Tamil Nadu.

Mangroves

Context: The 32.78ha of Guneri village in Lakhtar tehsil of Kutch district, which is a natural inland mangrove site, has been declared as the first Biodiversity Heritage Site (BHS) of Gujarat.

Inland Mangroves

- Inland mangroves are rare ecosystems found away from coastal shorelines—typically along riverbanks, estuaries, or isolated inland water bodies.
- They grow in non-tidal areas and depend on groundwater or subsurface saline sources, unlike coastal mangroves that rely on tidal seawater.
- These ecosystems are extremely rare, with only eight known inland mangrove sites globally.
- Guneri in Gujarat is the last remaining inland mangrove site in India.

About Guneri Mangrove Site

- Situated in the Kachchh district of Gujarat, about 45 km from the Arabian Sea and 4 km from Kori Creek—yet completely isolated from tidal influence.
- Spread across a flat, forest-like terrain without sludge deposits. Maintains its mangrove population despite being cut off from the sea.

What are Mangroves?

- Mangroves are a **group of shrubs and trees that thrive in coastal saline or brackish water**, primarily in tropical and subtropical regions near the equator.
- They are **uniquely adapted to survive in harsh environments** characterized by salty, oxygen-poor, and waterlogged soils—conditions that would kill most other plants.
- Covering about 150,000 sq km globally, they are found along tropical and subtropical coastlines and support around 15% of the world's shorelines.

Significance of Mangroves

- **Biodiversity Conservation:** Mangroves serve as critical habitats and breeding grounds for over 1,500 species of animals and plants. They act as nurseries for commercially important fish, crabs, and shellfish, supporting local fisheries and global seafood supplies.
- **Climate Change Mitigation:** Mangroves are powerful carbon sinks, storing up to five times more carbon per hectare than tropical forests. Globally, they hold ~21 billion tonnes of blue carbon.
- **Protection from Coastal Hazards:** Mangroves act as natural shields, reducing erosion and storm damage. During Cyclone Dana in Odisha, Bhitarkanika's dense mangrove cover significantly minimized destruction.
- **Water Quality Improvement:** Mangrove roots filter pollutants, trap sediments, and block contaminants from reaching coral reefs and seagrass beds. This helps maintain cleaner coastal waters and improves the health of marine ecosystems.
- **Support for Livelihoods:** Millions rely on mangroves for fishing, fuelwood, honey, and medicinal plants. Mangroves support nearly 800 billion young fish, prawns, bivalves, and crabs annually.
- **Socio-economic and Cultural Importance:** Mangroves support ecotourism and recreation, contributing to local and national economies. Many indigenous and coastal communities value mangroves for their cultural and traditional uses.

Threats to Mangroves

1. Human-Induced Threats

- **Aquaculture:** Large patches of mangroves are cleared to set up shrimp and fish farms, especially along tropical coasts.
- **Rice Cultivation:** Wetland areas are converted into paddy fields, leading to the destruction of native mangrove habitats.
- **Oil Palm Plantations:** Expanding palm oil cultivation results in the clearing of mangrove forests, especially in Southeast Asia.
- **Direct Settlement:** Coastal mangroves are destroyed to build houses, roads, ports, and other infrastructure.
- **Indirect Settlement:** Human-induced changes such as landfills or nearby construction disrupt and degrade mangrove ecosystems.
- **Wood Extraction:** Mangrove trees are cut down for timber, firewood, and charcoal, reducing forest density and cover.
- **Pollution and Oil Spills:** In regions like the Niger Delta, repeated oil leaks from pipelines have severely damaged mangrove ecosystems, with very slow or no recovery.

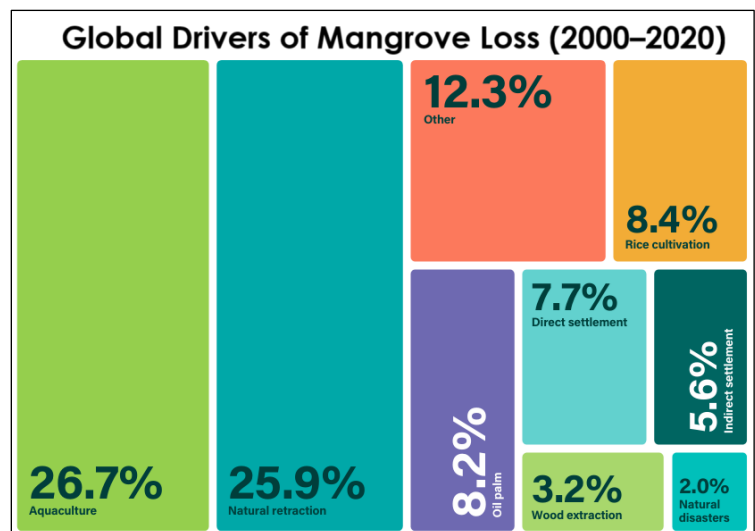
2. Natural Causes

- **Natural Retraction:** Mangroves retreat naturally due to changes in river flow, reduced sediment supply, sea-level rise, and coastal erosion.
- **Natural Disasters:** Cyclones, storms, and flooding can uproot and damage mangrove trees, although many mangrove species can regenerate over time.

Key Initiatives for Mangrove Conservation

1. Government Initiatives in India

- **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI):** Aims to restore 540 km² of mangroves across 9 states/UTs, promoting carbon capture and biodiversity.



- **National Coastal Mission:** Supports conservation of mangroves and coral reefs through annual Management Action Plans by the Environment Ministry.
- **Regulatory Frameworks:** Mangroves are legally protected under CRZ Notification, Forest and Environment Acts, and Biodiversity laws.

2. Global and Collaborative Efforts

- **Mangrove Breakthrough (2024):** Seeks \$4 billion to protect 15 million hectares, restore ecosystems, and support climate goals by 2030.
- **WWF's Mangroves Project:** Protects 2.47 million acres in 4 countries, enhancing resilience and carbon storage with Bezos Earth Fund support.

Strengthening legal frameworks, promoting ecological restoration, and connecting mangrove belts with terrestrial forests are essential steps for holistic protection. Most importantly, coordinated international efforts aligned with the UN Decade for Ecosystem Restoration (2021–2030) must be prioritized to secure the future of mangroves as vital ecological shields and livelihood providers.

Atlantic Circumpolar Current

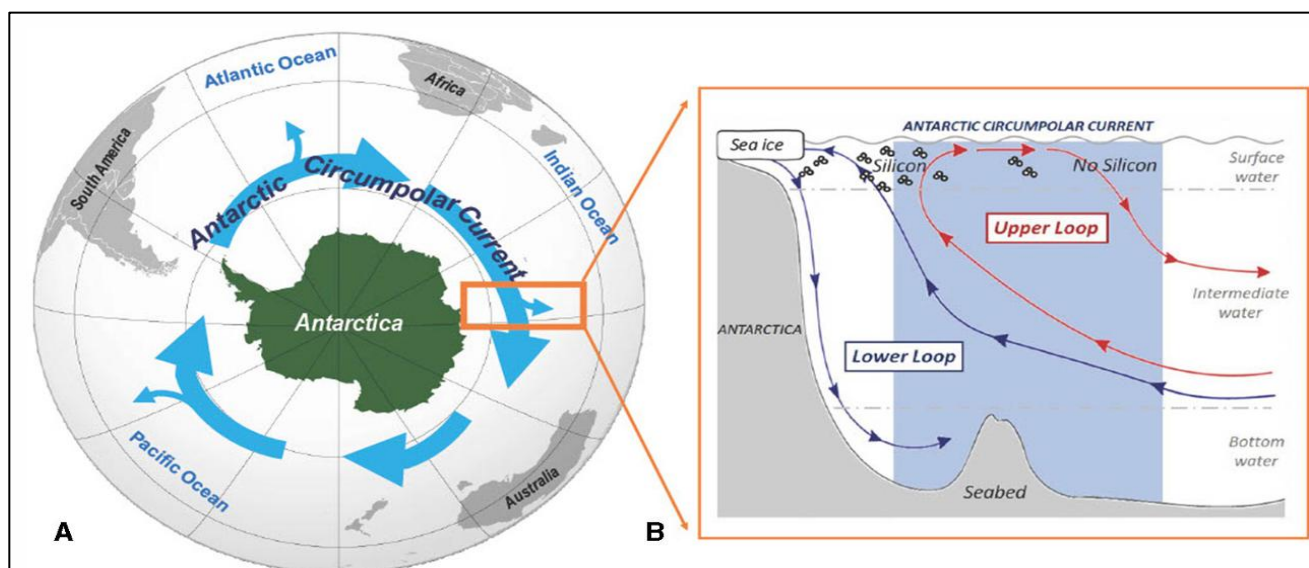
Context: A study by the University of Melbourne warns that the Antarctic Circumpolar Current (ACC) may slow down by 20% by 2050 due to global warming. This weakening could destabilize Antarctic ice shelves, increasing the risk of sea-level rise worldwide.

What is the Antarctic Circumpolar Current (ACC)?

- The ACC is the world's largest and strongest ocean current system, encircling Antarctica and flowing continuously from west to east.
- It is unique in that it is the only ocean current to flow completely around the globe without being blocked by any landmass, connecting the Atlantic, Pacific, and Indian Oceans.

Key Characteristics:

- **Direction and Extent:** The ACC flows clockwise (as seen from the South Pole) around Antarctica, stretching from the surface to the ocean floor and reaching widths of up to 120 miles.
- **Volume and Strength:** It moves 130–182 million cubic meters of water per second (Sverdrups), over 100 times the combined flow of all the world's rivers.
- **Driving Forces:** Powered mainly by strong westerly winds and contrasts in temperature and salinity between polar and subtropical waters.
- **Path and Variability:** Influenced by seafloor shape, prevailing winds, and oceanic fronts—sharp boundaries between water masses with differing temperatures and densities.



Ecological and Climatic Importance of ACC:

- **Thermal Barrier:** The ACC acts as a barrier, keeping the cold Antarctic waters separated from the warmer subantarctic waters. This helps maintain Antarctica's massive ice sheets by preventing warm water from reaching the continent.
- **Nutrient Transport:** The current is associated with the Antarctic Convergence, a zone where nutrient-rich waters upwell, supporting abundant marine life such as phytoplankton, krill, fish, and larger animals like whales and penguins.
- **Global Circulation:** The ACC is a central component of the global ocean conveyor belt, facilitating the exchange of water, heat, and carbon dioxide between ocean basins and playing a crucial role in regulating Earth's climate.

Reasons for ACC Slowdown

- **Melting Antarctic Ice and Freshwater Influx:** Melting ice releases cold freshwater into the Southern Ocean, reducing salinity and disrupting density-driven convection that powers the ACC, slowing the current's circulation.
- **Ocean Stratification:** Freshwater's lower density prevents normal sinking and vertical mixing, weakening the ACC. This allows warmer waters to reach Antarctica, accelerating ice melt in a dangerous **feedback loop**.
- **Weakening Westerly Winds:** Westerly winds, the main surface drivers of the ACC, are shifting poleward and weakening due to climate change, reducing the energy available to sustain the current's flow.

Impact of ACC Slowdown

- **Weakened Heat and Carbon Absorption:** The ACC helps oceans absorb heat and carbon dioxide from the atmosphere. A weaker ACC would reduce this ability, speeding up global warming and increasing climate extremes worldwide.
- **Faster Sea Level Rise:** Slower ACC circulation allows warm water to reach Antarctica's ice shelves, increasing their melting. This adds more freshwater, which further slows the current—causing sea levels to rise faster.
- **Threat to Marine Ecosystems:** The ACC protects Antarctica from invasive species. A slowdown may let species like kelp or shrimp enter and disturb the native food web, endangering penguins and other wildlife.
- **Disruption of Global Climate Patterns:** The ACC connects the world's oceans. If it slows, it can disrupt heat and carbon movement across the globe, leading to unpredictable climate shifts and extreme weather events.

India studies the ACC through its research stations in Antarctica—Bharati and Maitri. Given ACC's central role in maintaining Earth's climate balance, urgent global efforts are needed to reduce greenhouse gas emissions, strengthen climate resilience, and protect the vital functions of this powerful ocean current. Safeguarding the ACC is essential for ensuring long-term planetary stability.

POLITY AND GOVERNANCE

Indian Constitution

Right to Unionize

Context: Samsung workers in Tamil Nadu went on a strike in September, 2024, demanding union recognition and better wages-asserting their right to unionise and bargain collectively.

What is Right to Unionize (Right to Form Trade Unions)?

- The Supreme Court, in the ***B.R. Singh vs Union of India (1989)*** case, confirmed that forming unions is a **fundamental right under Article 19(1)(c)** of the Constitution.
- **Restrictions** on this right under Article 19(4) can only be imposed if public order, morality, or national integrity is at risk-and must be reasonable, not arbitrary.
- The Court emphasized that trade unions are vital for representing workers' grievances, and the **government has a duty to register them under the Trade Unions Act, 1926.**
- Registration gives unions legal protection from certain civil and criminal actions.
- Even seven members can register a union if they meet the conditions in Section 4 of the Act.

Collective Bargaining: Meaning and Legal Status

- The Madras High Court, in ***Rangaswami vs Registrar of Trade Unions***, explained that the Trade Unions Act aims to support collective bargaining-a process where workers and employers negotiate wages and work conditions.
- The International Labour Organization (ILO) defines **collective bargaining as a right that balances power between employers and employees.**
- In India, this process is supported by the **Industrial Disputes Act, 1947.**
- If talks fail, the government can send the dispute to a conciliation officer, labour court, or industrial tribunal. Refusing to negotiate in good faith is considered an unfair labour practice.

Cases Related to Collective Bargaining

- ***Karnal Leather Karmchari vs Liberty Footwear (1989)***: The Supreme Court underlined Collective Bargaining's importance in industrial relations.
- ***Ram Prasad Vishwakarma vs Chairman, Industrial Tribunal (1960)***: The Court noted how collective bargaining empowered workers who were previously at a disadvantage.

Right to Strike: Legally Recognized but Regulated

- The right to strike is protected under the **Industrial Disputes Act, 1947**, but it is **not an absolute right** and is subject to several restrictions.
- Section 22 of the Act requires workers to:
 - Give employers at least 6 weeks' notice before striking
 - Avoid striking during conciliation or within 7 days after such talks.
- The Supreme Court considers strikes a form of protest, including go-slow, sit-ins, or work-to-rule tactics.
- Strikes are seen by the ILO as part of the right to organize, but they are not absolute in India.
- The Supreme Court has clarified that **while unions have the right to exist, they must follow labour laws and procedures.**

India's constitutional and legal framework provides strong support for the formation and functioning of trade unions. While the right is not absolute, the balance between individual liberty and public interest ensures democratic representation in the workplace. As labour reforms evolve, it is essential to strengthen trade unions' autonomy while maintaining industrial harmony.

Vice President of India

Context: The Opposition submitted a no-confidence motion against Vice-President Jagdeep Dhankhar, alleging biased conduct in managing the proceedings of the House.

Role and Constitutional Position of Vice President of India

- The Vice President of India is the second-highest constitutional office in the country, ranking just below the President.
- The Vice President serves as the **ex officio Chairman of the Rajya Sabha** (the upper house of Parliament).
- The Vice President is also first in the line of succession to the presidency and discharges the functions of the President in case of resignation, removal, death, impeachment, or inability of the President to perform their duties.

Election Process

- The Vice President is elected indirectly by an electoral college consisting of all members (elected and nominated) of both Houses of Parliament (Lok Sabha and Rajya Sabha).
- The election uses a system of proportional representation by means of a single transferable vote and is conducted by secret ballot.
- Members of state legislative assemblies do not participate in this election.

Term and Removal

- The Vice President holds office for a term of five years but can continue until a successor assumes office. The Vice President can be re-elected any number of times.
- The office may be vacated earlier by resignation, removal, or death.
- Removal requires a resolution passed by an effective majority in the Rajya Sabha and agreed to by the Lok Sabha.

Duties and Power: The Vice-President of India performs two key roles:

1. Chairman of Rajya Sabha (Ex-officio Role):

- As the ex-officio Chairman of the Rajya Sabha, the Vice-President presides over its sessions and exercises powers similar to those of the Lok Sabha Speaker.
- This role is comparable to the U.S. Vice President, who presides over the Senate.
- Unlike ordinary members, the Chairman does not vote in the first instance on any matter in the Rajya Sabha. However, he can cast a tie-breaking vote in case of a deadlock.
- Under the Tenth Schedule, the Chairman determines questions of disqualification of members on grounds of defection.
- The role requires balancing political interests, managing disruptions, and upholding impartiality, especially during contentious debates or legislative deadlocks.

2. Acting as President:

- The Vice-President steps in as the acting President when the office of the President falls vacant due to resignation, removal, death, or any other reason.
- In such cases, he can serve as acting President for a maximum of six months, during which a new President must be elected.
- Additionally, if the sitting President is temporarily unable to fulfill their duties—due to illness, absence, or other reasons—the Vice-President discharges the President's responsibilities during that time.
- While acting as President, the Vice-President does not perform the duties of the Rajya Sabha Chairman. During this period, those responsibilities are handled by the Deputy Chairman of Rajya Sabha.

Criticism of the Office of Vice President of India

- **Largely Ceremonial Role:** The Vice President's duties are mostly limited unless the President is unable to perform their functions. Critics argue that the role lacks executive power in decision-making.

- **Limited Involvement in Governance:** Unlike the President, the Vice President has no real administrative responsibilities. This often leads to questions about the relevance and utility of the office beyond being a standby to the President.
- **Partisan Conduct in Rajya Sabha:** As Rajya Sabha Chairperson, neutrality is expected. Yet, some Vice Presidents have shown bias during debates, especially in politically tense sessions. Example: Accusations of favoring the ruling party during heated discussions.
- **Indirect Election Process:** The Vice President is elected by MPs (Members of Parliament), not by the people. Critics feel this limits the democratic legitimacy of the office, as it doesn't reflect the will of the broader population.
- **Underutilization of Potential:** The Constitution allows the Vice President to act as President during vacancies or absence. However, there is no defined role during normal times, leading to underuse of the Vice President's experience and capability.

The Vice President, as Chairman of the Rajya Sabha, is pivotal to the smooth functioning and integrity of the Upper House. By upholding constitutional values, maintaining order, and facilitating bipartisan debate, the Chairman ensures the Rajya Sabha remains an effective federal chamber in India's parliamentary democracy.

Uniform Civil Code

Context: The Uttarakhand Assembly implemented the Uniform Civil Code (UCC) Act, making it the first state in independent India to propose a common personal law, regardless of religion.

What is Uniform Civil Code (UCC)?

- A Uniform Civil Code (UCC) aims to unify the diverse personal laws currently based on religious affiliations into a single law governing personal matters such as marriage, divorce, adoption, inheritance, and succession for all citizens, regardless of religion.
- Its goal is to ensure consistency in laws across communities and within each community, thereby advancing equality in rights between men and women.
- Article 44 (DPSP) of the Indian Constitution directs the state to secure a uniform civil code for the citizens throughout the country.

Current Status of Personal Laws in India

- Personal law subjects like marriage, divorce, and inheritance fall under the **Concurrent List of the Constitution**, allowing both Parliament and state legislatures to enact laws on these matters.
- **Hindu Personal Laws:** In 1956, Parliament codified Hindu personal laws into four parts. For these laws, "Hindu" also includes Sikhs, Jains, and Buddhists.
- **Muslim Personal Laws:** Muslim personal laws are based on religious texts and are not codified comprehensively. However, specific aspects are recognized in: The Shariat Application Act, 1937, The Dissolution of Muslim Marriages Act, 1939, The Muslim Women (Protection of Rights on Marriage) Act, 2019.
- **Other Religious Personal Laws:** Christians, Zoroastrians, and Jews are governed by their respective personal laws.

Need of UCC

- **Inconsistency with Other Laws:** The UCC promotes equality by removing discriminatory practices in personal laws. For instance, some Islamic laws historically allowed marriage after puberty (around age 15), clashing with constitutional rights like the Right to Education.
- **National Integration:** UCC fosters unity by separating religion from personal law. In Shah Bano (1985), the Supreme Court highlighted the need to eliminate conflicting legal loyalties for greater harmony. This could encourage religious communities to reform age-old personal laws in line with modernizing tendencies, promoting national integration.
- **Gender Justice:** Personal laws often discriminate against women—for example, unequal inheritance rights in Islam or denial of coparcenary rights in Hindu Mitakshara law. UCC aims to eliminate such inequalities.

- **Simplification of Laws:** With multiple personal laws, the current legal system is complex. A UCC would streamline the legal framework and help reduce the burden on the judiciary.
- **Progressive Jurisprudence:** The UCC represents the progressive jurisprudence exercised by the Supreme Court in promoting gender and inter-religious equality. For instance, in the Shah Bano (1985), the SC allowed maintenance for a divorced woman, and in the Shayara Bano (2017), the SC banned the discriminatory practice of triple talaq which are otherwise not allowed as per the Muslim Personal laws.
- **Fulfillment of Constitutional Mandate:** It is argued that working towards a UCC is a constitutional mandate as prescribed by Article 44 of the Directive Principles of State Policy (DPSP). This would ensure equality before the law for all citizens, regardless of religion, class, caste, or gender.

Supreme Court Rulings Related to UCC		
Shah Bano Case	1985	The Supreme Court ruled that a Muslim woman has the right to maintenance from her husband under Section 125 of the CrPC after being given triple talaq. It recommended a common civil code to resolve conflicting laws.
Sarla Mudgal Case	1995	The court held that a Hindu marriage can only be dissolved under the Hindu Marriage Act, 1955. Conversion to Islam and subsequent remarriage does not dissolve a Hindu marriage. The SC called for the implementation of a Uniform Civil Code.
John Vallamottam Case	2003	The SC urged Parliament to introduce UCC while striking down Section 118(7) of the Indian Succession Act, which imposed unreasonable restrictions on Christians donating property for religious or charitable purposes by will.
Shayara Bano Case	2017	Based on the practice of triple talaq, the SC concluded that the Constitution requires the State to provide a UCC to address and alleviate such issues.
Joseph Shine vs. Union of India	2018	The SC struck down Section 497 (adultery) of the Indian Penal Code for violating Articles 14, 15, and 21. It emphasized the need for gender-neutral laws and the enactment of a UCC to address inconsistencies in personal laws.
Paulo Coutinho vs. Maria Luiza Valentina Pereira Case	2019	The SC strongly advocated for UCC and criticized the Centre for its inaction despite judicial recommendations.
PIL on UCC Committees	2023	The Supreme Court upheld the constitutional jurisdiction of states to establish committees (under Article 162 of the Constitution) to examine the implementation of UCC, citing examples of Uttarakhand and Gujarat.

Challenges Faced in Implementation

- **Diverse Community-Based Rights:** Personal laws reflect religious diversity, making it difficult to frame one law that respects all faith-based principles on social matters like marriage and inheritance.
- **Contradictory Constitutional Provisions:** UCC can be seen as contradictory to Article 29 which protects the right of communities to conserve their culture. Implementing a uniform law could infringe upon this fundamental right, as practices related to marriage, divorce, and inheritance are often integral to cultural identity.
- **Potential for Communal Politics:** Introducing a UCC could lead to unintended consequences, with those in power potentially using it for their own propaganda, disrupting the social lives of all communities.
- **Sensitivity of the Issue:** The issue of a UCC is politically sensitive due to its potential to affect religious sentiments and cultural practices. Advocating for or against a UCC can influence voter sentiment and political alliances, making it a contentious issue.
- **Infringement of Religious Freedom:** A UCC might contradict certain religious beliefs and practices, leading to state interference in religious affairs and infringing on citizens' religious freedoms.
- **Political Resistance:** There is significant opposition from various communities, such as Tribals, who fear that a UCC would dilute their cultural and religious autonomy.

- **Law Commission's View:** The 21st Law Commission held that UCC is neither necessary nor desirable at this stage and discriminatory practices, prejudices, and stereotypes within a particular religion and its personal laws should be studied and amended.

The move towards a Uniform Civil Code represents a step towards fulfilling the constitutional mandate and realizing a more unified and equitable society. As India continues to evolve, balancing respect for religious diversity with the need for common legal standards will be crucial in successfully implementing the UCC.

Freedom of Speech

Context: The recent Supreme Court decision to grant interim protection from arrest to a podcaster in connection with FIRs filed for allegedly obscene remarks has reignited debates on freedom of speech on Digital Platforms in India.

Constitutional Protection of Free Speech

- **Article 19(1)(a)** of the Indian Constitution guarantees the **right to freedom of speech and expression to all citizens.**
- However, this right is not absolute. Article 19(2) allows the State to impose reasonable restrictions in the interest of: Decency and morality, Public order, Security of the State, Friendly relations with foreign States, Sovereignty and integrity of India, Contempt of court, defamation, and incitement to an offence

Supreme Court Cases Upholding Free Speech:

- **Romesh Thapar v. State of Madras (1950):** Restrictions on free speech must be narrowly defined and linked to "security of the state," not just public order.
- **Shreya Singhal v. Union of India (2015):** Struck down Section 66A of the IT Act for violating free speech.
- **Mohammed Zubair (2021):** SC declined a government request to ban his tweets while on bail.
- **Rehana Fathima (2021):** SC ruled against restrictions on social media use imposed by a lower court.
- **Imran Pratapgarhi Case (2025):** The Supreme Court quashed criminal proceedings against an MP for reciting a poem, stating that free speech cannot be trampled on flimsy grounds.

"It must be recognized that freedom of speech and expression is one of the most valuable rights guaranteed to a citizen by the Constitution and should be jealously guarded by the Courts. It must also be recognised that free political discussion is essential for the proper functioning of a democratic government..."

Brij Bhushan v. State of Delhi (1950)

Challenges in Regulating Speech on Digital Platforms in Democratic India

- **Lack of Clear and Updated Laws:** Existing laws like the IT Act, 2000 and IPC provisions are outdated. Newer challenges like deep fakes, AI-generated misinformation, and trolling armies are not fully addressed.
- **Ambiguity in Rule Enforcement:** The IT Rules, 2021 empower the government to remove content but have vague terms like "offensive" or "harmful". Platforms and users often don't know what content is actually banned or why it's taken down.
- **Big Tech vs. National Laws:** Global companies (e.g., Meta, Google) often have their own community standards, which may clash with Indian laws or sentiments. Enforcement may be selective, slow, or biased due to business interests.
- **Volume and Speed of Content:** Millions of posts are made every hour-too much for manual moderation. Even AI moderation tools can't understand context, sarcasm, or local language nuances.
- **Threat to Democratic Values:** Too much control by the state can lead to censorship. Too much power with platforms can lead to unaccountable influence on public opinion and elections.
- **Government Overreach:** There's a risk that governments may use regulations to curb criticism or suppress opposing views, especially on political grounds.

Way Forward

- Clearer legal definitions and judicial oversight on content regulation.
- Strengthening fact-checking mechanisms and digital literacy.
- Co-regulation with platforms involving independent oversight bodies.
- Promoting ethical use through self-regulation by platforms and civil society participation.

Sub Categorisation of SCs

Context: Telangana has enacted the SC (Rationalization of Reservations) Act, 2025, becoming the first state to implement sub-categorization of SCs based on population and backwardness.

Sub-categorisation in SCs

- Sub-categorisation within SCs refers to the process of creating sub-groups within the existing categories of Scheduled Castes (SCs) for reservation.
- This move aims to address the intra-category inequalities and ensure a more equitable distribution of benefits and opportunities among the most deprived and marginalized sections of society.
- For example, Telangana's Madiga community (50% of SCs) has long demanded sub-categorisation, claiming the Mala community has disproportionately benefited from reservations.

Debate Around Categorisation of Schedule Castes

Arguments in Favour	Arguments Against
• The principal argument for sub-categorisation of SCs is the graded inequalities among SC communities. • Some marginalised communities have less access to basic facilities, while relatively more forward communities consistently avail benefits, crowding out the more backward ones. • In Uttar Pradesh, the Chamar community (56% of SCs) has better literacy (50%) and education levels (14% completed Matric) than the Pasi community (16% of SCs), whose literacy rate is only 39% and Matric completion just 10%. • Sub-categorisation and separate reservation for more backward communities within the SC reservation is proposed as a solution.	• It does not address the root cause of the problem, which is to ensure representation at all levels. • Even if posts were reserved at higher levels, the most backward SCs might not have enough candidates to fill them. • Existing schemes and benefits should reach these sections first before any sub-categorisation. • Legal experts argue that concrete data is necessary to support sub-categorisation. They suggest a caste census to gather socio-economic data for each community and sub-community. • A caste census would provide the empirical basis for justifying the sub-categorisation of benefits and determining the extra share each community needs.

Legality of Sub-categorisation Within Castes

- **E.V. Chinnaiah v. State of Andhra Pradesh (2004):** The Supreme Court ruled that once a community is included in the Presidential List for SCs under Article 341 of the Constitution, they become part of a single, unified class for the purposes of reservation. The Court held that: States lack the legislative power to create sub-classifications within this unified class.
- **Davinder Singh Case (2020):** A five-member Supreme Court bench unanimously ruled that sub-categorisation is constitutionally valid. The bench suggested that a larger constitutional bench should rule on the matter. The seven-judge bench, in a 6:1 majority, held that states can create sub-categories within SC/STs to provide preferential treatment to the most disadvantaged groups.

Union Government's Stand

- **2005 Consideration:** The Union government explored legal options for the sub-categorisation of SCs. The Attorney General of India at the time opined that sub-categorisation could be possible if there was unimpeachable evidence indicating its necessity.

- **Views of NCSC and NCST:**

- Both the National Commission for Scheduled Castes (NCSC) and the National Commission for Scheduled Tribes (NCST) opined that a constitutional amendment was not necessary for sub-categorisation of SCs.
- They argued that Article 16(4) of the Constitution already allows states to create special laws for any under-represented backward classes.

The sub-categorisation of SCs is a complex issue that requires careful consideration of the legal framework, social implications, and potential benefits and challenges.

Presidential References under Article 143

Context: The President invoked Article 143(1) to seek the Supreme Court's opinion on setting time limits for presidential and gubernatorial action on state Bills.

What is Article 143 of the Indian Constitution?

- Article 143 deals with the **advisory jurisdiction of the Supreme Court (SC)**. It allows the President of India to seek the SC's opinion on important legal or factual matters.
- This power is exclusive to the President and is not available to state governments or individuals. The opinion given by the SC is not binding but serves as a legal guide to the government.
- **Article 145(3)** mandates that such references be heard by a bench of at least five judges.

Types of Presidential References

- **Article 143(1):** President can refer any question of law or fact of public importance, which has arisen or is likely to arise. **The SC may choose to give or refuse to give an opinion.** Example: In 1993, SC declined to give its opinion in the Ram Janmabhoomi case.
- **Article 143(2):** Refers to pre-Constitution treaties or agreements (such as covenants or sanads). The SC is **required** to give its opinion in such matters.

Major Presidential References Under Article 143

Delhi Laws Act case (1951)

- Defined limits of delegated legislation.

Kerala Education Bill (1958)

- Balanced Fundamental Rights and Directive Principles.

Berubari case (1960)

- Territorial cession requires a constitutional amendment.

Keshav Singh case (1965)

- Explained legislative privileges and judicial powers.

Presidential Poll case (1974)

- Clarified that elections can continue despite Assembly vacancies.

Third Judges case (1998)

- Established the Collegium system for judicial appointments.

Current Presidential Reference (2024)

The President has invoked Article 143(1) to seek the SC's opinion on:

- Whether time limits can be set for the President or Governors to act on state Bills (especially under Articles 200 and 201).
- Whether the SC, under Article 142 (complete justice provision), can impose such timelines.

This follows the SC's ruling that overturned the Tamil Nadu Governor's delay in giving assent to 10 state Bills. SC set a three-month deadline for Presidential assent to Bills.

Can Article 143 Overturn a SC Verdict?

- As per the Cauvery Tribunal opinion (1991), Article 143 cannot be used to review or reverse settled judicial decisions.
- However, the government can file a review or curative petition against such judgments, including State of Tamil Nadu v. Governor of Tamil Nadu (2023).

Significance of Presidential Reference

- **Guidance for the Executive:** It allows the executive branch (the President, acting on the advice of the Council of Ministers) to seek an authoritative legal opinion from the Supreme Court on complex constitutional or legal

matters. This enables the government to **make constitutionally sound decisions**, especially on sensitive national issues, without waiting for actual litigation.

- **Preventing Disputes:** By obtaining an advisory opinion, potential legal disputes can be averted or resolved early. This provides clarity before any action is taken that might later be challenged in court.
- **Facilitating Inter-Institutional Harmony:** It promotes coordination between the executive and the judiciary, clarifying constitutional roles and boundaries among various organs of the state (such as the Executive, Parliament, and Judiciary) within the democratic framework.
- **Not a Judicial Pronouncement:** An advisory opinion is not a "judicial pronouncement" or a "judgment." Therefore, it does not create a binding precedent under Article 141. However, it can clarify or refine the law without overturning established judicial decisions.

Concerns related to the Presidential Reference

- **Non-Binding Nature of SC Opinion:** Since Article 143 opinions are not binding, the executive may ignore them, limiting the practical utility of the advisory jurisdiction.
- **Potential for Politicization:** Governments may misuse Article 143 to justify political decisions or challenge court rulings, risking judicial neutrality and politicizing the judiciary.
- **Unclear Threshold for Referral:** The term "public importance" lacks clear definition, allowing broad executive discretion and possibly leading to unnecessary or politically motivated references.
- **Institutional Tensions and Judicial Independence:** Frequent or adversarial references can strain judiciary, executive relations and may be seen as attempts to undermine settled judicial authority.
- **No Timeline for SC Response:** There is no constitutional deadline for the SC to reply, causing delays in resolving urgent governance or constitutional issues.
- **Separation of Powers and Judicial Overreach:** References challenging SC powers raise concerns over whether courts can direct constitutional authorities like Governors, risking perceptions of judicial overreach.
- **Executive Discretion and Federal Balance:** Broad executive discretion over references may disturb Centre–State relations, especially in cases involving Governor roles in state legislation.

As India grapples with complex Centre–State relations and evolving constitutional challenges, the Presidential Reference mechanism must be used with caution, ensuring it strengthens democratic governance without undermining institutional balance.

Indian Federalism

President's Rule

Context: President's Rule was imposed in Manipur due to ongoing ethnic violence between the Meitei and Kuki-Zo communities since May 2023, triggered by the Meitei demand for ST status.

About President's Rule (Article 356)

- Also called Governor's Rule, it refers to the failure of constitutional machinery in a state, making the state government unable to function as per the Constitution. During this time, the Centre temporarily takes direct control of the state through the Governor.

Grounds for Imposition of President's Rule

- **Constitutional Duty of the Centre: Article 355** imposes a duty on the Centre to protect states from external aggression, internal disturbance, and ensure they function as per the Constitution. This forms the basis for invoking Article 356.
- **Proclamation of President's Rule:** President's Rule can be proclaimed under two grounds:
 - **Article 356:** Allows the President to impose President's Rule **if satisfied that the state cannot function constitutionally**. This can be based on the Governor's report or the President's own judgment.
 - **Article 365:** **If a state disobeys Centre's directions**, the President may deem that the state government cannot function constitutionally, and thus impose President's Rule.

What Happens After a President's Rule is Imposed in a State?

- **Governance:** The Governor administers the state on behalf of the President with assistance from the state's Chief Secretary and other appointed advisors or administrators.
- **State Legislature:** The state legislative assembly is either suspended or dissolved by the President. The President may declare that the legislative powers of the state will be exercised by the Parliament.
- **Ordinances:** When Parliament is not in session, the President can promulgate ordinances concerning the administration of the state.
- **Fundamental Rights:** The imposition of President's Rule does not affect the Fundamental Rights of the citizens.

Related Case Laws on President's Rule	
State of Rajasthan vs. Union of India (1977)	• The Supreme Court ruled that it cannot assess the adequacy of the facts behind the Centre's satisfaction but can intervene if the decision is mala fide or based on irrelevant grounds.
S.R. Bommai vs. Union of India (1994)	• President's Rule is subject to judicial review if based on bad faith or irrelevant reasons. • Courts can restore the Assembly if proclamation is unconstitutional. • The Assembly can't be dissolved without Parliament's nod; only suspended. • Article 356 should be a last resort, used only in constitutional breakdowns. • Floor tests must decide legislative majority.
Rameshwar Prasad vs. Union of India (2006)	• The court held that Article 356 is not absolute and can be challenged if the Governor's report lacks reasonable grounds. • Mere constitutional violations don't justify President's Rule unless there's a serious breakdown.

Concerns Raised Regarding the Misuse of President's Rule

- **Political Misuse:** For instance, after winning the 1977 Lok Sabha elections, the Janata Party government dissolved 9 state assemblies, citing lack of confidence in state governments. In 1980, Indira Gandhi re-imposed President's Rule in the same states, claiming they no longer represented the electorate.
- **Undermines Federalism:** Frequent imposition can weaken state autonomy, challenging the federal structure by centralizing power excessively. President's Rule has been imposed in India 134 times since 1950, most recently in Manipur.
- **Judicial Limitations:** Although the S.R. Bommai (1994) judgment permitted judicial review of President's Rule, courts often show reluctance to intervene in politically sensitive matters, weakening safeguards against misuse.
- **Prolonged Central Rule:** States are sometimes kept under President's Rule for extended durations, denying them democratically elected governments. Example: Jammu & Kashmir holds the record for longest cumulative duration, over 12 years, under President's rule.
- **Vague and Subjective Nature:** Article 356 lacks a clear definition of what constitutes the failure of constitutional machinery and what specific circumstances justify its invocation. This ambiguity allows political parties to potentially exploit this power to further their interests.
- **Undermining Democratic Principles:** The President's Rule involves suspension of an elected state government and legislative assembly, which can be seen as undermining democratic principles and disenfranchising the people of the state from their representatives.
- **Delays in Decision-Making:** The process of taking important decisions can take time since the Union Ministry is also involved in the decisions at the state level during President's rule. This can impact the delivery of services and development programs in the state.

Recommendations of Various Commissions

Sarkaria Commission (1983) Recommendations

- **Cautious Use:** Article 356 should be used sparingly, only as a last resort after all alternatives are exhausted to resolve state constitutional crises.
- **Duty of Governor:** The Governor must explore all alternatives before dismissing a government with majority support. If fresh elections are feasible, the outgoing ministry should act as a caretaker government without making major policy decisions.
- **Proclamation:** Each proclamation must be placed before both houses of Parliament as early as possible, before the expiry of two months.

Punchhi Commission (2007) Recommendations

- Limit central intervention to specific troubled areas for no more than three months.
- Amend laws to incorporate Supreme Court guidelines from the Bommai case.
- Introduce a 'Localized Emergency' to address local issues without dissolving the state assembly, while protecting states as per Article 355.

It is essential to ensure that the invocation of President's Rule is exercised judiciously and in the true spirit of the constitutional mandate, safeguarding both the autonomy of states and the federal structure of the nation.

Article 371A

Context: A Meghalaya party suggests using Article 371, like Nagaland's 371A, to protect local resources and lift the 2014 rat-hole mining ban.

About Article 371A

- Article 371A grants special status to Nagaland, ensuring autonomy in governance, lawmaking, and administration, particularly in preserving tribal customs, land rights, and regional governance.
- This Article was added by the 13th Constitutional Amendment Act of 1962.
- Nagaland was carved out of Assam in 1963 following the 16-Point Agreement between the Naga People's Convention and the Government of India.

Key Provisions

1. Exemption from Parliamentary Laws

- The Acts of Parliament do not apply to Nagaland in the following areas unless approved by the State Legislative Assembly:
 - Religious and social practices of the Naga people.
 - Naga customary laws and procedures.
 - Administration of civil and criminal justice based on customary laws.
 - Ownership and transfer of land and its resources.

2. Governor's Special Responsibility for Law and Order and Finances

- The Governor has special powers over law and order in Nagaland as long as internal disturbances caused by hostile Naga factions persist.
- In such matters, the Governor acts independently, consulting the Council of Ministers, but his decision remains final. This special authority ceases when the President directs.
- The Governor ensures that Central Government funds allocated for a specific purpose are used accordingly and not diverted elsewhere in the State Legislative Assembly.

Significance of Article 371A

- **Preserves Naga Culture and Identity:** Article 371A protects the religious practices, social customs, and traditional laws of the Naga people. Example: Customary courts handle civil and criminal cases, reducing reliance on national laws like the Indian Penal Code.

- **Gives Legislative Autonomy:** The Nagaland Legislative Assembly has the power to decide whether central laws apply to the state in matters like religion, land, and customs. This enables Nagaland to safeguard tribal practices from being overridden by national laws.
- **Protects Land and Natural Resources:** Ownership and transfer of land and resources are controlled by local customs, preventing non-tribals from buying land.
- **Supports Peace and Stability:** The Article is key in addressing historical demands for autonomy by Naga groups and contributes to ongoing peace negotiations for a long-term political settlement.

Challenges of Article 371A

- **Legal and Jurisdictional Ambiguity:** Article 371A creates conflict between central laws and state autonomy, especially in areas like land and justice. The absence of clear legal guidelines for interpreting its provisions has led to confusion and legislative gaps.
- **Resource Management and Economic Development:** Customary land rights under Article 371A have hindered regulation of mining and natural resources. This has led to unsafe practices like illegal rat-hole mining and disputes over state vs. central control, slowing economic growth.
- **Tension Between Customary Practices and Modern Governance:** Autonomy for customary laws often clashes with constitutional principles like gender equality and democracy. Resistance to women's reservation and the Uniform Civil Code highlight these conflicts.
- **Lack of Structured Dispute Resolution:** Unlike the Sixth Schedule, Article 371A lacks formal mechanisms to resolve disputes between traditional laws and modern legislation. This results in prolonged legal uncertainty.
- **Administrative and Political Dilemmas:** While preserving Naga identity, Article 371A also complicates development efforts and investment. Its broad protections sometimes lead to governance challenges and ineffective administration.

There is a growing consensus on the need for reinterpretation and reform to balance tradition with modernity, ensuring both the protection of Naga identity and the advancement of inclusive, effective governance.

Supreme Court Ruling on Governor

Context: In the case *State of Tamil Nadu v. The Governor of Tamil Nadu*, the Supreme Court recently intervened to address delays in the approval of Bills passed by the Tamil Nadu Legislative Assembly.

Case Background:

- In Tamil Nadu, the Governor delayed action on 10 Bills passed by the State Legislature, withholding assent without providing reasons.
- After the Legislative Assembly re-passed the same Bills, instead of acting on them, the Governor referred them to the President, prompting the state government to approach the Supreme Court. The state argued this conduct violated constitutional norms and disrupted governance.

Supreme Court's Ruling:

- The Court held that the Governor's decision to refer re-passed Bills to the President was legally flawed.
- It rejected the idea that a Governor can exercise an "absolute veto" or a "pocket veto" under Article 200 of the Constitution.
- The Governor, being a constitutional authority, must act based on the advice of the State Council of Ministers.
- If a Bill is re-passed by the Assembly without any changes, the Governor is constitutionally required to give assent unless the Bill is significantly altered.
- The Court laid down specific timelines: (a) One month to grant or withhold assent. (b) Three months if referring the Bill to the President against cabinet advice. (c) One month to act on Bills re-submitted after reconsideration.

Significance of the Verdict

- **Checks Gubernatorial Discretion:** The ruling limits the Governor's power to delay or block State Bills indefinitely, reinforcing that Governors must act within constitutional boundaries.

- **Upholds Federal Principles:** By ensuring that elected State governments are not undermined by unelected officials, the judgment strengthens India's federal structure.
- **Reinforces Legislative Supremacy:** The decision affirms that the legislative process, backed by the will of the people, cannot be stalled without valid constitutional reasons.
- **Sets Clear Timelines:** The Court's prescription of fixed timelines for the Governor's actions brings predictability and efficiency to the law-making process.
- **Discourages Political Interference:** It clarifies that Governors are constitutional heads and not political gatekeepers, preventing misuse of office for partisan purposes.
- **Precedent for Other States:** The judgment serves as guidance for similar cases in states like Kerala, Punjab, Telangana, and West Bengal, where delays in assent to Bills have caused constitutional friction.
- **Promotes Good Governance:** Timely approval of Bills ensures smoother implementation of public welfare policies, which is essential for responsive and accountable governance.

Constitutional Powers of a Governor Over State Bills

- **Article 200 – Governor's Options on a Bill:** When a Bill is passed by the State Legislature, the Governor can:
 - **Grant Assent:** Approves the Bill; it becomes law.
 - **Withhold Assent:** Rejects the Bill.
 - **Return for Reconsideration:** Sends the Bill back to the legislature (only for non-Money Bills).
 - **Reserve for President:** Refers the Bill to the President if it may conflict with central laws or national interest.
- **Article 201 – President's Role (if Bill is Reserved):** If the Governor reserves the Bill, the President may:
 - **Grant Assent:** The Bill becomes law.
 - **Withhold Assent:** The Bill is rejected.
 - **Send Back for Reconsideration:** For non-Money Bills, President can ask the Governor to return the Bill to the State Legislature.
 - *If re-passed by the legislature, the Bill goes back to the President for final decision.*
- **Article 207 – On Money Bills:** A Money Bill cannot be introduced in the State Assembly without the Governor's recommendation.

Key Concerns Related to Governors in India

- **Lack of Political Neutrality and Perceived Partisanship:** Governors are often viewed as politically biased, favoring the central government, undermining federal principles and compromising their role as neutral constitutional heads.
- **Misuse of Discretionary Powers (Article 356):** Governors have recommended President's Rule without floor tests, raising constitutional concerns and prompting judicial intervention in cases like Uttarakhand and Arunachal Pradesh in 2016.
- **Delayed Assent to Bills:** Governors have delayed assent to Bills, stalling state legislation. The Supreme Court ruled such indefinite delays violate constitutional norms and hinder democratic governance.
- **Interference in State Administration:** Governors have interfered in state matters like university appointments and bureaucratic control, disrupting governance and challenging the authority of elected governments.
- **Lack of Accountability and Transparency:** Governors enjoy legal immunity and are not directly accountable to states, with unclear removal processes, raising concerns over transparency and misuse of office.
- **Vague Constitutional Guidelines:** The Constitution lacks clear rules on Governor-state disputes, allowing prolonged conflicts and enabling political misuse of the Governor's office without legal resolution mechanisms.

Recommendations of Committees on the Role of Governors

Sarkaria Commission (1988)

- Governor should not hold statutory roles unrelated to the Constitution.
- Chief Minister must be consulted before appointing a Governor.
- Avoid appointing recently active politicians as Governors.
- Limit Governor's role in university administration; give states more say.

Venkatachaliah Commission (2002)

- Suggested forming a panel for Governor's appointment, including the Prime Minister, Home Minister, Lok Sabha Speaker, and the State's Chief Minister.

Punchhi Commission (2010)

- Governors should decide on Bills within a fixed period (max six months if reserved for the President)
- Stronger safeguards to prevent misuse of Article 356 (President's Rule).

Implementing key committee recommendations, ensuring greater accountability, and redefining the Governor's discretionary powers are essential steps to restore trust, protect cooperative federalism, and prevent political misuse of this constitutional office.

High Level Committee on State Autonomy

Context: Tamil Nadu has formed a High-Level Committee led by ex-SC judge Justice Kurien Joseph to strengthen state autonomy and review Union–State power shifts.

Federal Scheme of the Indian Constitution

India's Constitution adopts a quasi-federal model-blending federal and unitary features with a strong Centre.

- **Dual Polity:** India has a Union and State Government, both deriving power from the Constitution.
- **Division of Powers (Seventh Schedule):**
 - **Union List:** Central subjects (e.g., defence, foreign affairs)
 - **State List:** State subjects (e.g., police, agriculture)
 - **Concurrent List:** Shared subjects (e.g., education, marriage)
- **Supremacy of the Constitution:** The Constitution is the highest law; any law violating it can be struck down.
- **Written & Partly Rigid Constitution:** Special amendment procedures ensure federal provisions can't be changed easily.
- **Independent Judiciary:** The Supreme Court safeguards the Constitution and resolves Centre–State disputes.
- **Bicameral Legislature:** The Rajya Sabha represents states in Parliament, while Lok Sabha represents the people.

Key Issues of Centre State Relations

A. Legislative Relations

- **Encroachment on State List by the Centre:** A recurring concern is the Union Parliament legislating on State List subjects, often using provisions like Article 249 (national interest) or Article 252 (state consent). Though meant for special situations, frequent use may erode state autonomy.
- **Use of Article 356 (President's Rule):** President's Rule suspends elected state governments and has been controversial. Though meant for constitutional crises, it has allegedly been used politically to destabilize opposition-led states. President's Rule has been imposed about 134 times across 29 States and UTs since 1950.
- **Concurrent List Conflicts:** Both Centre and States can legislate on Concurrent List subjects, but central law prevails in case of conflict. This can override effective, locally tailored state laws. Over the years, five key subjects were shifted from the State List to the Concurrent List.
- **Delay in Presidential Assent to State Bills:** Bills passed by state legislatures sometimes require the President's assent. Delays in granting or withholding this assent can impede the implementation of state policies and lead to friction.
- **Delimitation Fears Post-2026:** Some states fear losing Lok Sabha seats due to lower population growth, reducing its national representation and political influence.

B. Administrative Relations

- **Deployment of Central Armed Police Forces (CAPF):** The deployment of central forces in states, sometimes without the explicit consent of the state government, has been a sensitive issue, particularly concerning law and order, which is a state subject.
- **Role of the Governor:** Appointed by the President, Governors are meant to be neutral constitutional heads. However, they are often accused of acting on behalf of the Centre. This is seen especially during government formation, dismissal.
- **Implementation of Central Schemes:** Though centrally funded, many welfare schemes rely on state machinery for execution. Disputes often emerge over funding shares, administrative authority, and the degree of flexibility states have in adapting these schemes. Some states, notably West Bengal, refused to join the Ayushman Bharat Scheme, citing concerns over branding, funding, and administrative control.

- **Inter-State Disputes:** Disputes between states, particularly over water sharing, territorial claims, and linguistic minorities, often require central intervention, which can be a delicate balancing act.
- **All India Services (AIS):** Members of the AIS (IAS, IPS, IFoS) are recruited by the Centre but serve in states. While this promotes national integration and administrative uniformity, issues can arise regarding control, disciplinary action, and the perceived loyalty of AIS officers to either the Centre or the State.
- **Weak Constitutional Accountability of Institutions:** Bodies like NITI Aayog lack constitutional status, reducing transparency and accountability in Centre–State decision-making.

C. Financial Relations

- **Vertical Imbalance (Revenue Disparity):** States often argue that the Centre has access to more buoyant and elastic sources of revenue (e.g., corporation tax, income tax, customs duties), while states are left with less buoyant sources (e.g., Excise). This creates a vertical imbalance, where states have greater responsibilities but limited financial capacity.
- **Dependence on Central Transfers:** States rely heavily on transfers from the Centre (such as their share in central taxes and grants-in-aid) to meet expenditure needs. This dependence can reduce fiscal autonomy and often leads to lobbying the Centre for additional funds.
- **Goods and Services Tax (GST) Implementation:** GST aimed to simplify the indirect tax system, but concerns have arisen regarding compensation for revenue losses, the functioning of the GST Council (where the Centre holds 33% votes).
- **Terms of Reference (ToR) of the Finance Commission:** States sometimes express concerns that the ToR set by the Centre for the Finance Commission may not adequately reflect the needs and aspirations of individual states. For example, use of population data of 1976 vs 2011.
- **Disparities in Devolution:** The state argues that Finance Commission recommendations have reduced its tax share despite being a major contributor to national revenue. Central grants to states fell from ₹1.95 lakh crore in 2015–16 to ₹1.65 lakh crore in 2023–24, weakening state finances.

Tamil Nadu's move signals a broader pushback from states seeking a more balanced federal compact. Upholding the constitutional vision of cooperative federalism requires restoring trust, ensuring equitable

Committees on Centre–State Relations				
Rajamannar Committee (1969)	Sarkaria Commission (1983)	NCRWC (2000)	Punchhi Commission (2007)	NITI Aayog (Post-2015)
• Abolish Article 356- Create permanent Inter-State Council • Transfer more powers & finances to States • Limit Planning Commission's interference	• Strengthen fiscal federalism • Limit Article 356 use • Create permanent Inter-State Council • Residuary taxation with Centre; others in Concurrent List	• Boost fiscal federalism • Set up Inter-State Trade Commission • Mandatory Centre-State consultations on state-impacting laws	• Limit misuse of Article 356 • Ensure neutral role & transparent removal of Governors • Greater state control over Concurrent List • Regulate treaty-making on State matters	• Promote cooperative federalism • Regular Centre-State consultations • Flexibility in Centrally Sponsored Schemes

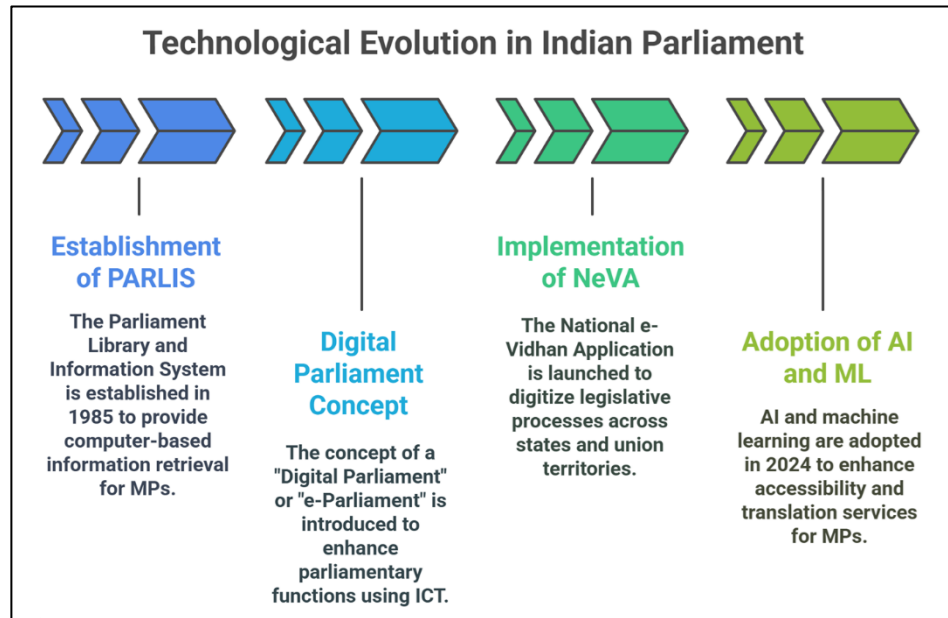
devolution, respecting state jurisdiction, and strengthening institutional mechanisms that safeguard the federal spirit enshrined in the Constitution.

Technology in Legislatures

Context: In a major step towards modernizing parliamentary processes, the Lok Sabha Secretariat and the MeitY signed an MoU to develop the Sansad Bhashini initiative recently. In other news, Delhi recently became the 28th legislature to join the National e-Vidhan Application (NeVA) platform.

Key Roles of Technology in Legislatures

- **Efficient Communication and Information Management:** Technology improves internal communication and public engagement. It streamlines access to legislative records and enhances workflow and collaboration.
- **Digital Voting and Remote Access:** Electronic voting and remote participation tools-adopted widely during COVID-19-enable secure attendance and voting through encryption and two-factor authentication. Examples include Brazil, Canada, Costa Rica, and the UK.
- **Transparency and Public Engagement:** Broadcasting sessions on TV, YouTube, and radio, along with online access to documents, improves transparency.



Costa Rica's Open Parliament Policy highlights this approach.

- **Use of Artificial Intelligence (AI):** AI supports live transcription (e.g., in India, Israel), metadata tagging, translation, and chatbots for MPs. Adoption is still low, with about 10% of parliaments using AI as of 2020.
- **Digital Legislative Drafting Tools:** U.S. legislatures are shifting to XML-based drafting systems that improve speed, accuracy, and collaboration in drafting and managing bills.
- **Multimedia and Internet Tools:** Videoconferencing, presentations, and interactive websites allow real-time public input and reduce the need for travel, making legislatures more accessible.

Issues with Use of Technology in Legislatures of India

- **Digital Literacy Gaps:** About 19% of Lok Sabha MPs have an educational qualification between Class 5 and Class 12. Limited formal education can affect their ability to navigate digital platforms confidently.
- **Language and Accessibility Challenges:** India's linguistic diversity poses difficulties in real-time translation of parliamentary proceedings, especially in digital or hybrid sessions.
- **Security and Privacy Risks:** Conducting parliamentary activities online, such as voting or discussions, exposes them to cyber threats. In 2024, India was ranked as the second most targeted country for cyberattacks globally.
- **Impact on Parliamentary Norms and Opposition Role:** Virtual sessions restrict traditional forms of protest like walkouts and slogan-shouting, reducing the visibility of dissent and potentially disturbing the balance between government and opposition.

Investing in digital transformation is no longer optional-it is essential for resilient, inclusive, and accountable parliamentary democracies. As challenges grow, parliaments must innovate and adapt to stay effective and connected to the people they serve.

Private Member Bills

Context: Rajya Sabha Chairman Jagdeep Dhankhar recently emphasised that Private Members' Bills (PMBs) are "forward-looking" and represent a "gold mine" for legislative progress.

What is a Private Member's Bill (PMB)?

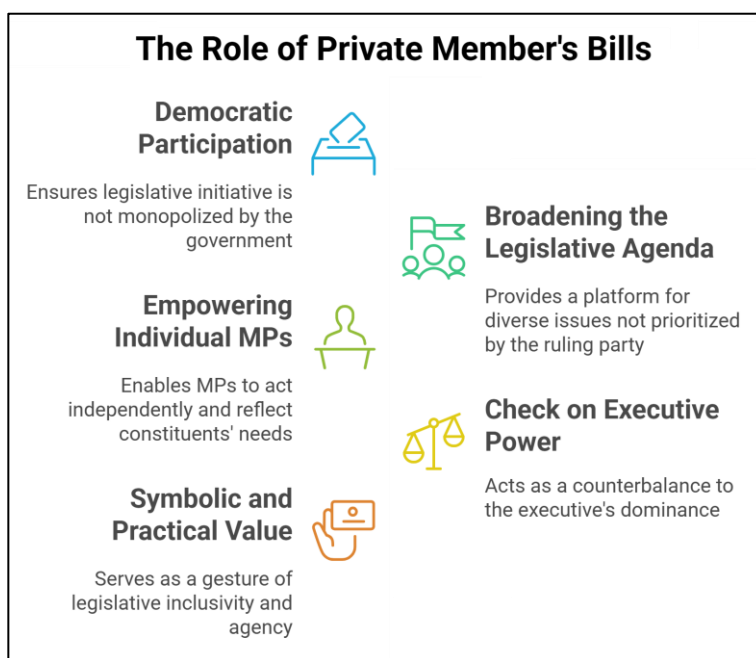
- A Private Member's Bill is a legislative proposal introduced in Parliament by any Member of Parliament (MP) who is not a Minister-this includes both elected and nominated members.
- The MP is solely responsible for drafting the bill; no Ministry is involved.
- As per parliamentary procedure, a notice period of one month is required before introducing a PMB.
- PMBs often reflect an MP's personal convictions, party ideology, or public interest concerns, and are especially used by Opposition members to raise key issues.

Time Allocation for PMBs in Parliament

- In the Lok Sabha, the last two-and-a-half hours on every Friday are reserved for introducing and debating PMBs.
- In the Rajya Sabha, PMBs are taken up every alternate Friday for a duration of two-and-a-half hours.

Why Are Private Member's Bills (PMBs) on Decline?

- **Limited Time and Frequent Disruptions:** PMBs are typically discussed only on Fridays for 2–3 hours. These sessions are often disrupted or adjourned due to other priorities or political chaos. Example: In the 17th Lok Sabha (2019–24), 729 PMBs were introduced in the Lok Sabha and 705 in the Rajya Sabha, but only 2 and 14, respectively, were discussed.
- **Procedural and Political Hurdles:** PMBs require approval from the Speaker or Chairman, whose decisions may be influenced by political factors. The long wait time for listing and discussion discourages MPs from pursuing them seriously. Only 14 PMBs have become laws in India's parliamentary history, with the last one passed in 1970.
- **Lack of Institutional and Research Support:** Unlike government ministries, individual MPs lack expert staff or drafting assistance to prepare technically sound legislation. There is no formal institutional mechanism to guide or support PMB drafting and review.
- **Dominance of the Executive and Party System:** Government controls most legislation. Party whips and anti-defection laws prevent MPs, especially ruling party members, from pushing independent legislative proposals.
- **Erosion of Independent Legislative Role:** Backbench MPs are marginalised as party control grows. Though elected by people, MPs can't act freely in a party-dominated parliamentary system.



Way Forward

- **Protect and Prioritise PMB Time:** Amend House Rules to safeguard Friday sessions for uninterrupted PMB discussions.
- **Enhance Research and Drafting Support:** Create a dedicated research unit for private members, similar to the UK's Public Bill Committee.

- **Establish an Institutional Review Mechanism:** Introduce a parliamentary committee to screen PMBs for quality, relevance, and constitutionality.
- **Promote Innovative Legislative Models:** Consider adopting the UK's 10-Minute Rule, allowing MPs to propose brief bills with short speeches to build support.

Judiciary and Tribunals

Third-Party Litigation Funding

Context: Access to justice in India is hindered by high litigation costs and case backlogs. Third-Party Funding gives a model to help financially weaker parties pursue legal remedies.

What is Third-party funding (TPF)?

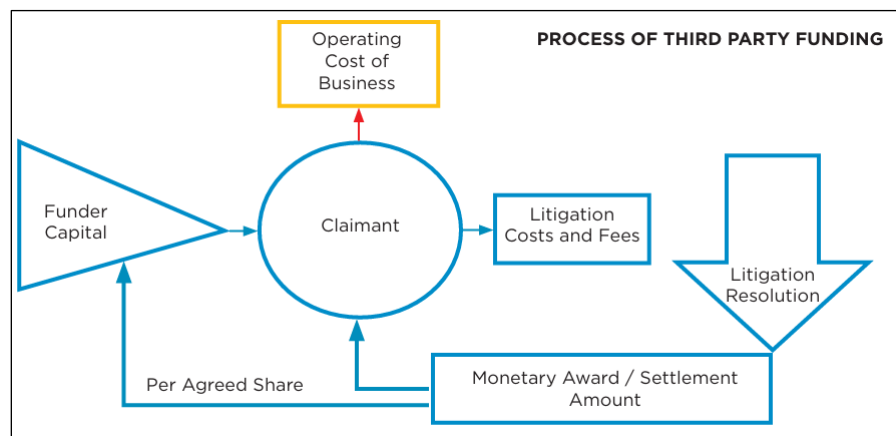
- Also known as litigation financing, TPF refers to a funder covering a party's legal expenses in exchange for a share of the monetary award, if the case is successful.
- It applies to all forms of dispute resolution- litigation, arbitration, or mediation. TPF allows parties to access capital during disputes and helps create a level playing field between unequal opponents.

Global Experience

- **United States:** TPF is well-developed due to a permissive legal system and widespread use of contingency fees. However, concerns remain over lack of transparency and potential funder interference.
- **Singapore:** Adopted a balanced model through 2017 legal reforms, allowing TPF in international arbitration. Mandatory disclosure of funding ensures transparency and judicial fairness.

Need for TPLF in India

- **High Pendency of Cases:** India's judiciary faces over 40 million pending cases. This backlog delays justice and increases strain on litigants involved in prolonged legal battles. TPLF helps fund litigation for those who cannot afford it, ensuring access to justice in return for a share of the award.
- **Rising Cost of Legal Proceedings:** Litigation expenses (court fees and lawyer charges) are too high for the average citizen. A 2015-16 survey found that litigants spend up to ₹30,000 crores on legal costs in lower courts alone.
- **Economic Cost of Attending Courts:** According to Daksh's Access to Justice Survey (2014–15), court-related productivity loss is around 0.48% of India's GDP.
- **High Undertrials:** Undertrial prisoners make up about 76% of the total prison population. 65% of undertrial prisoners belong to the SC, ST and OBC categories. Most of them are too poor to even afford the bail fee.
- **Abandonment of Strong Legal Claims:** Many strong legal cases are dropped not due to weak merits but because of financial limitations, undermining trust in the justice system.



Issues with Third-Party Funding (TPF)

- **Ethical Concerns and Conflicts of Interest:** The people or organizations providing the funding might have different goals than the people making the legal claim.
- **Loss of Control for Claimants:** The funders may try to influence legal decisions, like how to handle the case or whether to settle, reducing the claimant's control over the case.

- **Confidentiality Risks:** Important and private information needs to be shared with the funders, which increases the risk that this sensitive data could be leaked or misused.
- **Reduced Net Recovery:** The funders take a large part of any money won or received from a settlement, so the person making the claim ends up with less.
- **Regulatory and Legal Uncertainty:** There are no clear or consistent rules to govern litigation funding, and laws differ from one country or region to another, creating confusion.
- **Encouragement of Frivolous Claims:** Since funders are motivated by profit, they might support cases that are weak or have little chance of success, just to try to make money.

Judicial Observations regarding TPF

- **Ram Coomar Coondoo v Chunder Canto Mookerjee (1876):** The Privy Council allowed TPF if it did not violate public morality.
- **Harilal Nathalal Talati v Bhailal Pranal Shah (1939):** The Bombay High Court struck down an unfair TPF agreement.
- **Bar Council of India v AK Balaji (2018):** Supreme Court clarified that while Indian lawyers cannot enter contingency fee agreements, there is no bar on third-party funding by non-lawyers.
- **Tomorrow Sales Agency Pvt Ltd v SBS Holdings Inc (2023):** Delhi High Court ruled that Indian courts lack the wide discretion available in English law to impose costs on funders.

Case Study

Advok8, an Indian start-up, aims to develop a third-party funding market by helping litigants raise funds for legal cases through tech-based crowdfunding. As per public data, it has successfully funded eight cases so far.

Current Legal Landscape in India: States like Maharashtra and Gujarat have amended their civil procedure rules to recognise TPLF. However, India lacks a uniform national framework. Regulation is needed to ensure:

- Financial and ethical standards for funder
- Transparency in funding arrangements
- Reasonable caps on funders' profits
- Protection of litigant's rights

Way Forward: A **robust regulatory framework** should be created, possibly under a dedicated **oversight body**. Drawing lessons from Hong Kong and Singapore, India must ensure **clear rules on disclosure, liability, and funder influence**. Court supervision may be necessary in certain cases to preserve judicial integrity.

Tribunals in India

Context: Recently, the Supreme Court (SC) highlighted that there is often a shortage of members in the National Company Law Tribunal and inadequate infrastructure to support their functioning.

Tribunals System in India

- Tribunals are quasi-judicial bodies created **to deliver justice in specialized areas** and to **reduce the burden on the regular judiciary**. They blend legal and technical expertise to resolve disputes efficiently.
- **Purpose:** To handle specific types of disputes, especially those that are technical or administrative in nature; To speed up justice delivery and reduce the caseload of courts.
- **Composition:** Tribunals usually consist of **both judicial members and technical**

Constitutional Backing for Tribunals

Added by 42nd Amendment, 1976

Characteristic	Article 323A	Article 323B
 Purpose	Public service matters	Various subjects (tax, labor)
 Enactment	Parliament	Parliament & State Legislatures
 Scope	Central and State levels	Subjects in Seventh Schedule

experts. The inclusion of subject experts distinguishes tribunals from regular courts and enhances decision-making in technical fields.

- **Jurisdiction:** Tribunals have **defined subject-matter jurisdiction**-they can only decide cases within their area of specialization. Some tribunals also have appellate jurisdiction-they hear appeals from decisions of lower authorities or government bodies.
- **Appeal Mechanism:** Appeals from tribunals **generally go to the High Courts.** In some cases, laws provide for direct appeal to the Supreme Court. In the *Chandra Kumar Case (1997)*, the Supreme Court ruled that decisions of tribunals can be appealed before a division bench of the concerned High Court.

Significance of the Tribunals

- **Fast and Efficient Justice Delivery:** Tribunals reduce the burden on regular courts and ensure quicker justice through time-bound procedures. Example: Between 2010–2021, NGT disposed of 33,619 out of 35,963 cases. In 2017, it fined Art of Living ₹5 crore for damaging Yamuna floodplain.
- **Enforcement of Sectoral Laws:** Tribunals strengthen the enforcement of laws in specific sectors such as environment, tax, or company affairs. For Example, In case of Bhushan Steel Insolvency (2018), the NCLT-approved takeover by Tata Steel highlighted governance failures at Bhushan Steel and ensured its revival under ethical leadership.
- **Enhancing Policy and Governance Accountability:** The Tribunals like NGT pushes government bodies to improve environmental policy implementation. Example: In 2021, it demanded accountability in the Ganga cleaning mission, highlighting fund misuse and inaction.
- **Expertise:** Tribunals are staffed with members who have domain-specific knowledge, enabling more informed and precise rulings on technical and legal matters. Example: In the Armed Forces Tribunal (AFT), retired defence personnel serve as members, ensuring informed judgments on service-related matters.
- **Promotion of Justice with Equity and Fairness:** Tribunals protect rights and ensure justice in a cost-effective, timely, and focused manner, especially in areas involving public interest.

Key Challenges in the Tribunal System in India

- **Staff Shortages and Vacancies:** Many tribunals suffer from shortage of presiding officers, judicial members, and technical experts. Out of the 69 sanctioned positions across CAT's 19 benches, only 29 members are currently in place.
- **Inadequate Infrastructure:** For example, the National Green Tribunal (NGT) struggles with basic facilities and limited regional benches, which restricts access to justice for many.
- **Procedural Delays:** Tribunals frequently suffer from adjournments, missed deadlines, and weak case management. For instance, in the NCLT and NCLAT, around 67% of insolvency cases exceed the 330-day deadline prescribed under the IBC. Such delays defeat the purpose of speedy justice and often force litigants to approach higher courts.
- **Pendency of Cases:** Many tribunals are burdened with growing case backlogs, often due to lack of staff and inadequate systems. For instance, the Armed Forces Tribunal (AFT) had over 19,000 pending cases in 2021, largely due to staffing issues.
- **Lack of Independence:** Tribunal appointments are often controlled by the executive, raising concerns about bias and lack of autonomy. The Supreme Court (2019) criticised the absence of judicial majority in selection panels, calling it a violation of the separation of powers principle.
- **Overlapping Jurisdictions:** Tribunals sometimes have jurisdictional conflicts with regular courts or other tribunals. In *CCI v. Bharti Airtel (2019)*, the Supreme Court held that TRAI must first decide telecom disputes before CCI can step in, to avoid overlapping jurisdiction and conflicting decisions.
- **Concerns with Technical Members:** Some tribunals have technical members without legal training, which may impact the quality of judicial decisions, especially in legally complex cases.
- **Budget Constraints:** The Finance Ministry's cost-cutting measures have affected tribunal operations, with budget shortages leading to delays in appointments and poor infrastructure.

- **Lack of Uniform Procedures:** There is no standardised procedure across tribunals, leading to inconsistent application of laws and confusion for litigants. This weakens legal predictability and trust in tribunal verdicts.

Way Forward: To improve the effectiveness of tribunals in India, reforms must focus on ensuring their **independence, professionalism, and efficiency**. **Establishing an autonomous National Tribunals Commission** can bring uniformity in administration and appointments. **Timely filing of vacancies**, defining clear jurisdictional boundaries will enhance both the credibility and functionality of tribunals.

About National Company Law Tribunal (NCLT)

Established: 1st June 2016, Recommended by the Balakrishna Eradi Committee

Purpose: Handles civil corporate disputes under the Companies Act, 2013, and insolvency matters under the Insolvency and Bankruptcy Code (IBC), 2016

Benches: Principal bench in New Delhi with 16 Benches located in major cities like Chennai, Kolkata, Bengaluru, Ahmedabad, etc.

Powers and Functions

- Not bound by CPC; follows natural justice
- Orders have the force of a civil court
- Can review its own orders
- Adjudicates insolvency cases for companies and LLPs under IBC
- Can frame its own rules

Appeals: First Appeal in the National Company Law Appellate Tribunal (NCLAT), Further Appeal in Supreme Court (on legal grounds)

Impeachment of Judges

Context: Opposition in Rajya Sabha (RS) is planning to move an impeachment motion against Allahabad High Court (HC) Judge Justice Shekhar Kumar Yadav.

Constitutional Provisions for Removal of SC/HC Judges

- Articles 124(4) and 217(1)(b) of the Constitution allow the President to remove a judge of the Supreme Court or High Court for proven misbehavior or incapacity.
- Such removal can only take place after both the Lok Sabha and Rajya Sabha pass a resolution in the same session, with a special majority (i.e., a majority of the total membership and at least two-thirds of members present and voting).
- Article 124(5) permits Parliament to make laws governing the process of removal, including how the charges are investigated.

How the Mechanism Balances Independence and Accountability?

- **High Threshold for Removal:** The requirement of a special majority in both Houses makes the process difficult, protecting judges from arbitrary or politically motivated removal.
- **Separation from Executive Control:** The President acts only after Parliamentary approval, ensuring that no judge is removed by the will of the government alone.
- **Judicial Involvement:** The investigation is carried out by a panel of senior legal experts, keeping the process neutral and within the legal domain.

Procedure under the Judges (Inquiry) Act, 1968

- A motion seeking a judge's removal must be backed by at least 100 Lok Sabha MPs or 50 Rajya Sabha MPs.
- The Speaker (LS) or Chairman (RS) decides whether to accept or reject the motion after consulting relevant parties.
- If accepted, a three-member inquiry panel is formed. It consists of: A judge from the Supreme Court, A Chief Justice of a High Court, A legal expert deemed eminent by the Speaker/Chairman
- If the committee finds the judge guilty or incapable, both Houses must pass a removal resolution with a special majority. Only then can the President issue the order for removal.

- **Defined Grounds for Action:** Misbehaviour and incapacity are clear criteria, which prevent the judiciary from being a law unto itself.
- **Checks by Parliament:** Involvement of elected representatives in the removal process keeps judges accountable to democratic institutions.
- **Transparency in Process:** A formal structure under a statutory law (Judges Inquiry Act) ensures that no action is taken without a fair investigation.

Challenges and Criticisms

- **Cumbersome Process:** No judge has ever been successfully removed using this process, making some question its effectiveness.
- **Lack of Intermediate Measures:** The mechanism only provides for removal, but there are no lesser penalties like suspension or warnings for minor offences.
- **Politicization of the Process:** The process is vulnerable to political influence. Parties may shield or target judges based on interests rather than merit. For example, Justice V. Ramaswami was found guilty by an inquiry committee, yet impeachment failed as MPs abstained from voting for political reasons, undermining their quasi-judicial role.
- **Limitations of the In-House Procedure:** The in-house inquiry lacks statutory status, and its findings aren't binding. The recent case of Justice Varma exposed confusion between internal inquiries and the formal process under the Judges (Inquiry) Act, 1968. The government's reliance on only an in-house report was seen as bypassing legal safeguards.
- **Judges Resigning to Avoid Impeachment:** Some judges resign before proceedings conclude, avoiding formal accountability. Examples include Justice Soumitra Sen and Justice P.D. Dinakaran, who resigned before the Lok Sabha vote.

To strengthen judicial accountability, an independent Judicial Complaints Commission can be established to investigate complaints and recommend action, free from executive or judicial interference. A formal code of conduct for judges, including mandatory asset disclosures, would promote ethical self-regulation. Additionally, making inquiry committee reports public, with necessary safeguards, can increase transparency and enhance public trust in the judiciary.

Ad Hoc Judges Appointment

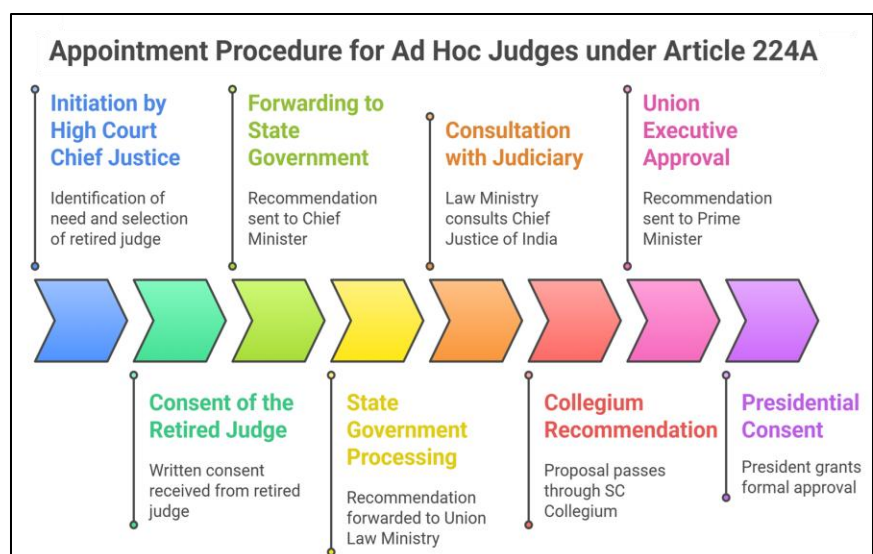
Context: The Supreme Court has proposed appointing retired judges on a temporary (ad hoc) basis to help clear the mounting backlog of criminal cases in various High Courts.

Appointment of Ad Hoc Judges Under Article 224A

- Article 224A allows the Chief Justice of a High Court to **request a retired judge to serve temporarily, with the President's consent.**
- The retired judge has the same powers as a sitting judge during their tenure but is not considered a permanent judge. Both the retired judge and the President must agree to the appointment.

Need for Ad Hoc Judges in India

- **Rising Case Backlog:** Over 4.5 crore cases are pending in Indian



courts, with 87% in district courts and nearly 18 lakh criminal cases in High Courts alone. Nearly 50 lakh cases have been pending for more than 10 years

- **Judicial Vacancies:** High Courts around the country have 327 vacancies against their collective sanctioned strength of 1114 judges. Over 5,000 vacancies exist at the district court level, contributing to delays in case disposal.
- **Slow Rate of Disposal:** According to NITI Aayog (2018), it could take over 300 years to clear the backlog of the cases at the current pace. Delays cost India around 1.5–2% of GDP and rank the country poorly on global justice indicators.
- **Temporary Relief During Transitions:** Ad hoc judges can fill the judicial gap while permanent appointments are being processed, ensuring courts don't sit idle due to vacancies.
- **Expertise and Efficiency:** Retired judges bring years of legal experience, which is valuable in handling complex or technical cases, such as tax or commercial disputes.

Issues with Ad Hoc Judge Appointments

- **Lack of Continuity and Commitment:** Ad hoc judges are temporary and may not have time to understand long-term or complex cases fully, affecting consistency in judgments.
- **Not a Permanent Solution:** Their appointment does not solve the structural problems like regular judicial vacancies or the slow pace of judge recruitment.
- **Accountability Concerns:** Ad hoc judges may not face the same level of oversight or performance reviews as sitting judges, raising questions about transparency.
- **Potential Bias or Influence:** If the selection process isn't transparent, political or personal biases could influence decisions, damaging public trust in the judiciary.
- **Disruption to Judicial Culture:** Courts function on collegiality and coordination. Introducing temporary judges might disturb established courtroom dynamics.
- **Outdated Legal Understanding:** Retired judges may not be well-versed in new legal trends, especially in rapidly evolving areas like technology law or data privacy.
- **Health and Efficiency:** Older judges may face health challenges that could affect their work pace or productivity.
- **Constitutional and Ethical Questions:** Some legal experts argue that Article 224A was meant for rare emergencies, not as a routine response to case backlog. This may risk undermining the principle of a full-time, independent judiciary.

While ad hoc judges offer temporary relief to India's judicial backlog, they are not a substitute for lasting reforms. The focus must remain on filling vacancies, improving infrastructure, ensuring accountability, and strengthening long-term judicial capacity.

Elections in India

One Nation One Election

Context: The One Nation, One Election Bill passed in the Lok Sabha with 269 votes in favor and 198 against. Initially reviewed by a panel led by President Ram Nath Kovind, it will now be examined by a Joint Parliamentary Committee.

About the One Nation, One Election (ONOE) Bill, 2024

The ONOE Bill proposes holding simultaneous elections for the Lok Sabha and all State Assemblies, aiming to improve efficiency, reduce costs, and minimize frequent election-related disruptions.

The initiative involves two key Bills:

1. **Constitution (129th Amendment) Bill, 2024:** Seeks to amend the Constitution to align the terms of the Lok Sabha and State Assemblies. **Introduces Article 82A** to mandate simultaneous elections and outlines procedures for mid-term dissolutions.
2. **Union Territories Laws (Amendment) Bill, 2024:** Updates laws related to Union Territories and Delhi to enable synchronized elections.

It requires a special majority under Article 368 and ratification by at least half the states. It also amends Articles 83, 85, 172, 174, 324, 325 among others, to synchronize election cycles and expand the Election Commission's role.

Key Features of the ONOE Bills

- **Simultaneous Elections:** The 129th Constitution Amendment Bill empowers the Election Commission to conduct Lok Sabha and all State Assembly elections together. The Union Territories Laws (Amendment) Bill extends this provision to UT Assemblies.
- **Start of Simultaneous Elections:** After a general election, the President will notify the start date of simultaneous elections based on the first sitting of the new Lok Sabha. From this date, the terms of all newly formed State and UT Assemblies will align with that of the Lok Sabha.
- **Premature Dissolution:** If the Lok Sabha or any Assembly is dissolved early, fresh elections will be held only for the remainder of its original five-year term. This ensures that elections across all levels realign every five years.
- **Deferring State Elections:** If the Election Commission deems it infeasible to hold a State Assembly election along with others, it can recommend a deferral to the President. The President may then order the state election to be held separately. Even then, its term will end with that of the Lok Sabha. This deferral provision does not apply to UT Assemblies.

Case for Simultaneous Elections in India

- **Cost Savings:** Lok Sabha elections cost the Centre approx. ₹4,000 crores, with state elections adding significantly more. Party and candidate expenses are even higher. Simultaneous polls can cut these costs substantially.
- **Governance Impact:** With frequent state elections, leaders remain in constant campaign mode. The Model Code of Conduct halts new policy announcements for 45–60 days, delaying governance.
- **Administrative Efficiency:** Frequent elections strain district machinery and divert paramilitary forces from regular duties. For example, the 2024 general and state assembly elections spanned 7 phases and required over 3,400 CAPF companies.
- **Voter Turnout:** Simultaneous elections may reduce voter fatigue and boost turnout. When held with national elections, voter turnout rose by 21% in Arunachal Pradesh and 17% in Assam.
- **Economic Benefits:** Comparing changes in real national GDP growth before and after simultaneous and non-simultaneous elections shows that real GDP growth is, on average, 1.5 percentage points higher following simultaneous elections. This difference is significant, equating to INR 4.5 lakh crores in FY 2024, or half of public health spending.
- **Social Unity:** Frequent, high-stakes elections promote polarizing campaigns. Social media amplifies this, increasing societal divisions in India's diverse population.

Concept of One Nation One Election

- This concept was first brought to Parliament by a Law Commission Report (1999) by Justice BP Jeevan Reddy and was later discussed in a NITI Aayog discussion paper (2017) by Bibek Debroy and Kishore Desai.
- International examples include **South Africa**, where national and provincial elections are held together, and **Sweden**, which conducts all levels of elections on a fixed date every four years.

Case Against Simultaneous Elections in India

- **Neglect of Local Issues:** Simultaneous elections may sideline regional concerns. National parties could dominate by focusing on broader themes like national unity or security, weakening regional voices and fueling discontent in a federal setup.
- **Cost Myths:** Despite expected savings, the need for more EVMs, VVPATs, and continued costs from by-elections and legislative council/Rajya Sabha elections remain significant.
- **Reduced Accountability:** Frequent elections promote political responsiveness. Voter enthusiasm is often higher in local/state polls, enhancing accountability at different governance levels.

- **Constitutional Challenges:** It may require diluting key provisions like the no-confidence motion and fixed legislative terms-undermining parliamentary oversight and requiring major constitutional amendments.
- **Persistent Candidate Spending:** While administrative costs may drop, political parties and candidates would continue spending heavily, with expenses merely shifting in time.
- **Federalism at Risk:** Aligning all elections could require shortening or extending terms arbitrarily, weakening state autonomy and the spirit of federalism.
- **Security Pressure:** Conducting nationwide polls simultaneously would demand massive deployment of paramilitary forces, potentially affecting their core duties.

Simultaneous elections may boost stability, cut costs, and improve governance, but pose challenges like logistical hurdles, political imbalance, and risks to smaller parties. Success depends on careful planning and strong democratic safeguards.

Voter ID linking with Aadhar

Context: The Election Commission (ECI) has introduced a drive to link Voter ID cards (EPIC) with Aadhaar numbers to eliminate duplicate and bogus voter entries, thereby improving the integrity of the electoral roll.

Background

- **NERPAP Initiative (2015):** The Election Commission of India launched the National Electoral Rolls Purification and Authentication Programme (NERPAP) to remove duplicate and fake entries from electoral rolls by linking Aadhaar with Voter ID (EPIC).
- **Supreme Court's Restriction (2015):** The Supreme Court ruled that Aadhaar could only be made mandatory for specific purposes like welfare schemes and income tax PAN linking. As a result, the NERPAP initiative was discontinued.
- **After Puttaswamy Judgment (2017):** In the landmark Puttaswamy case, the Supreme Court upheld the constitutional validity of Aadhaar but emphasized privacy safeguards. Thus, EC sought legal changes to allow Aadhaar-Voter ID linking.
- **Legal Amendments (2021):** Parliament amended the **Representation of the People Act** and related rules: Voters had to provide Aadhaar through Form 6 (for new registrations) and Form 6B (for existing voters). **Aadhaar submission was made voluntary.**
- **Supreme Court Challenges (2023):** The amendments were challenged in court over privacy and misuse concerns. The Election Commission assured the Supreme Court that Aadhaar was not mandatory, as the word 'may' has been used in the amendments.

Benefits of Linking Aadhaar with Voter ID

- **Removes Duplicate Entries:** Helps eliminate multiple registrations, ensuring clean and accurate voter lists. In 2022, around 1 crore duplicate entries in the electoral roll were removed or corrected.
- **Efficient Roll Maintenance:** Over 650 million Aadhaar linkages have made it easier to update and manage voter rolls.
- **Reduces Voter Fraud:** Fewer duplicates mean more trust and fairness in elections.
- **Helps Mobile Voters:** People who migrate can update their details more easily and stay eligible to vote.
- **Saves Costs:** Accurate rolls reduce the need for repeated verifications, saving time and resources.

Concerns with Aadhaar-Voter ID Linking

- **Risk of Exclusion:** Those without Aadhaar, especially poor or marginalized people, may be left out despite alternate ID options. Roughly 100 million individuals in India do not have an Aadhaar number as of FY 2023.
- **Legal Challenges:** As per the Puttaswamy judgment, any Aadhaar use must be necessary and proportionate. Forcing Aadhaar may violate the right to choose identification methods. Lal Babu Hussein (1995) also held that the right to vote cannot be limited by demanding specific ID documents.
- **Biometric Errors:** Aadhaar has known biometric failures (up to 12%). In 2015, Aadhaar-voter linkage in Andhra Pradesh and Telangana led to 55 lakh voters being wrongly deleted.

- **Privacy Worries:** Linking Aadhaar with voter data raises concerns about data misuse and mass surveillance. Strong data protection laws are essential.
- **Not Proof of Citizenship:** Aadhaar confirms residence, not citizenship. Hence, it can't be fully relied upon to stop non-citizens from entering the electoral rolls.
- **Better Alternatives Exist:** Methods like door-to-door surveys, though slower, may be more accurate and inclusive in updating voter lists compared to digital linking.

Way Forward

- **Protect Right to Vote:** Voting is a constitutional right and must not be limited by mandatory Aadhaar linkage.
- **Create Public Awareness:** Educate citizens on the voluntary nature and benefits of Aadhaar-Voter ID linking, like reducing duplicates.
- **Ensure Privacy and Transparency:** Address privacy concerns through strong data protection laws and clear messaging that voting secrecy is safe.
- **Update Forms:** Revise Forms 6 and 6B to clearly show alternative ID options, avoiding pressure to submit Aadhaar.

Electoral Trusts

Context: Following the Supreme Court's February 2024 verdict scrapping electoral bonds, donations through electoral trusts have surged.

- According to the Election Commission, contributions to the Prudent Electoral Trust tripled from ₹363.16 crore to ₹1,075.7 crore in 2023–24, with nearly 75% coming after the ruling.

About Electoral Trusts (ETs)

- An Electoral Trust is a not-for-profit entity registered under the Companies Act, 1956 (Now registered under Section 8 of the Companies Act 2013). It was created solely to collect voluntary donations from individuals and companies and distribute them to political parties.
- **Purpose:** To promote transparency in political funding, reduce unaccounted money, and provide a formal channel for donations.
- **Legal Framework:** Governed by the Electoral Trusts Scheme, 2013 and Rule 17CA of the Income Tax Rules, 1962. Approval and oversight are by the Central Board of Direct Taxes (CBDT).
- **Key Features**
 - **Active Trusts:** 19 trusts are currently registered, with Prudent Electoral Trust being the largest, funded by several major corporations.
 - **Contribution Methods:** Only via cheque, bank draft, or digital transfer. Cash donations are not allowed.
 - **Fund Distribution:** Must distribute at least 95% of donations (including any surplus) to registered political parties each financial year. May retain up to 5% or ₹3 lakh (whichever is lower) for administrative expenses.
 - **Rules and Restrictions:** ETs cannot use funds for the benefit of their members or contributors. Cannot engage in activities beyond distributing political donations.
 - **Transparency:** Required to maintain records of all donations received and distributed. Must file audited accounts and annual reports with the Income Tax Department.

Feature	Electoral Trusts (ETs)	Electoral Bonds (EBs)
Definition	Non-profit entities registered under Companies Act, 1956 for collecting and distributing political donations	Bearer instruments (like promissory notes) issued by SBI to allow anonymous donations to political parties
Launched Under	Electoral Trusts Scheme, 2013	Electoral Bond Scheme, 2018 (via Finance Act amendments)
Eligibility to Donate	Indian citizens, registered Indian companies, firms, HUFs	Indian citizens, companies or firms incorporated in India

Foreign Donations	Not allowed	Indirectly allowed after 2016 amendment to FCRA
Transparency	Donor and recipient names disclosed in audited reports to tax authorities	Complete anonymity - names of donor and recipient are not disclosed publicly
Regulatory Oversight	Accounts audited and submitted to Income Tax Department	Regulated by Ministry of Finance via SBI, but with minimal transparency
Donor Identification	Partially public (names disclosed in reports, but no link to specific political party)	Completely anonymous – donor identity hidden from public, media, and even voters
Current Status	Still operational and legal	Struck down by Supreme Court in 2024

Advantages of Electoral Trusts

- **Transparency in Political Funding:** Electoral trusts mandate detailed reporting of contributions and distributions, reducing reliance on opaque channels like cash donations. According to the Association for Democratic Reforms (ADR), the use of electoral trusts has significantly improved donation traceability.
- **Regulation of Donations:** Contributions are limited to Indian citizens, registered companies, firms, and HUFs, thereby preventing foreign influence in political funding. This aligns with the Foreign Contribution (Regulation) Act (FCRA), 2010.
- **Streamlined Fund Distribution:** Trusts are required to distribute at least 95% of collected funds to eligible political parties, ensuring that donations are used for their intended purpose.
- **Legal and Tax Compliance:** Electoral trusts function under defined legal frameworks and must submit audited accounts, enhancing accountability and regulatory compliance. Donors receive tax benefits under Sections 80GGB and 80GGC of the Income Tax Act, encouraging legal donations.
- **Anonymity with Transparency:** ETs release separate lists of donors and beneficiary parties. This balances the Right to Privacy (Article 21) with the public's Right to Information (RTI).

Disadvantages of Electoral Trusts

- **Limited Donor-Recipient Traceability:** When there are multiple donors and beneficiaries, it becomes difficult to identify which donor supported which political party, reducing full transparency.
- **Operational Restrictions:** Trusts can spend only up to 5% of their income (capped at ₹3 lakh) on administrative expenses, which may limit effective operations. In contrast, Political Action Committees (PACs) in the U.S. have more flexibility in administrative spending.
- **Exclusion of Foreign Donations:** While this safeguards national interest, it may limit legitimate funding opportunities for parties eligible to receive foreign funds under other frameworks. Countries like the U.K. and Canada allow limited foreign contributions under strict oversight.
- **Funding Concentration:** Major trusts (e.g., Prudent Electoral Trust) dominate political funding, primarily supporting ruling parties, sidelining smaller parties and weakening political diversity.
- **Corporate Influence & Cronyism:** Corporate donors use trusts to channel funds, often to parties in power, promoting crony capitalism and risking biased policymaking.

Electoral trusts are a significant step toward transparency and regulation in political funding. However, limitations in donor-recipient clarity and operational challenges highlight the need for further reforms to maximize their effectiveness.

Right to Contest Elections and Disqualification

Context: The Supreme Court (SC) is currently hearing petitions that seek a lifetime ban on individuals convicted of criminal offenses from contesting elections.

Related Representation of the People Act, 1951 (RPA 1951) Provisions

- **Section 8(3), RPA 1951:** A person convicted of a criminal offense with a sentence of two years or more is disqualified from contesting elections during imprisonment and for six years after release.

- **Section 8(1), RPA 1951:** Lists specific offenses (e.g., promoting enmity, rape, untouchability, unlawful association, corruption) that lead to immediate disqualification, regardless of sentence duration, and extend six years beyond release.

Why a Lifetime Ban Being Demanded?

- **Upholding Integrity in Public Office:** Allowing individuals convicted of heinous crimes (e.g., rape, murder, corruption) to contest elections will weaken public trust in democracy. Example: Singapore has a zero-tolerance policy on corruption-convicted individuals. They are permanently barred from contesting elections.
- **Preventing Criminalization of Politics:** According to ADR (Association for Democratic Reforms), in 2024, 46% of MPs have criminal cases against them, and 31% face serious charges.
- **Ensuring Equal Standards for Public Servants and Politicians:** Government employees with criminal convictions face permanent disqualification. Politicians should be held to the same standard.
- **Ensuring Free and Fair Elections:** Candidates with criminal backgrounds have a higher success rate (15.4%) compared to those with clean records (4.4%) (ADR). A lifetime ban would create a level playing field and promote merit-based leadership.
- **Restoring Public Trust in Democracy:** Voters expect clean and transparent governance. A lifetime ban would help ensure that only those with a clean record can represent the public.

Counterarguments Against a Lifetime Ban

- **Judicial Delays and Risk of Wrongful Convictions:** India's slow judicial system increases the risk of wrongful convictions. Many politicians face politically motivated cases that may take years or decades to resolve.
- **Risk of Political Vendetta:** Convictions can be used selectively to target opponents. For example, in 2023, an MP was immediately disqualified following a conviction in a defamation case. This raises concerns about the potential misuse of legal provisions.
- **Consistency with Other Disqualifications:** Other disqualifying conditions under the Constitution, such as office of profit or insolvency, are not permanent. Making criminal conviction the only lifetime disqualification would create inconsistency.
- **Scope for Reform and Rehabilitation:** Everyone deserves a second chance. A lifetime ban would deny any opportunity for reform and reintegration, regardless of the crime's nature or the individual's later conduct.
- **Legislative Authority:** The Centre argues that disqualification rules fall within Parliament's exclusive domain, as per Articles 102(1)(e) and 191(1)(e). Judicially imposing a lifetime ban would amount to rewriting the law, which courts are not empowered to do.

Key Judicial Decisions on Decriminalization of Politics

- **ADR Case (2002):** It made it mandatory for candidates to disclose criminal records while filing nominations.
- **CEC vs Jan Chaukidar (2013):** Undertrial prisoners cannot contest elections as they are not 'electors'. Parliament later overturned this ruling through an amendment.
- **Lily Thomas Case (2013):** Struck down Section 8(4) of the RP Act, which had protected convicted MPs/MLAs. Now, a stay of conviction is needed to avoid disqualification.
- **Lok Prahari Case (2018):** Disqualification is reversed if a higher court stays or overturns the conviction. A stay on sentence alone is not enough, stay must be on conviction.

EC's Quasi-Judicial Role

- **Section 11, RPA 1951** grants the Election Commission (EC) the power to remove or reduce the disqualification period of a convicted person.
- In a notable case, the **EC reduced MLA Prem Singh Tamang's disqualification from six years to 13 months in 2019**, despite his corruption conviction.

Way Forward for Reducing Criminalisation of Politics

- **Amend Representation of the People Act (1951):** Introduce legal provisions for a lifetime ban on individuals convicted of heinous crimes like rape, murder, corruption, or terrorism.

- **Clearly Define Serious Offenses:** Create a legal framework to distinguish minor from major crimes, especially those involving moral turpitude, to avoid misuse.
- **Fast-Track Judicial Oversight:** Set up a three-tier system (Trial Court → High Court → Supreme Court) for quick and fair review of disqualification cases.
- **Strengthen Political Accountability:** Political parties must deny tickets to serious offenders; EC should penalize violators and link state funding to compliance.
- **Raise Public Awareness & Promote Reform:** Educate voters on candidates' criminal records through campaigns like 'Know Your Candidate', with support from media and civil society (e.g., ADR reports).
- **Apply Civil Service Standards to Politicians:** Implement equal accountability by applying rules like Article 311 protections to MPs/MLAs, aligning them with public servants.

Appointment of CEC

Context: Gyanesh Kumar has been appointed as India's 26th Chief Election Commissioner, the first under the CEC Appointment Act, 2023.

Chief Election Commissioner and Other Election Commissioners Act, 2023	
Purpose of the Act	Reforms the appointment process, introduces eligibility criteria, and modifies service conditions of the Chief Election Commissioner (CEC) and other Election Commissioners (ECs).
New Selection Process	CEC and ECs appointed by the President on the recommendation of a Selection Committee comprising: 1. Prime Minister (Chairperson) 2. A Union Cabinet Minister (nominated by PM) 3. Leader of Opposition (or leader of the largest opposition party in LS)
Search Committee	• Headed by the Law and Justice Minister • Includes two other members (not below the rank of Secretary to GoI) • Prepares a list of 5 eligible candidates
Salary	Aligned with Supreme Court Judges
Eligibility Criteria (New)	• Must be of high integrity • Must have experience in election management • Must be a serving/retired Secretary (or equivalent) to GoI
Tenure	6 years or until 65 years of age, whichever is earlier
Removal Process	• CEC: Same as Supreme Court Judge under Article 324(5) of the Constitution • ECs: Can be removed only on recommendation of the CEC

Concerns Regarding the CEC and Other ECs Act, 2023

- **Dominance of the Executive in the Selection Committee:** The Act removes the Chief Justice of India (CJI) from the selection committee (as given in *Anoop Baranwal v. Union of India (2023)*), giving the ruling government a majority. This weakens the Election Commission's independence.
- **Disregard for Search Committee Recommendations:** The selection committee can appoint individuals outside the Search Committee's suggested list, undermining merit-based appointments. E.g: In CBI selections, bypassing the panel has led to allegations of favoritism.
- **Narrow Eligibility Criteria:** Eligibility is limited to those who have served as government secretaries, excluding legal experts and election professionals. This may favor bureaucrats with prior affiliations to the executive.
- **Unequal Removal Procedures for CEC and ECs:** The CEC can only be removed like a Supreme Court judge, but ECs can be removed on the CEC's recommendation-creating an imbalance. A biased CEC could remove dissenting ECs.
- **Decision-Making During Vacancies:** If the Leader of Opposition post is vacant (such as before elections) the selection committee may consist only of government members, compromising neutrality.

- **Lack of Administrative Autonomy:** The Act overlooks the need for an independent ECI secretariat (like Parliament or the Supreme Court). Continued dependence on the government for resources limits ECI's functional independence.

Way Forward

- Enhancing Selection Committee Balance by including neutral members like the CJI.
- Expanding Eligibility Criteria to include legal experts, election specialists, and retired judges.
- Restoring Salary Parity with SC judges to ensure financial independence.
- Reviewing Removal Process to ensure removal procedures are in line with constitutional principles of fairness and independence.
- Establishing Periodic Oversight to assess Act's impact on electoral integrity and recommend improvements.

Should NOTA Be Included in All Elections Compulsorily?

Context: The Vidhi Centre for Legal Policy filed a PIL urging the Supreme Court to make the NOTA option compulsory in all elections, including uncontested ones.

What is NOTA? (None of the Above)

- NOTA stands for "None of the Above." It is a voting option that allows a voter to reject all candidates contesting an election.
- NOTA was introduced in 2013 by the Election Commission of India, following a Supreme Court order in response to a PIL by the People's Union for Civil Liberties.
- **How It Works:** NOTA appears as the last option on the Electronic Voting Machine (EVM). If a voter chooses NOTA, it means they do not support any candidate on the list.
- **Purpose:**
 - To give voters the right to express disapproval of all contesting candidates.
 - To protect the secrecy of the ballot-earlier, voters who didn't want to vote for anyone had to inform the presiding officer, which compromised privacy.
- In Bihar Assembly Elections (2015), NOTA received 2.48% of the vote-the highest so far. This reflects a significant section of voters wanting better choices.



Should NOTA Be Made Compulsory in All Elections?

A. Supporting Arguments

- **Expands Voter Choice and Democratic Expression:** Compulsory NOTA lets voters reject all candidates without abstaining, upholding voter autonomy and democratic choice, even in uncontested or single-candidate elections.
- **Promotes Political Accountability:** NOTA can push political parties to field more competent and ethical candidates, as high NOTA counts reflect voter dissatisfaction.
- **Signals Voter Discontent:** NOTA votes alert the Election Commission and parties to public frustration, potentially prompting corrective political responses.
- **Paves Way for Electoral Reforms:** Compulsory NOTA could lead to reforms like re-elections if NOTA crosses a set threshold or the introduction of minimum vote share requirements.
- **Preserves Secrecy and Agency:** It allows voters to dissent while maintaining ballot secrecy, supporting the right to reject as upheld by the Supreme Court.

B. Opposing Arguments

- **Limited Practical Impact:** NOTA has received only about 1% of votes in Lok Sabha elections and doesn't affect outcomes, as the leading candidate still wins.
- **No Legal Consequence:** NOTA doesn't lead to re-elections or disqualifications, making it largely symbolic, even when the majority selects it.
- **Rare Use in Uncontested Elections:** Only 29 Lok Sabha candidates have been elected unopposed since 1952, making mandatory NOTA a solution for a rare scenario.

- **Potential for Misuse and Apathy:** Mandatory NOTA could lead to careless rejection of all candidates, weakening informed participation and promoting voter apathy.

Way Forward

- **Legal Constraints:** Making NOTA mandatory needs Parliamentary amendment, not a court order.
- **Minimum Vote Threshold:** Set a minimum vote limit to win, avoiding low-turnout victories.
- **Legitimacy to NOTA:** Allow re-election if NOTA gets high vote share.
- **Voter Awareness:** Run campaigns to educate people about NOTA's role.

Governance

Census, Delimitation and Women Reservation

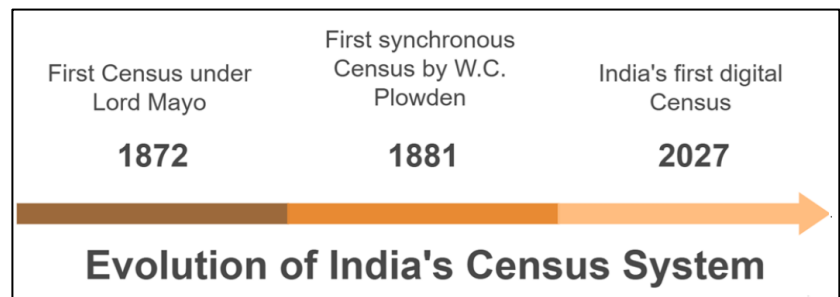
Context: Government plans to conduct the long-delayed Census in 2025, aiming for completion by 2026. This exercise is essential for two major reforms: Delimitation of parliamentary and assembly constituencies; Implementation of the 33% women's reservation in elected bodies.

Understanding the Census

- A census is a decadal exercise that collects, compiles, and analyzes demographic, social, and economic data about every individual in India, regardless of age, gender, or socio-economic status. It provides a comprehensive snapshot of the population at a given time.

Objectives of the Census

- Determine the size and composition of the population.
- Gather data on age, gender (sex ratio), literacy, occupation, religion, language, migration, and housing conditions.
- Serve as the basis for policy making, resource allocation, and development planning.



Legal and Institutional Framework

- **Listed in the Union List (Entry 69) of the Seventh Schedule.**
- Conducted under the **Census Act, 1948** (non-cooperation is penalized under Section 11).
- The **Office of the Registrar General** and Census Commissioner of India (Ministry of Home Affairs) oversees the exercise.

No governance without data, and no data without the Census.

Why the Census is Vital for Delimitation

- Delimitation is the process of redrawing constituency boundaries to ensure equal representation based on population changes. It follows the principle of "one citizen, one vote, one value."
- **Constitutional Basis:** Article 82 (Lok Sabha) & Article 170 (State Assemblies) mandate readjustment of seats after each Census.
- Conducted by the Delimitation Commission (formed four times: 1952, 1963, 1973, 2002).
- **Current Status:**
 - **Seat freeze since 1971:** To encourage population control, the 42nd Amendment (1976) froze seat allocation until 2000, later extended to 2026 by the 84th Amendment.
 - **Post-2026 Scenario:** The 2026 Census will trigger fresh delimitation, likely increasing seats in states with higher population growth (e.g., Northern states).
 - **Southern States' Concerns:** States with lower fertility rates (e.g., Tamil Nadu, Kerala) may lose political representation.

Why Census Data is Critical for Delimitation?

- **Ensures Equal Representation:** Census data provides accurate population counts, helping to make sure each MP or MLA represents roughly the same number of people. Without it, some votes may carry more weight than others.
- **Accounts for Population Shifts:** As people move or populations grow, constituency sizes become unequal. Census updates correct these imbalances to prevent over- or under-representation. For instance, one MP represented 7.32 lakh people in 1951; by 2024, it rose to around 27 lakh.
- **Determines Reserved Seats:** The number of SC and ST reserved seats is based on their population share. Only the Census can ensure accurate, fair representation for these communities.
- **Balances Regional Representation:** Census-based delimitation can shift power among states. States with higher population growth may gain seats, while others may lose-raising concerns about regional equity and federal balance.
- **Starts the Legal Process:** The Census is the first legal step toward delimitation. Once done, a Delimitation Act is passed and a Commission is formed to redraw boundaries. This process is meant to be transparent and free from political interference.

How the Census Enables Women's Reservation

- The 106th Constitutional Amendment (2023) reserves 33% seats for women in Lok Sabha and State Assemblies. Implementation depends on delimitation, which requires updated Census data.
- Women's reservation will be valid for 15 years from the start date decided by Parliament. Implementation can happen only after the next Census and delimitation.

Role of Census in Implementation

- **Redraws Constituency Boundaries:** Census data ensures that each constituency represents a similar population size before reserving seats.
- **Enables Seat Rotation:** Reserved seats for women will rotate after each delimitation. This rotation depends on fresh population figures.
- **Ensures Fair Representation:** Accurate data helps prevent regional imbalance in women's representation.

As India prepares for a new phase of democratic expansion, the timely and accurate completion of the Census is critical. It will lay the groundwork for a more representative, inclusive, and balanced federal structure, reinforcing the core values of the Constitution-justice, equality, and democracy for all.

MGNREGA

Context: The Parliamentary Standing Committee on Rural Development has proposed conducting an independent survey to assess the effectiveness and identify the shortcomings of the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

About Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	
Launch	2005
Implementing Agency	Ministry of Rural Development

Census 2027

- The Ministry of Home Affairs has announced that India will conduct its next population census by **March 1, 2027**.
- This will be the first-ever digital census and the first post-Independence census to include caste data.
- The Census will be carried out in two phases, starting from April 1, 2026, and concluding by February 28, 2027.
- **Key Features of the 2027 Census**
 - **First Fully Digital Census:** Data will be collected using mobile apps and digital platforms instead of paper forms, making the process faster and more efficient.
 - **Two-Phase Process:**
 - **Phase 1:** House Listing and Housing Schedule
 - **Phase 2:** Population Enumeration
 - **Caste Enumeration:** For the first time since Independence, the census will include a detailed caste-wise survey to improve policy planning and social justice measures.

Objective	Guarantee 100 days of employment annually to adult members of any rural household for unskilled manual work in public projects
Number of Workers	12 crore active workers (as of 2025-26)
Features	
Legal Right to Work	Ensures a legal right to work, addressing chronic poverty through a rights-based framework
Gender Inclusion	Mandates at least one-third of beneficiaries to be women
Wage Regulations	Wages are set according to the statutory minimum wages specified for agricultural laborers under the Minimum Wages Act, 1948
Demand- Driven	Provides work within 15 days of request or provides an 'unemployment allowance' if work is not provided
Decentralized Planning	Empowers Panchayati Raj Institutions (PRIs) in planning and execution, with Gram Sabhas recommending works and overseeing at least 50% of implementation
Major Outcomes of MGNREGS (2014–2025)	
Employment Generation	A total of 3029 crore person-days of employment were generated between 2014–25, marking an 82% increase over the 1660 crore person-days created during 2006–14.
Asset Creation	8.07 crore rural assets were developed from 2014–25, compared to 1.53 crore in 2006–14 - a 526% increase, particularly in geotagged and quality-assured assets. - Focus on individual assets (e.g., wells, cattle sheds) increased significantly from 17.6% in 2013–14 to 56.99% in 2024–25.
Focus Areas	- Among the 266 permissible categories of work, key areas include Agriculture and Allied sectors, Natural Resource Management, and Rural Infrastructure. - These efforts enhance livelihood security, ecological sustainability, and promote community-level development.

Challenges of MGNREGA

- **Insufficient Work Days:** MGNREGA guarantees only 100 days of work per household annually, which is inadequate for sustained livelihood. In practice, the national average often falls below 50 days.
- **Poor Quality of Assets:** Many rural works are poorly executed and often misaligned with local needs and long-term development priorities.
- **Wage Issues:** Though MGNREGA supports wage stability, wages remain below the minimum wage in many states, violating Article 23 (forced labour) and Article 39(d) (equal pay). In 17 states & UTs, MGNREGA wages are lower than minimum wages.
- **Insufficient and Delayed Fund Disbursal:** Most states miss the 15-day wage payment deadline, and compensation for delays is rarely given. Over 80% of funds are exhausted within six months, delaying projects.
- **Policy Reform & Monitoring:** Despite valuable wage reform suggestions from experts like Jean Drèze and Anoop Satpathy, recommendations are often ignored. The Consumer Price Index for Agricultural Labourers (CPI-AL) with a 2009 base year is still used for wage indexing, leading to undervaluation.
- **Caste-based segregation:** Only 26% of payments to non-SC/ST workers met the 7-day deadline, compared to 46% for SCs and 37% for STs, worse in poorer states like Odisha, MP, and Jharkhand.
- **Issues with Online Attendance:** The National Mobile Monitoring Software (NMMS) App faces problems like poor internet, digital illiteracy, and lack of smartphones. Only 31% of rural Indians use the internet, hampering attendance tracking.

Key Recommendations by the Parliamentary Committee on MGNREGA

- **Independent National Survey:** Conduct a transparent, countrywide survey to assess worker satisfaction, wage delays, participation trends, and financial irregularities for policy improvement.

- **Tackle Participation Inequities:** Study district-wise SC/ST and women participation to ensure equal access and strengthen inclusion.
- **Scheme Revamp:** Re-evaluate MGNREGA's structure and processes to meet new socio-economic and environmental challenges.
- **Increase Workdays:** Raise guaranteed workdays from 100 to 150; for STs in forest areas and climate-affected regions, increase to 200 days.
- **Wage Revision:** Recommend raising base wage to ₹400/day in line with inflation. FY 2025–26 rates range from ₹241 (Nagaland) to ₹400 (Haryana); national average: ₹294. Anoop Satpathy panel (2019) proposed ₹375/day, but only Goa and Haryana meet this.
- **Timely Wage Payments:** Strengthen disbursement systems and raise compensation for delays above the current 0.05% of unpaid wages/day.
- **Social Audits:** Conduct regular audits and prepare a Social Audit Calendar to improve transparency and accountability.
- **Job Card Deletions:** Over 5 million job cards were deleted in 2022–23 due to minor errors. There is a need to recommend manual verification to prevent unjust exclusion.
- **Address Regional Disparities:** Implement Amarjeet Sinha Committee (2022–23) suggestions to reduce spending gaps between poorer states like Bihar and better-off ones like Tamil Nadu.

Challenges Faced by Civil Services

Context: On Civil Services Day (April 21), Cabinet Secretary T.V. Somanathan highlighted the vital role of civil services in upholding and strengthening Indian democracy.

Evolution of Civil Services in India

1. **British Era (1858 onwards):** The Indian Civil Service (ICS) was created by the British to manage colonial administration. Recruitment was based on merit as recommended by the Macaulay Report (1854). Exams were held in London and conducted in English, limiting Indian participation. Officers handled revenue collection, maintained law and order, and implemented British policies.
2. **Post-Independence (from 1947):** The Union Public Service Commission (UPSC) replaced the British recruitment system, ensuring impartial and merit-based selection. The ICS transformed into the Indian Administrative Service (IAS) and other All India Services, under Articles 312 to 315 of the Constitution. Sardar Vallabhbhai Patel called civil services the “**steel frame of India**”, highlighting their foundational role in nation-building.

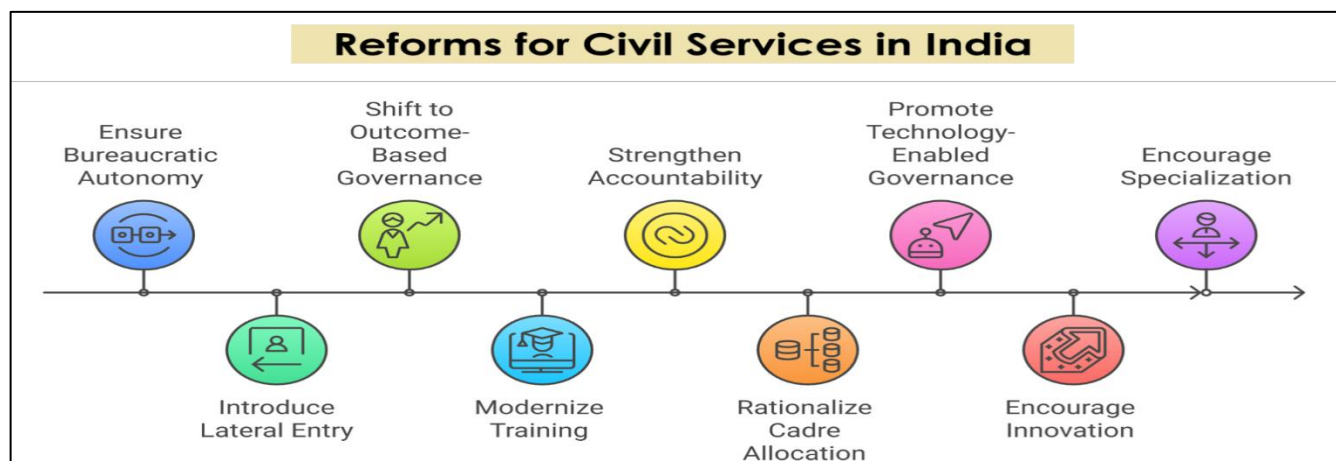
Role of Civil Services in India

- **Policy Implementation:** Civil servants implement laws and policies like MGNREGA and Digital India, ensuring effective service delivery and benefits reach the grassroots level.
- **Policy Formulation and Advisory Support:** They advise ministers, draft bills, and prepare cabinet notes, offering expert inputs to design practical and effective government policies.
- **Administrative Continuity and Stability:** Their permanent and apolitical nature ensures stability and smooth functioning during government changes, emergencies, or political transitions.
- **Service Delivery:** Civil servants are directly responsible for delivering essential public services, including health, education, infrastructure, and welfare programs. Their efficiency determines the quality and reach of these services to the public.
- **Socio-Economic Development:** They lead development planning and welfare schemes, especially in rural areas, ensuring inclusive growth and reducing social and economic disparities.
- **Law and Order:** Officers from services like the Indian Police Service (IPS) maintain public order, manage law enforcement, and uphold constitutional rights.
- **Crisis and Disaster Management:** They coordinate relief and rehabilitation during disasters, pandemics, or unrest, ensuring timely government response and public safety.

- **Quasi-Judicial and Regulatory Functions:** In roles such as district magistrates, commissioners, or tribunal members, civil servants adjudicate disputes, grant approvals, and ensure compliance with laws and regulations.
- **Promoting Accountability and Transparency:** They use tools like e-governance, citizen charters, and social audits to ensure transparent, responsive, and accountable public administration.

Major Issues Faced by Civil Services in India

- **Politicization and Loss of Neutrality:** Political interference undermines the independence and objectivity of civil servants. Transfers and promotions are often politically driven. DARPG (2010) found 78% of respondents felt influence shaped postings; only 24% believed they were merit-based.
- **Generalist vs. Specialist Divide:** Most civil servants lack domain expertise, affecting policy making in technical fields like health and digital governance. Specialist services face slow growth. COVID-19 revealed gaps in public health expertise at decision-making levels.
- **Lack of Accountability:** Performance reviews are weak, with few rewards or penalties. Promotions favor seniority over merit. No structured KPI (Key Performance Indicator) system exists to assess officers' impact or effectiveness.
- **Corruption and Ethical Decline:** Discretionary powers are misused, and corruption is widespread in-service delivery and regulation. In the 2024 Corruption Perceptions Index (CPI), India ranked 96 out of 180 countries in perceived corruption.
- **Procedural Delays and Red Tapism:** Bureaucracy prioritizes rules over outcomes, delaying decisions. Long approval chains slow projects. For example, many infrastructure works stall due to multiple bureaucratic clearances.
- **Poor Coordination and Departmental Silos:** Departments often work in isolation, causing duplication and weak coordination. This limits effectiveness in cross-cutting schemes like urban planning and climate response.
- **Resistance to Reform and Innovation:** Civil services often resist administrative reforms and are slow to adopt new technology. Data analytics, AI, and GIS tools are underused. Many innovations remain limited to pilot projects, without being scaled up for broader impact.
- **Outdated Recruitment and Training:** Recruitment focuses on rote learning, not practical skills. Training is outdated and lacks exposure to modern tools. Officers often lack knowledge in cybersecurity and digital governance.
- **Over-centralization and Heavy Workload:** India has a low bureaucrat-to-citizen ratio, leading to overburdened officers managing multiple roles. As of January 2024, there were 1,316 IAS and 586 IPS officer vacancies, straining service delivery.
- **Frequent Transfers:** Civil servants are often transferred too frequently, disrupting policy continuity and demotivating officers. This affects long-term planning and weakens accountability. For instance, IAS officer Ashok Khemka was transferred over 57 times for his anti-corruption efforts.



Government Initiatives for Improving Civil Services in India

- **Prime Minister's Awards for Excellence in Public Administration:** Given annually on Civil Services Day, these awards recognize innovative officers and teams, promoting excellence and best practices in public administration.
- **Lateral Entry in Civil Services:** Introduced in 2018, lateral entry recruits experts from outside to senior roles, bringing domain expertise, fresh ideas, and addressing IAS shortages.
- **Mission Karmayogi:** Launched in 2020, it reforms civil services through continuous training, digital learning (iGOT), role-based competencies, and performance-linked career growth.

Prime Minister Narendra Modi has emphasized the need for:

- Accelerated and expanded reforms across sectors such as infrastructure, renewable energy, internal security, and social welfare.
- Civil servants prioritize integrity, innovation, and service over status.
- Greater sensitivity to the needs of the underprivileged and a citizen-first approach, invoking the principle of "Nagrik Devo Bhava" (citizen is god).

Local Governance

Panchayati Raj

Context: The Lok Sabha speaker recently inaugurated the Panchayat Se Parliament 2.0 program to commemorate the 150th birth anniversary of tribal icon Birsa Munda.

About Panchayati Raj Institutions (PRIs)

- The 73rd Amendment to the Indian Constitution, passed in 1992, introduced a structured system of decentralized governance in rural areas.
- It gave constitutional status to Panchayati Raj Institutions (PRIs) and is included in Part IX (Articles 243 to 243-O) of the Constitution.

Challenges Faced by PRIs

- **Financial Constraints and Dependence:** Panchayats earn only about 1% of their revenue through local taxes; 95% of their revenues come from grants provided by the Centre and the States.
- **Limited Devolution of Powers and Functions:** No state in India has fully transferred all the 29 subjects listed in the Eleventh Schedule of the Constitution to the Panchayati Raj Institutions (PRIs). PRIs act more as implementation bodies for central schemes than as decision-makers.
- **Lack of Human Resources:** A shortage of trained staff (such as secretaries, engineers, and computer operators) weakens administration and service delivery. For instance, 72% of the total

Key Provisions of the 73rd Constitutional Amendment Act, 1992

Three-Tier System	• Gram Panchayat (Village level) • Panchayat Samiti (Block level) • Zilla Parishad (District level) Note: States with population < 20 lakh are not required to form Panchayat Samiti (Article 243B)
Population Criteria	Panchayats are established in villages with a minimum population of 500
Regular Elections	Panchayat elections must be held regularly as per constitutional provisions
Minimum Age to Contest	21 years is the minimum age to contest elections at any panchayat level
Reservation of Seats	Reserved for SCs, STs, and Women (minimum one-third of seats); also applies to Chairperson posts
Power and Functions	Providing for the powers, authority, and responsibilities of panchayats, including the preparation of plans for economic development and social justice and the implementation of schemes for the development of agriculture, cottage and small-scale industries, education, health, and other sectors
State Finance Commission	Set up by Governor in each state to recommend: Distribution of taxes, Grants-in-aid, Revenue sharing with panchayats
State Election Commission	Independent body to conduct panchayat elections in each state
Dissolution and Vacancies	Provisions for early dissolution of panchayats and filling of casual vacancies

sanctioned strength of 8,419 Panchayat Secretary posts were vacant, while 413 posts (20% of the sanctioned strength) of Accountant-cum-IT Assistants remained unfilled.

- **Inadequate Infrastructure:** Many Gram Panchayats lack basic facilities like offices, electricity, and internet. More than 35000 GPs do not have their own panchayat buildings.
- **Delayed Elections:** Political interference often leads to premature dissolution and delayed elections, disrupting long-term governance. For instance, in Puducherry, panchayat elections were held only once in 2006 over a 57-year period (1968–2025), with the next due in 2011 still pending after 13 years.
- **Poor Financial Management and Accountability:** Only 46% of Gram Panchayats had audit reports generated for 2019-20, indicating weak financial oversight.
- **Political and Bureaucratic Interference:** State control and bureaucratic dominance undermine PRI autonomy. Parallel bodies (parastatals) and external interference weaken PRIs' authority.
- **Social Inequalities and Gender Bias:** Caste hierarchy, patriarchy, and elite dominance reduce inclusive participation. Despite reservations, women face societal hurdles and practices like "Sarpanch Pati," where male relatives control decision-making.

Government Initiatives to Empower PRIs

- **Sashakt Panchayat-Netri Abhiyan:** A comprehensive capacity-building program specifically for Women Elected Representatives (WERs) of PRIs.
- **Rashtriya Gram Swaraj Abhiyan (RGSA):** Aims to strengthen Panchayats through training, capacity building, and technical support for better governance.
- **e-Panchayat Mission Mode Project:** Uses ICT tools to improve planning, implementation, and monitoring of schemes at the Panchayat level.
- **e-Gram Swaraj & Financial Management System:** Provides a digital accounting platform to improve transparency and enable better fund management by PRIs.
- **Geo-tagging of Assets:** The "mActionSoft" app helps capture photos with GPS coordinates to track development assets in villages.
- **SVAMITVA Scheme:** Maps village lands using drones to provide legal property documents to rural households, supporting economic growth.

Key Recommendations to Reform PRIs (2nd ARC)

- **Empowering Gram Sabhas:** Gram Sabhas should have greater authority-not just to supervise, but to plan and implement programs for economic development and social justice.
- **Devolution of Powers (3Fs):** States should transfer all functions, funds, and functionaries listed in the Eleventh Schedule to PRIs, following the principle of subsidiarity (decisions made at the lowest effective level).
- **Capacity Building:** Regular training for elected representatives and PRI staff is essential. Dedicated institutions for training and research should be established.
- **Strengthening State Finance Commissions:** These commissions must be empowered to ensure fair and adequate transfer of financial resources from the state to local bodies.
- **Independent State Election Commissions:** A separate State Election Commission should conduct PRI and urban local body elections to ensure autonomy and regularity.
- **Promoting E-Governance:** ICT tools should be used to enhance transparency, accountability, and citizen engagement in Panchayat functioning.

Urban Local Self-Governments

Context: The CAG's recent audit of Urban Local Self-Governments (ULSGs) in 18 states highlights a **42% gap between resources and expenditure**, affecting services for 241 million urban residents.

Key Findings from the CAG Audit Report

1. Institutional and Democratic Deficits

- **Lack of Elected Representation:**
 - 1,600 out of 2,625 ULSGs in 17 states had no active elected councils.

- Only 9 out of 18 states had functioning Ward Committees in at least one ULSG.
- Only 3 states (Kerala, Maharashtra, Uttarakhand) prepared annual District Development Plans.
- Only 4 out of 15 states empowered State Election Commissions (SECs) to conduct ward delimitation.
- **Mayoral Elections and Tenure:**
 - Only 5 states had directly elected mayors.
 - 9 states ensured the mayor's tenure was co-terminus with the council's term.

2. Financial Challenges

- **Revenue Dependency:**
 - ULSGs generated only 32% of their own revenue.
 - The remaining funds came from state and central transfers.
 - Only 29% of expenditure was directed towards developmental and programmatic activities.
- **Grants and Finance Commission Issues:**
 - ULSGs in 15 states received ₹1,606 crore less than what was recommended by their respective State Finance Commissions (SFCs).
 - Many states delayed the constitution of SFCs, affecting timely devolution and planning.

3. Functional Devolution and Autonomy

- **Extent of Devolution:**
 - On average, 17 out of 18 functions listed in the Twelfth Schedule were devolved.
 - Only 9 states devolved all 18 functions.
- **Lack of Autonomy:**
 - ULSGs had full control over only 4 functions.
 - Parastatal agencies (e.g., Jal Boards) continued to control key areas like urban planning and water supply, reducing ULSGs to mere implementing bodies.

4. Human Resource Constraints

- ULSGs faced an average vacancy rate of 37% in staff positions.
- 16 states provided limited or no authority to ULSGs to recruit their own staff.
- Only 7 out of 12 states had dedicated training institutes for municipal staff.

5. Continued State Overreach

- State governments retained powers to: Dissolve elected councils, Approve ULSG budgets, Frame rules governing municipal governance.

Strengthening Urban Local Bodies (ULBs): Recommendations & Solutions

1. Enhance Financial Autonomy and Resource Mobilization

- **Expand Own-Source Revenue:**
 - Reform **property tax systems** using market-based valuation and GIS mapping. Adopt **digital platforms** for transparent and efficient tax collection.
 - **Rationalize user charges** for services (water, sanitation, waste management) to ensure cost recovery.
- **Boost Non-Tax Revenue:**
 - Regularly revise service charges to reflect inflation and service costs.
 - Strengthen systems to prevent leakages and pilferage in revenue collection.
- **Reduce Dependence on State & Central Transfers:**
 - Increase financial independence by boosting local revenue generation.
 - Ensure timely constitution of State Finance Commissions (SFCs) and implement predictable grant formulas.

2. Deepen Devolution and Empowerment of ULBs

- Fully devolve all 18 municipal functions listed in the Twelfth Schedule to local bodies.
- Eliminate overlaps with parastatals to ensure clear functional responsibilities.

- Grant full authority over staffing and recruitment
- Minimize state overreach like dissolution of councils and top-down budget approvals.

3. Leverage Technology and Improve Financial Efficiency

- Implement digital governance to streamline operations and reduce expenditure.
- Use real-time monitoring systems for tax collection, budgeting, and service tracking.
- Optimize expenditures to free up resources for capital and development projects.

4. Promote Innovative and Sustainable Financing

- Encourage municipal bonds, especially in smaller cities, for infrastructure investment.
- Create resource-pooling mechanisms and alternative financial instruments for large projects.
- Attract private investments via Public-Private Partnerships (PPPs) in urban services.

5. Ensure Citizen-Centric and Participatory Governance

- Establish Functional Ward Committees and Area Sabhas to involve citizens
- Strengthen bottom-up planning by operationalizing District Planning Committees (DPCs) and Metropolitan Planning Committees (MPCs).
- Ensure transparent and inclusive governance in project planning and service delivery.

6. Build Institutional Capacity and Governance Quality

- Fill staffing vacancies in ULBs and improve hiring frameworks.
- Invest in training and capacity-building institutions for municipal staff across all states.
- Focus on service quality, linking user charges with improved standards to build public trust and increase willingness to pay.

Strengthening ULBs is not just about administrative efficiency, it is essential for realizing inclusive urban development and meeting the growing demands of India's rapidly urbanizing population.

Constitutional and Non-Constitutional Bodies

Central Consumer Protection Authority (CCPA)

Context: The Central Consumer Protection Authority (CCPA) issued the Guidelines to prevent misleading advertisements in the coachings.

About Consumer Protection Act of 2019

- The Consumer Protection Act of 2019 superseded the Consumer Protection Act, 1986, and seeks to widen its scope in addressing consumer concerns.
- This new legislation acknowledges offenses like disseminating false information about the quality or quantity of goods or services, as well as deceptive advertising. It outlines measures to address goods and services deemed "dangerous, hazardous, or unsafe."

Key Provisions

- **Definition of Consumer:** The Consumer Protection Act defines a consumer as someone who buys goods or uses services for personal use, excluding those acquiring for resale or commercial purposes. It covers transactions across different platforms.
- **Rights of Consumers:** The Act outlines six fundamental rights for consumers, such as: 1) Right to Safety; 2) Right to be Informed; 3) Right to Choose; 4) Right to be heard; 5) Right to seek Redressal; 6) Right to Consumer Awareness.
- **Central Consumer Protection Authority (CCPA):** The central government will establish the CCPA to protect consumer rights, oversee violations of unfair trade practices, and misleading advertisements, with an investigation wing led by a Director-General. District collectors can investigate complaints of consumer rights

Key Achievements of CCPA

Student Refund Drive

Facilitated ₹1.15 crore in refunds from Sept 2023 to Aug 2024.

Action Against Misleading Ads

Issued 45 notices and fined 18 institutes for deceptive advertising.

Student Grievance Redressal

Resolved 16,276 complaints at the pre-litigation stage.

violations, unfair trade practices, and misleading advertisements upon receiving a complaint or reference from central authorities or regional office commissioners.

- **Functions of CCPA:**

- Investigating violations and prosecuting offenders.
- Recalling hazardous goods or services, refunding payments, and halting unfair trade practices.
- Instructing entities to stop false or misleading ads or alter them.
- Levying fines and issuing safety alerts about unsafe products.

- **Penalties for Misleading Advertisement:** CCPA can impose fines of Rs 10 lakh and imprisonment of up to two years for false or misleading advertisements, and for subsequent offenses, fines can be up to Rs 50 lakh and imprisonment up to five years.

- **Consumer Disputes Redressal Commission (CDRC):** CDRCs will operate at district, state, and national levels to handle consumer disputes. Complaints can involve unfair trade, defective goods, overcharging, or hazardous products. Appeals from lower CDRCs will progress to higher levels, culminating in Supreme Court jurisdiction for final appeals.

Challenges of the Act

- **Lack of Awareness:** Even after 35 years of existence only 20% of the people in a survey were aware of the Consumer Protection Act 1986.
- **Vacancies in Commissions:** In Maharashtra, currently there are 102 vacancies at district commissions and 10 at the state commission. Such vacancies are there in other states as well which can hinder the smooth functioning of the Act.
- **CCPA Vagueness:** Despite its noble objectives, CCPA's functions lack clarity, with district collectors handling inquiries and investigations in Districts. This burdens the already burdened office of District Collector.
- **Legal Uncertainty:** The CCPA authority can penalize manufacturers or endorsers for misleading ads, but the basis for appeals in the National Commission remains unclear.
- **Dispute Jurisdiction Ambiguity:** It is uncertain if disputes with the current consumer commission will persist or be transferred based on pecuniary jurisdiction, leading to potential delays.
- **E-commerce Accountability:** Online platforms are now held accountable for faulty products or services, requiring them to curb the sale of counterfeit items. Compliance is challenging for e-commerce companies without offices in India.

Despite these challenges, the Consumer Protection Act, 2019 represents a significant step forward in safeguarding consumer rights in India. Addressing these issues through amendments, better implementation, and awareness campaigns can further strengthen the Act and empower consumers.

Inter State Council

Context: The Inter-State Council (ISC) has been reconstituted with PM Modi as chairman, all CMs and 9 Union ministers as members, and 13 Union ministers as permanent invitees.

About Inter-State Council (ISC)

- The ISC, headquartered in New Delhi, is a **constitutional body set up in 1990 under Article 263** of the Indian Constitution. It was **established based on the recommendations of the Sarkaria Commission**, which studied how to improve Centre-State relations.
- The ISC provides a platform for **dialogue and cooperation between the Central Government and State Governments**, as well as among States themselves.

Constitutional Basis

- Article 263 of the Constitution empowers the President to establish such a council if it is in the public interest. According to this article, the ISC can:
 - Advice on disputes between states
 - Discuss issues of common interest between states and the Centre
 - Recommend better coordination and cooperation through policies

Objectives of ISC

- Improve Centre-State and inter-state relations
- Encourage regular discussions on common issues
- Follow up on the implementation of recommendations made in previous meetings

Functions of the ISC

- **Policy Coordination:** The ISC discusses important policies that affect both the Centre and States. Example: During the introduction of the Goods and Services Tax (GST), the ISC helped align state and central policies.
- **Deliberations on General Issues:** The Council discusses matters referred to it by the Chairman. Example: COVID-19 pandemic response, language issues, and water-sharing disputes like the Cauvery issue.
- **Promoting Cooperative Federalism:** The ISC creates a space for all governments to come together and work on national issues such as internal security, disaster management, or economic reforms.
- **Conflict Resolution:** It helps resolve disputes between states or between states and the Centre.

Typical Composition of ISC

- **Chairman:** Prime Minister of India
- **Members:** Chief Ministers of all States, Chief Ministers of UTs with Legislative Assemblies, Administrators of UTs without Legislative Assemblies, Six Union Cabinet Ministers including the Home Minister are nominated by the PM.
- **Special Cases:** Governor attends in case of President's Rule in a State. Other Union Ministers may be invited as permanent invitees by the Chairman
- **Secretariat of ISC:** The ISC has a separate Secretariat headed by a Secretary from the Government of India. This Secretariat also acts as the Secretariat for the Zonal Councils.

About ISC Standing Committee

- The Standing Committee of the ISC was formed in 1996 during the Council's second meeting. It is **chaired by the Union Home Minister**.
- This **committee works throughout the year** to: Examine issues before they are taken up by the full Council; Monitor the progress of recommendations made in previous meetings

Limitations of the -State Council (ISC)

- **Infrequent Meetings:** The ISC has met only 11 times in 26 years, with the last meeting in 2016 after a 10-year gap. Delayed meetings hinder timely resolution of issues like the Sutlej-Yamuna canal dispute.
- **Non-Binding Recommendations:** ISC decisions are only advisory and not legally enforceable. States can ignore recommendations, as seen in unresolved river disputes like Cauvery and Krishna.
- **Overlapping Functions:** Its role overlaps with **NITI Aayog, Zonal Councils, and Finance Commission**. This causes confusion and reduces the ISC's distinct relevance.
- **Political Influence:** The Council's work can be affected by Centre-State political rivalries. Lack of trust weakens its role as a neutral coordination body.
- **Lack of Transparency:** ISC meetings are held behind closed doors, and proceedings are not made public. This reduces accountability and limits public trust in its decisions.
- **Weak Secretariat Support:** The ISC lacks an independent, professional secretariat, with key posts lying vacant. Appointments are controlled solely by the Prime Minister, limiting technical strength and shared ownership.

Recommendations on the Inter-State Council

1st ARC 1966	Establish ISC under Article 263(b) & (c) as a permanent consultative body
Sarkaria Commission 1983	Expand ISC's role , excluding dispute adjudication
NCRWC 2000	Use ISC for consultation on treaties and policies affecting states
2nd ARC 2005	Use ISC to consult states before introducing bills on Concurrent List
Punchhi Commission 2007	Strengthen and activate ISC for better Centre-State coordination

The Inter-State Council holds significant potential as a platform for fostering cooperative federalism in India. However, to realize this potential, it must be strengthened both structurally and functionally. By enhancing its role-especially in areas like financial allocations and policy coordination-the Council can serve as a credible

forum for building national consensus and ensuring balanced Centre-State relations in a complex and diverse federal structure.

Lokpal

Context: A Special Bench of the Supreme Court (SC) has appointed an *amicus curiae* to help examine whether the Lokpal and Lokayuktas Act, 2013 allows the Lokpal to investigate allegations of corruption against sitting High Court (HC) judges.

Case Background:

- In January 2025, the **Lokpal**, headed by former Supreme Court judge A.M. Khanwilkar, **issued an order saying that judges of High Courts**, which are set up under Parliamentary laws, **come under the purview of Section 14 of the Lokpal Act**.
- The Lokpal's order only focused on whether it had the authority (jurisdiction) to look into such complaints-not on whether the complaints themselves were valid.
- The Supreme Court took up the matter suo motu and put a temporary stay on the Lokpal's order.

About the Lokpal and Lokayuktas Act, 2013

- The Lokpal and Lokayuktas Act, 2013, was enacted to establish an independent anti-corruption authority- Lokpal at the national level and Lokayuktas at the state level -to investigate allegations of corruption against public officials.

Key Provisions of the Act

- **Establishment of Lokpal and Lokayuktas** at the national and state levels, respectively.
- **Structure of the Lokpal:** The Lokpal consists of a Chairperson and up to eight members. At least 50% of the members must be judicial members, and at least 50% must be from among SC/ST/OBC, minorities, or women.
- **Jurisdiction and Scope (Section 14):** Covers the Prime Minister, Ministers, Members of Parliament, and public servants, including officers in Group A, B, C, and D of the Central Government.
 - **Exceptions:** The Prime Minister is excluded in matters related to national security, foreign affairs, atomic energy, and public order.
 - The Lokpal also has jurisdiction over Chairpersons and officers of government-funded institutions, and NGOs receiving significant foreign donations.
- **Inquiry and Investigation Powers:** The Lokpal has an Inquiry Wing for preliminary investigation. A separate Prosecution Wing handles legal proceedings.
- **Powers:** Approval of prosecutions, Conduct of search and seizure, Provisional attachment of property, Confiscation of assets acquired through corrupt means
- **Special Courts:** The Act mandates the establishment of Special Courts to enable time-bound trials in corruption cases.
- **Protection of Whistleblowers:** Under the Whistleblower Protection Act, 2014, safeguards are provided to individuals reporting corruption, ensuring their anonymity and safety.
- **Complaint Mechanism:** Any citizen can file a complaint against corrupt officials. False or frivolous complaints are punishable with imprisonment and/or fines.
- **Independence and Financial Autonomy:** The Lokpal's budget is charged to the Consolidated Fund of India, ensuring financial independence from the executive.
- **Accountability and Reports:** The Lokpal must submit annual reports to the President, which are then tabled in Parliament for transparency.

Challenges in the Functioning of Lokpal and Lokayuktas

- **Delayed Appointments and Operationalization:** Though the Act was passed in 2013, the first Lokpal was appointed only in 2019, after a six-year delay. A 2020 report revealed that the post of Lokayukta was vacant in eight states and one UT.

- **Staffing and Structural Issues:** The Lokpal still lacks permanent staff, operating largely with temporary employees. Key posts like Director of Inquiry and Director of Prosecution remain vacant, hampering internal investigations.
- **Narrow Jurisdiction:** Jurisdiction excludes judiciary and restricts inquiries against the Prime Minister in key areas like national security. State government employees are excluded unless linked to Union affairs.
- **Low Case Disposal:** In five years of functioning, the Lokpal ordered investigations in only 24 cases and granted prosecution sanction in just six. Despite having the mandate to probe high-level corruption, its actual enforcement record remains poor.
- **High Rejection of Complaints:** Nearly 90% of complaints to Lokpal were rejected due to not being in the "correct format". This indicates a bureaucratic and rigid complaint process, which discourages genuine whistleblowers.
- **Dependence on External Agencies:** Investigations are currently entrusted to CVC and CBI, as Lokpal lacks its own fully functional inquiry and prosecution wings. In the absence of a designated Director of Inquiry, the Lokpal relies on CVOs (Central Vigilance Officers) of concerned ministries-leading to conflict of interest and limited independence.
- **No Constitutional Status:** As a statutory body, Lokpal lacks the strength of a constitutional authority. No appeal system or oversight weakens accountability and limits public trust.
- **Low Public Awareness:** Citizens are often unaware of Lokpal's role, leading to fewer complaints. Processes lack transparency, especially in cases involving high officials like the Prime Minister

Decentralizing anti-corruption efforts by empowering state-level Lokayuktas, as suggested in the 11th All India Lokayukta Conference (2012), can help in ensuring broader coverage. Measures such as bringing bureaucrats and government-funded NGOs under their jurisdiction, giving powers of search, seizure, and contempt, and making Lokayuktas the nodal agency for corruption complaints would enhance their effectiveness.

Recent Important Amendments/Acts/Verdicts

Benami Act 2016

Context: Supreme Court, led by the Chief Justice of India, has decided to review its 2022 ruling that declared parts of the Benami Transactions (Prohibition) Amendment Act, 2016, unconstitutional.

In 2016, the Court struck down Sections 3(2) and 5 of the Act. **Section 3(2) allowed jail time for benami deals made between 1988 and 2016-before the law even existed.** Section 5 allowed the government to seize properties involved in benami transactions.

About the Benami Transactions (Prohibition) Amendment Act, 2016

- The Benami Act was **originally enacted in 1988 to restrict benami transactions** (cases where a property is purchased in someone else's name while the actual payment is made by another person).
- The **aim was to prevent misuse of such transactions for illegal activities** like money laundering and tax evasion.
- However, the **1988 Act lacked procedural rules for implementation**. Thus, the Benami Transactions (Prohibition) Amendment Act, 2016 was introduced.

Key Highlights of the 2016 Amendment:

- **Expanded Definition of Benami Transactions:** A transaction is considered benami if:
 - A property is bought or held in one person's name but paid for by another.
 - The transaction is done under a fictitious name.
 - The listed owner is unaware of or denies owning the property.
 - The person funding the purchase is fictitious or untraceable.
- **Definition of Benamidar:** A Benamidar is the person (real or fictitious) in whose name a benami property is held. The Benamidar is prohibited from transferring the property back to the real (beneficial) owner.

- **Scope of “Property”:** Movable and immovable assets, Tangible and intangible assets, Physical (corporeal) and non-physical (incorporeal) assets
- **Powers of Authorities:** Authorities under the Act can:
 - Examine properties and records thoroughly
 - Summon any individual, including those from banks and financial institutions
 - Require submission of financial records and documents
 - Accept evidence through affidavits
 - Provisionally attach suspected benami properties
 - Once confirmed as benami, the property can be confiscated by the central government without compensation
- **Penal Consequences:** Engaging in or helping with a benami transaction to evade the law or debts is punishable by: **Imprisonment:** 1 to 7 years; **Fine:** Up to 25% of the property's fair market value.
- **Adjudicating Authority:** Appointed by the Central Government to exercise powers under the Act.
- **Appellate Tribunal:** Established by the Central Government to hear appeals against orders of the Adjudicating Authority.
- **Appeal Mechanism:** Appeals can be made first to the Appellate Tribunal and further to the High Court if required.

Why Did the Supreme Court Strike Down Parts of the 2016 Benami Amendment Act?

- **Retrospective Application:** The law punished benami deals going back to 1988, even though the rules were unclear or unenforceable then. This created legal confusion.
- **Violation of Article 20(1):** The Constitution bars punishment for acts that were not crimes when done. Applying the 2016 law to old cases was seen as unfair and unconstitutional.
- **Harsh Penalties:** The law imposed strict punishments-including jail and fines-without checking if the actions were illegal at the time. Property could be seized without considering the circumstances.
- **Lack of Safeguards:** Authorities were given broad powers with little oversight, risking misuse and unfair treatment of individuals.
- **Violation of Right to Property (Article 300A):** The law allowed property to be taken without compensation or proper legal process, which the Court found arbitrary and unjust.

The case will now be reconsidered by a newly formed bench, where the constitutionality of the benami law provisions will be examined.

SC on Private Property

Context: A 9-judge Supreme Court bench ruled with 8:1 that the government cannot acquire all private property by labeling it as “material resources of the community” for the ‘common good’.

Constitutional Provisions Related to Property

- **Right to Property (Article 300A):** Initially, the right to property was a Fundamental Right under Articles 19(1)(f) and 31. It ensured ownership and compensation if property was taken by the state.
 - The 44th Constitutional Amendment (1978) removed it from Fundamental Rights and made it a constitutional right under Article 300A.
- **Article 39(b) (Directive Principles of State Policy (DPSP)):** It states that the ownership and control of material resources should be distributed to best serve the common good. This supports the idea of distributive justice, where the state can make laws to reduce inequality and promote social welfare.
- **Article 39(c) (DPSP):** It mandates that the operation of the economic system should not result in the concentration of wealth and means of production to the common detriment
- **Article 31C (25th Amendment Act, 1971):** It was introduced to support the socialist policies
 - Laws made to implement Article 39(b) or (c) cannot be challenged for violating Article 14 (equality), Article 19 (freedom), or property rights.

- These laws were also protected from judicial review even if they didn't actually fulfill Article 39(b)/(c). This was struck down in the Kesavananda Bharati case (1973). The first part remains valid.
- **Current Legal Position:** Today, any law that allows the government to take private property must: (a) Serve a public purpose. (b) Provide fair compensation.

Related SC Judgments

- **State of Karnataka v. Ranganatha Reddy (1977):** Upheld the nationalization of private bus services. Justice V.R. Krishna Iyer, in a separate opinion, introduced a broad interpretation of "material resources" under Article 39(b), including both private and public assets.
- **Sanjeev Coke Manufacturing Co. v. Bharat Coking Coal Ltd. (1982):** Supported the nationalization of coke oven plants and relied on the expanded meaning of "material resources" from the Ranganatha Reddy case.
- **Mafatlal Industries Ltd. v. Union of India (1996):** Reaffirmed the wide interpretation of "material resources" to justify state intervention and nationalization.

The present ruling overturns the earlier interpretation formed in 1977 that has been followed by the SC till 1997.

Implications of the Supreme Court Judgment

- **Refined Definition of "Material Resources of the Community":** The Court introduced a context-based approach to determine whether **private property qualifies as "material resources."** Factors such as public utility, scarcity, and concentration in private hands will now guide interpretation. This marks a shift from earlier rulings that broadly included all private property, aligning with India's transition from a socialist to a mixed economy.
- **Expanded Scope of Judicial Review:** The ruling restores judicial power to assess whether a law genuinely advances Article 39(b). Merely invoking the Directive Principle is no longer sufficient to avoid constitutional scrutiny.
- **Guidance for Future Redistribution Laws:** The Court has laid down foundational principles, but their practical application remains open. Future legal challenges will further clarify how the new standards apply to property acquisition and redistribution laws.
- **Increased Scrutiny of State Action:** Laws that seek to acquire or redistribute private property will now face stricter judicial evaluation. This promotes a balanced approach-respecting both the public interest and the constitutional right to property under Article 300A.

This landmark judgment redefines how private property is treated under Article 39(b). The ruling reflects India's evolving economic framework, balancing state intervention with individual rights.

POSH Act and Political Parties

Context: The Supreme Court recently heard a PIL seeking the extension of the POSH Act, 2013, to cover political parties.

About POSH Act 213

- The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013 (POSH Act) aims to ensure a safe and respectful work environment for women.
- **Vishakha Guidelines (1997):** Issued by the Supreme Court, these guidelines required all workplaces to: **Prohibit** sexual harassment, **Prevent** it through awareness, Provide a **complaints redressal mechanism**
- The POSH Act gives these guidelines legal backing.

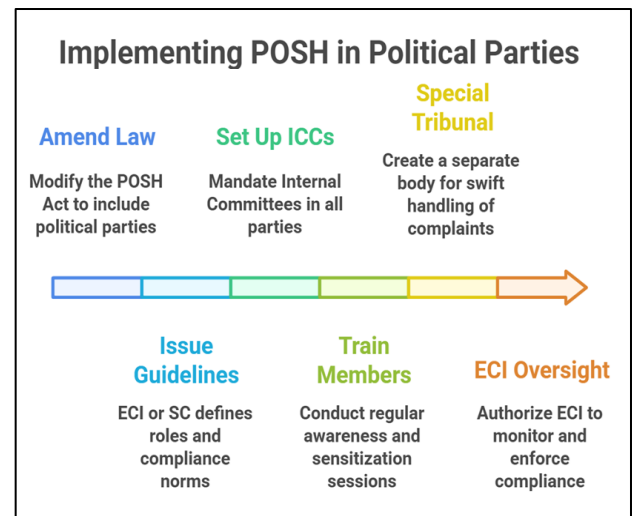
Key Features of the Act

- **Definition of Sexual Harassment:** Includes unwanted physical contact, sexual advances, requests for favors, obscene remarks, and any unwelcome behavior of a sexual nature (verbal or non-verbal). Also covers offensive messages, sexual jokes, or threats linked to sexual favors.

- **Examples of Harassment Scenarios:** Promising or denying job benefits in exchange for sexual favors, Creating a hostile work environment, Behavior affecting a woman's mental or physical health
- **Who is Covered?:** All women, whether full-time, part-time, interns, or visitors. Applies to all workplaces-public or private offices, homes (for domestic workers), hospitals, sports venues, and more.
- **Internal Complaints Committee (ICC):** Every workplace with 10+ employees must form an ICC, Includes a woman presiding officer, two staff members, and one external expert from an NGO or legal field
- **Appeal:** Both parties can appeal the ICC's decision in court within 90 days

Why Should Political Parties Be Covered Under the POSH Act?

- **High Incidence, No Redressal:** A 2016 global survey showed 82% of women parliamentarians faced psychological violence. Most parties lack independent and functional complaints committees, discouraging victims from coming forward.
- **Safe Environment Needed:** Women make up only 14.4% of Lok Sabha MPs and under 10% in states. POSH compliance can foster a safer, more inclusive political space.
- **Legal and Constitutional Backing:** Articles 14 and 15 ensure non-discrimination. POSH's definitions can include party workers and volunteers.
- **Protection for Informal Workers:** Many women in political roles are unpaid or informal, making them especially vulnerable without formal safeguards.
- **Accountability and Democracy:** Applying POSH to parties aligns with Election Commission goals on transparency and accountability. Nations like Sweden and Norway show how such reforms can be institutionalized.
- **Implementation Challenges:** Political parties often lack defined workplaces or clear hierarchies. Clear rules on defining "employer" and "workplace" are essential, possibly with ECI oversight.



Going forward, extending the POSH Act to political parties is vital to fostering a safer and more inclusive political environment for women. As more women engage in political work they must be assured of protection from harassment and provided with effective redressal mechanisms

Places of Worship Act

Context: The Supreme Court has barred civil courts from registering new suits or ordering surveys related to ownership or title of religious sites, amid petitions challenging Places of Worship Act.

About Places of Worship (Special Provisions) Act, 1991

- The Places of Worship Act of 1991 serves to preserve the religious character of places of worship as they existed on August 15, 1947, prohibiting their conversion and ensuring their maintenance.
- It was introduced in 1991 to prevent any new controversies from arising relating to conversion of places of worship as then the Ram Temple Agitation was at its peak.

Key Provisions:

- **Definition of Place of Worship:** The Act defines "place of worship" broadly to include temples, mosques, gurudwaras, churches, monasteries, and other public religious sites.
- **Prohibition of Conversion:** Section 3 of the Act prohibits the conversion of any place of worship from one religious denomination to another or to a different segment within the same denomination.
- **Maintenance of Religious Character:** Section 4 mandates that the religious character of a place of worship remains unchanged from its status on August 15, 1947. Any legal proceedings concerning conversions prior to this date are rendered void, and new legal action is barred.

- **Exemptions:** The Act exempts certain cases, such as the Ram Janmabhoomi-Babri Masjid dispute, and ancient monuments and any religious place that is also an ancient monument or archaeological site protected under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- **Penalties:** Section 6 specifies penalties, including imprisonment for up to three years and fines, for violating the Act.

Need of the Act

- The Supreme Court regards the Places of Worship Act as a legislative measure that reinforces India's commitment to secularism, a cornerstone of its Constitution.
- Seen as an embodiment of the constitutional duty to maintain religious equality, the Act ensures the protection of places of worship for all religious communities.
- In 2020, Turkey converted the Hagia Sophia (once a significant Byzantine church) from a museum back into a mosque. This decision by Turkey drew criticism from other Christian nations, and international organizations for disregarding religious pluralism.
- Domestically, moves like these can embolden hardline religious groups and potentially alienate minority religious communities.

Concerns with the Act

- **Arbitrariness:** Critics argue that the Act's prohibition of judicial review, along with a retrospective cut-off date, is arbitrary and irrational. This restriction infringes upon the fundamental right to seek judicial review, which is a basic tenet of the Constitution.
- **Violation of Religious Rights:** Critics argue that the Act limits the religious rights of Hindus, Jains, Buddhists, and Sikhs by failing to provide remedies for illegal encroachments on places of worship, potentially violating Article 25 of the Constitution.
- **Bars Seeking Legal Recourse:** Moreover, the Act prohibits these communities from seeking legal recourse through Article 32 (Writ in Supreme Court) or Article 226 (Writ in High Court). This further restricts their ability to protect their religious rights.
- **Legislative Jurisdiction:** Opponents contend that the Act exceeds Parliament's legislative authority. By deviating from the legal principle of "ubi jus ibi remedium" (where there is a right, there is a remedy), it undermines the concept of justice and the Rule of Law, a violation of Article 14.
- **Exclusion of Ayodhya Dispute:** Critics specifically target the Act for its omission of the land central to the Ayodhya dispute. They believe this selective exclusion creates unequal treatment of religious sites and undermines the Act's purpose of maintaining status quo across all places of worship.

A delicate balance must be struck between preserving the religious character of places of worship and respecting the rights of various communities. To achieve this, engaging in public consultations, maintaining transparency, and reassessing the exclusion of specific sites are essential steps toward promoting fairness and consistency in the application of the law.

Data Protection Act

Context: The Union government has released the draft Digital Personal Data Protection (DPDP) Rules, 2025 to implement the DPDP Act, 2023.

About the Digital Personal Data Protection (DPDP) Act, 2023

The DPDP Act, 2023 is a law enacted to protect individuals' digital personal data and ensure it is used only with informed consent, upholding privacy in the digital era.

Scope and Applicability	• Applies to digital personal data processed in India-collected online or offline (and later digitized). • Also applies to data processed outside India if it relates to offering goods/services to individuals in India
Background	Based on the Justice B.N. Srikrishna Committee Report and the draft Personal Data

	Protection Bill, 2019.
Key Stakeholders	• Data Principal (DP): The individual whose data is collected. Has the right to give, refuse, or withdraw consent at any time. • Data Fiduciary: The entity that collects and processes data, must act transparently and can also be a Consent Manager. • Significant Data Fiduciary: Notified by the government based on volume or sensitivity of data handled. • Data Processor: Processes data on behalf of the fiduciary. In smaller setups, the fiduciary and processor may be the same. • Data Protection Officer (DPO): Appointed by a fiduciary to ensure compliance with the Act.
Key Provisions	• Consent: ○ Personal data can be processed only with prior, informed consent. The individual must be notified of what data is collected and for what purpose. Consent can be withdrawn anytime. ○ Exceptions include voluntary data sharing, government benefits, medical emergencies, and employment. For minors, consent must come from a parent or guardian. • Rights and Duties of Data Principal: ○ Individuals have the right to know how their data is used, correct or delete it, assign someone to manage their rights in case of death/incapacity, and file complaints. ○ They must not submit false data or complaints. Violations attract a fine up to ₹10,000. • Obligations of Data Fiduciaries: ○ Entities handling data must ensure its accuracy, protect it from breaches, notify authorities and users in case of a breach, and delete data when no longer needed. ○ Government entities are exempt from deletion and storage rules. • Cross-Border Data Transfer: Personal data can be sent outside India unless restricted by government notification. • Exemptions: Certain rights and obligations won't apply during crime prevention, legal claims, or national security. The government may exempt activities like research, archiving, or statistical work. • Data Protection Board of India: A government-appointed board will ensure compliance, address complaints, and impose penalties. Members serve for two years and appeals go to TDSAT. • Penalties: Fines range up to ₹200 crore for violations involving children's data, and ₹250 crore for security failures. Penalties follow a formal inquiry by the Board.

Issues with the DPDP Act

- **Exemptions to the State May Undermine Privacy:** The Act grants broad exemptions to government data use for national security or public order, risking mass surveillance and violating the right to privacy (Puttaswamy case, 2017). Unlike India, the UK requires judicial approval and oversight for such data use.
- **Consent Overridden for Government Services:** The government can use and reuse personal data for services (e.g., benefits, certificates) without consent. This removes purpose limitation and may lead to profiling, reducing individual control.
- **Inadequate Protection Against Data Misuse:** The Act does not define harms of data misuse like financial loss, identity theft, or surveillance. Justice Srikrishna Committee had suggested stronger safeguards and compensation, similar to the GDPR's provisions for damages.

- **Missing Rights - Data Portability and Right to be Forgotten:** These rights, found in past drafts and the GDPR, are missing. Portability allows users to shift data between platforms. The right to be forgotten lets individuals remove outdated or irrelevant data online-both support autonomy and transparency.
- **Weak Checks on Cross- Border Data Transfer:** Data can be sent to any country unless specifically restricted. Unlike the 2019 Bill, the Act doesn't require ensuring foreign laws offer adequate protection for sensitive data.
- **Short Board Tenure May Affect Independence:** Data Protection Board members have 2-year terms, with re-appointment allowed. This may lead to executive influence. Other regulators like CCI and SEBI have longer, 5-year terms.
- **Issues with Children's Data Protection:** The Act defines children as under 18, higher than the global norm (13-16). This may reduce online autonomy. Platforms must verify users' ages to get parental consent, raising privacy concerns.
- **Exemptions from Notice May Undermine Informed Consent:** Startups can be exempted from sending data collection notices. Without knowing what data is collected, consent becomes uninformed-defeating the principle of meaningful user control.

Going forward, it is vital that these gaps are addressed through transparent implementation, judicial oversight, and regular review. Only then can the Act truly safeguard citizen rights and build public trust in India's digital ecosystem.

Anti-Conversion Law

Context: The Arunachal Pradesh government is preparing rules to implement a 1978 law against "forceful" religious conversions, nearly 46 years after it was first enacted.

What is Anti Conversion Law?

- Anti-conversion laws in India are legislative frameworks enacted by several states to regulate religious conversions.
- Their stated aim is **to prevent conversions carried out by force, fraud, undue influence**, or financial inducement, and to ensure that religious conversions occur through free will and personal conviction.
- These laws typically require individuals to notify or seek permission from government authorities before converting to another religion.

Current Status

- There is no national anti-conversion law in India.
- The first such law was the Orissa Freedom of Religion Act, 1967. As of 2025, at least 18 states have implemented some form of anti-conversion legislation.

Key Features

- **Prohibition of Forced Conversions:** Laws prohibit conversions by misrepresentation, force, undue influence, coercion, allurement, or fraudulent means.
- **Notification/Permission Requirements:** Many states require individuals intending to convert, or those involved in facilitating a conversion, to notify district authorities in advance or seek permission. Failure to do so can result in fines or imprisonment.
- **Punitive Measures:** Penalties for violating these laws include imprisonment (ranging from 1 to 10 years) and fines (ranging from ₹5,000 to ₹3,00,000 or more), with enhanced punishments for converting minors, women, or members of Scheduled Castes/Tribes, or for mass conversions.
- **Special Provisions on Marriage:** Some states specifically target conversions linked to interfaith marriages, with provisions to penalize conversions "by marriage or for marriage," often associated with the term "Love Jihad".

Need of Anti Conversion Laws

- **Protection of Vulnerable Communities:** These laws aim to safeguard economically and socially disadvantaged groups from being coerced or induced to convert through fraud or material benefits.

- **Preservation of Indigenous Cultures:** Many tribal and indigenous communities view religious conversion as a threat to their cultural and spiritual heritage. Anti-conversion laws are seen as tools to preserve these unique traditions.
- **Prevention of Social Tensions:** In a country as religiously diverse as India, large-scale conversions-whether voluntary or coerced-can lead to communal unrest. Supporters argue these laws help maintain social harmony.
- **Accountability and Transparency:** Requiring prior notice or approval for conversions introduces oversight and helps prevent unlawful activities like forced or deceitful conversions.

Issues with Anti Conversion Laws

- **Violation of Fundamental Rights:** Article 25 of the Indian Constitution guarantees the right to freedom of religion, including the right to profess, practice, and propagate one's faith. Critics argue that anti-conversion laws infringe on individual freedom to choose or share their religion.
- **Scope for Misuse:** These laws are often vaguely worded, leaving room for misuse. Allegations of forced conversion can be falsely made, leading to harassment or intimidation, particularly of religious minorities.
- **Stigmatization of Religious Minorities:** Anti-conversion laws often disproportionately impact minority communities, reinforcing negative stereotypes and straining interfaith relations.
- **Lack of Evidence for Forced Conversions:** Opponents argue that there is little empirical evidence to support claims of widespread forced conversions. They suggest that the laws are politically motivated rather than driven by genuine social concerns.

As more states adopt or revive such laws, it becomes essential to strike a careful balance-ensuring genuine religious freedom and cultural preservation without undermining democratic principles or enabling social discrimination. A nuanced, transparent, and rights-based approach is crucial to address both the intent and the impact of these laws.

Clause 6 of Assam Accord

Context: Assam has recently initiated the implementation of 52 recommendations made by the Justice Biplab Sarma Committee concerning Clause 6 of the Assam Accord.

What is the Assam Accord?

- The Assam Accord is a historic Memorandum of Settlement signed in **1985** between the Rajiv Gandhi-led Union government and the leadership of the Assam Movement, primarily the All-Assam Students' Union (AASU).
- Its core objective was to preserve the political, cultural, and economic rights of the Assamese people.
- The Assam Movement (1979–1985) was a six-year-long anti-foreigner agitation, demanding the identification and deportation of illegal immigrants, particularly from Bangladesh.

What is Clause 6 of the Accord?

- Clause 6 provides for constitutional, legislative, and administrative safeguards to protect, preserve, and promote the cultural, social, and linguistic identity and heritage of the Assamese people.
- It was specifically included to safeguard the socio-political rights and distinct culture of the indigenous people of Assam.

Implementation Challenges of Clause 6

- **Definition of "Assamese People":** Minority communities fear exclusion, as a narrow definition may lead to cultural and political marginalization of non-Assamese groups like Bengalis and tribals.
- **Land Ownership Issues:** Restricting land rights may cause legal disputes and economic instability for long-settled non-Assamese groups who might lose ownership or inheritance rights.
- **Sixth Schedule Autonomy:** Autonomous councils may reject Clause 6, viewing it as interference, creating uneven implementation and demands for greater autonomy or separate statehood.

- **Linguistic Diversity Concerns:** Prioritizing Assamese may provoke resistance in Bengali-speaking Barak Valley and marginalize smaller indigenous languages like Bodo and Mishing, risking cultural discontent.
- **Political-Bureaucratic Delays:** Lack of coordination and political will has delayed implementation since 1985, with frequent disagreements and no clear roadmap from successive governments.
- **CAA Conflicts:** The Citizenship Amendment Act may undermine Clause 6 by increasing migrant regularization, weakening protections for indigenous Assamese people.
- **Legal Challenges:** Exclusive rights for Assamese people may face constitutional scrutiny under Articles 14 and 19, risking judicial invalidation of key provisions.

Addressing these issues will require strong political will, deep understanding of Assam's social landscape, and an inclusive, balanced approach that respects the interests of all communities.

Biplab Sarma Committee Report

- **Background:** In July 2019, the Union Home Ministry set up a 14-member committee chaired by Justice (Retd.) Biplab Kumar Sarma to suggest ways to implement Clause 6 of the Assam Accord.
- **Definition of Assamese People:** The committee proposed that "Assamese people" should include:
 - Indigenous tribals and other indigenous communities of Assam
 - Indian citizens residing in Assam on or before January 1, 1951, and their descendants
- **Key Recommendations (52 Total)**
 - **Land:**
 - Reserve specific Revenue Circles for Assamese people to own/transfer land
 - Grant land titles to long-time undocumented occupants
 - Prioritize erosion-affected people in char (riverine) land allotments
 - **Language:**
 - Make Assamese compulsory up to Class VIII/X in all English-medium schools.
 - Set up a Language and Literature Academy to preserve indigenous languages
 - **Cultural Heritage:**
 - Create an autonomous body for *sattras* (neo-Vaishnavite monasteries)
 - Build cultural complexes in every district
 - Implementation in Sixth Schedule areas (BTC, North Cachar Hills, Karbi Anglong) to be decided by respective councils
 - **Exemptions:** Recommendations will not apply to the Barak Valley and Sixth Schedule areas
 - **Political and Job Reservations:** Proposed reservations for Assamese people in Parliament, state Assembly, local bodies, and jobs.

Miscellaneous

Public Expenditure Index

Context: The Reserve Bank of India (RBI) has developed a Quality of Public Expenditure (QPE) Index according to which, India's public spending quality is at its highest since the 1991 economic reforms.

About QPE Index

The QPE Index is a framework developed by the RBI to assess how efficiently government funds are utilized, focusing on the composition and impact of spending rather than just its volume.

Key Indicators of the QPE Index

Indicator	What It Measures	What It Indicates
Capital Outlay to GDP Ratio	Share of spending on infrastructure and development projects relative to GDP	Higher ratio = better quality of expenditure.
Revenue Expenditure to Capital Outlay Ratio	Balance between day-to-day operational expenses and long-term investment	Lower ratio is ideal for fiscal sustainability.
Development Expenditure to GDP Ratio	Public investment in health, education, research, infrastructure, and welfare	More investment improves human capital and growth.
Development Expenditure as % of Total Expenditure	Proportion of developmental spending in overall government expenditure	Higher proportion = more growth-oriented spending.
Interest Payments to Total Expenditure Ratio	Portion of government spending used to repay debt	Lower ratio shows better fiscal health.

How India Improved the Quality of Its Public Expenditure

- **Shift Toward Capital Expenditure:** Over the last two decades, India has prioritized capital investment over revenue spending. CapEx (% of GDP) has increased from 2.6% (2018-19) to 4.3% (2025-26). Capital

expenditure supports infrastructure, roads, energy, and digital connectivity-laying the foundation for long-term economic growth.

- **Fiscal Responsibility and Budget Management (FRBM) Act:**

Introduced in 2003, the FRBM Act aimed to limit the fiscal deficit to 3% of GDP, ensuring that borrowing primarily supports capital projects rather than routine expenses.

- **Increase in Development Spending:**

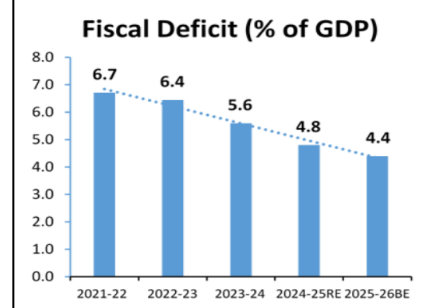
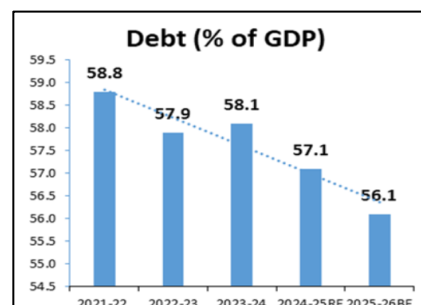
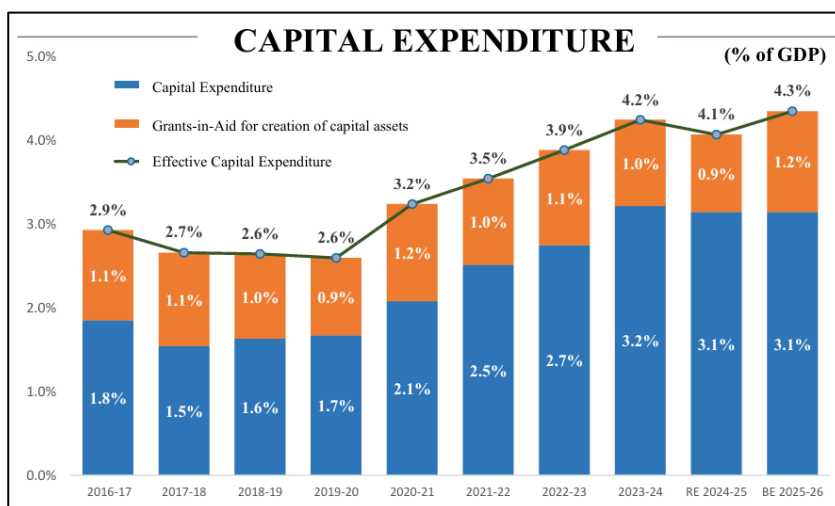
Higher investment in education, healthcare, and welfare is strengthening human capital and productivity. In FY26, healthcare received ₹95,957.87 crore (increased 9.46% from previous year), while education was allocated ₹1.28 trillion (up by 6.5%).

- **Focus on Debt Management:** India has shifted from focusing solely on the annual fiscal deficit to managing total debt as a percentage of GDP.

This ensures fiscal sustainability while offering flexibility during economic downturns.

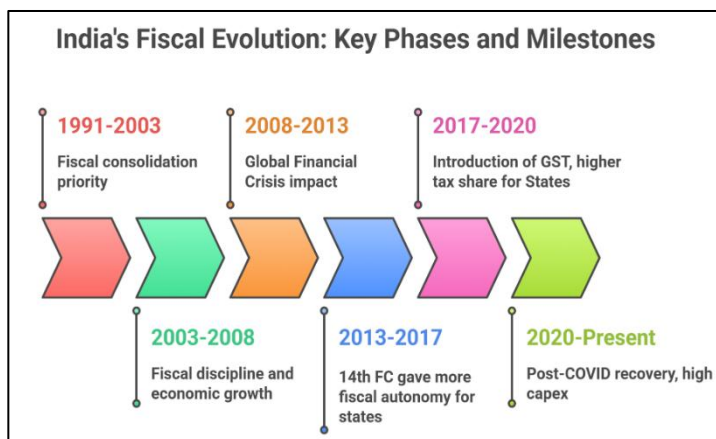
- **Budgetary and Institutional Reforms:** Advancement of the budget cycle (Union Budget now presented on February 1) allows for timely fund allocation. Merger of plan and non-plan expenditure and the merger of the rail budget with the general budget have streamlined financial management.

- **Devolution of Funds and Decentralization:** Greater devolution of funds to states and local governments has enabled more need-based and context-specific allocation, while maintaining fiscal prudence. The 2025–26 Union Budget projects ₹14.22 lakh crore in tax devolution and ₹11.37 lakh crore in grants, marking a significant rise in fiscal transfers to state governments.



Challenges to Maintaining High-Quality Public Expenditure

- **Crisis-Driven Fiscal Stimulus:** Events like the 2008 Global Financial Crisis and COVID-19 lockdowns pushed the government to exceed fiscal limits, affecting spending quality.
- **Political Pressure for Populist Measures:** Growing demands for loan waivers, cash transfers, and free electricity strain public finances.
- **Revenue vs. Capital Expenditure Balance:** Although capital spending has increased, high revenue expenses-such as salaries, subsidies, and interest payments-limit fiscal flexibility.



Future Outlook: Strengthening India's Public Expenditure Strategy

- **Boosting Capital Spending:** Keep investing in infrastructure, clean energy, and digital services.
- **Welfare-Development Balance:** Align social schemes with long-term growth needs.

- **Better Fiscal Federalism:** Improve Centre–state coordination for balanced development.
- **Fiscal Discipline:** Control borrowing while prioritizing growth spending.
- **Improved Monitoring:** Use data tools to ensure spending is efficient and transparent.

US Presidential Election

Context: Former U.S. President Donald Trump won a second term in office, defeating Vice-President Kamala Harris, to become the 47th President of the United States.

Comparison: Presidential Election in the U.S. vs India		
Feature	United States	India
Nature of Role	Head of State and Government (real executive powers)	Head of State only (ceremonial , limited executive role)
Type of Election	Indirect (via Electoral College, with citizen voting)	Indirect (Elected MPs and MLAs vote; no direct public role)
Electoral College Composition	538 electors (based on Congress + 3 from D.C.)	Elected MPs + Elected MLAs (from states and UTs)
Vote Weight	Each elector has one vote	Vote value varies MLA vote depends on state population
Winning Requirement	270 electoral votes out of 538	Majority of total weighted votes
Eligibility Criteria	• Natural-born citizen • 35+ years age • U.S. resident for 14 years	• Indian citizen • 35+ years • Eligible to be Lok Sabha MP
Nomination Process	Primaries + National Party Conventions	Nomination by at least 50 proposers and 50 seconders
Election Process	Public vote → Electors vote in December → Congress certifies	Secret ballot using proportional representation by legislators
Term	4 years (maximum 2 terms)	5 years (no term limit)
Inauguration	January 20 following the election	Soon after current President's 5-year term ends

Constitutional Reflection

- **United States:** The process reflects a presidential form where separation of powers is central. The President is elected independently of the legislature and exercises real executive authority.
- **India:** The method mirrors a parliamentary democracy, emphasizing harmony between the executive and legislature. The President acts as a nominal head, indirectly elected to ensure representation of both the Union and States.

The differences in Presidential elections in India and the U.S. are not merely procedural—they embody the philosophical and institutional design of each democracy.

India's Prison Crisis

Context: The India Justice Report 2025 by Tata Trusts highlights serious issues in Indian prisons, including severe overcrowding and widespread health problems. Former Supreme Court Judge Madan B. Lokur has cautioned that unless prison conditions improve, securing extraditions from other countries will remain a challenge.

India's Prison System

- India operates one of the largest prison networks globally, with around 1,400 prisons as of 2021. Since "prisons" fall under the **State List in the Indian Constitution**, their administration and management lie primarily with individual state governments.
- The system is governed by the outdated Prisons Act of 1894, along with state-specific prison manuals.

About the India Justice Report (IJR)

- It is a collaborative, data-based study by civil society groups and think tanks. It assesses justice delivery in 36 States/UTs across five sectors: Police, Judiciary, Prisons, Legal Aid, and Human Rights Commissions.

Key Findings:

- **Police:**
 - One civil police officer for every 831 citizens.
 - 17% of police stations lack CCTV cameras.
 - 30% do not have women's help desks.
 - No state/UT has fulfilled its reservation target for women in the police force.
- **Judiciary & Legal Aid:**
 - Gujarat leads in vacancies among High Court judges and staff.
 - In Bihar, 71% of lower court cases have been pending for over three years.

Key Issues with India's Prisons

- **Overcrowding:** India's inmate population rose from 3.8 lakh (2012) to 5.7 lakh (2022); national prison occupancy rate is 131%, far above the capacity of 4.3 lakh.
- **Undertrial Population:** The proportion of undertrials (people awaiting completion of investigation or trial) has escalated from 66 per cent to 76 per cent.
- **Delayed Justice:** Out of 5.1 crore pending cases, 61% in high courts and 46% in district courts have been pending for over three years. In 26 states/UTs, one in three district court cases is delayed beyond three years.
- **Medical Staff Shortage:** 43% of medical officer posts are vacant; the doctor-to-prisoner ratio is 1:775, much worse than the Model Prison Manual benchmark of 1:300.
- **Mental Health Crisis:** Only 25 psychologists serve 5.7 lakh inmates-1 for every 22,929 prisoners. Mental illness cases doubled from 4,470 (2012) to 9,084 (2022).
- **Neglect of Disabled Prisoners:** No national data exists on inmates with pre-existing or prison-acquired disabilities, making inclusive reforms and targeted support nearly impossible.
- **Poor Infrastructure and Sanitation:** Overcrowding (161% in Maharashtra) strains basic infrastructure, causing unhygienic conditions, poor ventilation, and rising disease outbreaks inside prisons.
- **Low Budget Allocation:** Per capita spending: ₹82 on judiciary, ₹57 on prisons, and ₹6 on legal aid. No state spends more than 1% of its budget on the judiciary.

Recommendations of *The India Justice Report 2025*

- Immediate recruitment of medical officers and mental health professionals in prisons.
- Targeted investment in expanding prison infrastructure to match rising inmate numbers.
- Regular and transparent publication of health and disability data within prisons.
- Policy reforms to reduce overcrowding, including bail reforms & promotion of community-based sentencing.

India's prison system is at a critical juncture. As the nation progresses economically and technologically, equal focus must be given to correctional reforms to uphold inmates' dignity, health, and safety-consistent with global human rights standards.

Mob Lynching

Context: Civil society groups have released a report on a Mangaluru Mob Lynching incident.

What is Mob Lynching?

Mob lynching refers to unlawful violence carried out by a group of people who take the law into their own hands to punish someone they believe has committed a wrongdoing, without following any legal process.

Causes of Mob Lynching

- **Communal and Identity-Based Prejudice:** Mob lynchings often stem from deep-rooted religious, caste, or ethnic hatred, especially targeting Minorities, Dalits, and migrant workers. These acts are driven by a belief that certain communities threaten cultural or religious norms.

- **Misinformation and Social Media Rumors:** False news, especially via platforms like WhatsApp, has triggered several lynching cases. Example: In 2018, five men in Maharashtra were lynched due to WhatsApp rumors about child kidnapping.
- **Cow Vigilantism and Cultural Policing:** Some mobs justify violence in the name of cow protection, often targeting minorities without evidence. According to Human Rights Watch (2019), 44 people were killed in cow-related violence (2015–2018), 36 of them Muslims.
- **Rumors and Fear-Based Reactions:** Besides cow vigilantism, fears about child kidnapping, organ trafficking, or other crimes often spread unchecked, leading to violent reactions based on misinformation.
- **Moral Policing and Vigilantism:** Groups enforcing their own interpretation of morality, such as opposing interfaith relationships or dress choices use violence against individuals who don't conform to their norms.
- **Weak Law Enforcement and Legal Gaps:** Police often fail to prevent mob violence or delay action. Until the Bharatiya Nyaya Sanhita (BNS), 2023, such cases were handled under general IPC sections like murder or rioting, which didn't capture the bias-driven and collective nature of lynching.
- **Economic Insecurity and Inequality:** In regions with high poverty or unemployment, marginalized groups are sometimes scapegoated as threats to limited jobs or resources. This social tension can lead to targeted violence.
- **Political and Societal Encouragement:** In some cases, political speeches or silence on vigilante acts create an atmosphere where mobs feel emboldened and immune to punishment. States like Manipur, Rajasthan, West Bengal, and Jharkhand have passed anti-lynching laws, but most lack strong enforcement mechanisms.

Legal Provisions Related to Mob Lynching in India		
Bharatiya Nyaya Sanhita (BNS), 2023	Section 103(2): Mob Lynching as Murder	Group of 5+ committing murder based on identity (caste, religion, gender, etc.). Punishment: Death or life imprisonment + fine.
	Section 117(4): Grievous Hurt by a Mob	Group of 5+ causing serious injury on discriminatory grounds. Punishment: Up to 7 years' imprisonment + fine.
Supreme Court Verdict (Tehseen Poonawalla Case, 2018)	Condemnation of Mob Violence	Mob justice is unconstitutional and violates rule of law. SC warned it could become the "new normal."
	State Responsibility	States must protect citizens and prevent targeted group violence. Referred to U.S. legal precedents.
SC Guidelines to Prevent Mob Lynching	• Strict Action Against Hate Speech: Register FIRs under IPC 153A / BNS 196 for promoting enmity or spreading fake news. • Preventive Measures: Appoint nodal officer in each district, identify sensitive areas, increase patrolling, monitor social media. • Punitive Measures: Fast-track courts to resolve lynching cases in 6 months. Life imprisonment for lynching. • Official Accountability: Disciplinary action against officials failing to prevent lynching. • Victim Compensation: States must offer compensation for injury, livelihood loss, and medical expenses. • Monitoring and Legislative Action: States to submit regular reports. Parliament urged to pass national anti-lynching law (Rajasthan, Manipur have state laws).	

Challenges Faced in Addressing Mob Lynching Cases

- **Difficulty in Identifying Accused:** Large, often masked crowds make it hard to identify individuals. Mobs disperse quickly, and witnesses are often reluctant to testify due to fear.
- **Weak Investigation and Evidence Collection:** Police frequently arrive late, fail to secure crime scenes, and do not collect proper forensic evidence. Perpetrators may erase digital/video evidence.

- **Political and Social Interference:** Some attackers receive political protection or local support, obstructing arrests and prosecutions. Victims and families face threats, harassment, or social boycott, pressuring them to withdraw cases.
- **Delayed Justice:** Legal proceedings are prolonged due to frequent adjournments and lack of fast-track courts. This weakens deterrence and delays justice for victims.
- **Spread of Misinformation:** Fake news on platforms like WhatsApp fuels mob violence (e.g., child kidnapping, cow slaughter). Authorities often fail to respond or regulate such content in real-time.
- **Bias in Law Enforcement:** Police are sometimes accused of siding with perpetrators, especially in communal incidents. FIRs may be diluted or misfiled, weakening the case.
- **Lack of Public Awareness:** Many citizens are unaware that lynching is illegal and punishable. There is limited civic education or outreach against mob vigilantism.
- **Compliance Issues:** In a plea filed by the National Federation of Indian Women (NFIW), the Supreme Court found widespread non-compliance with its 2018 directions:
 - Most states failed to submit action-taken reports, except Madhya Pradesh and Haryana
 - FIRs were filed against victims (e.g., for cow slaughter), not perpetrators
 - Mob lynching cases were underreported, misfiled, or poorly investigated

Way Forward

- **Effective Implementation of BNS Provisions:** Strictly apply BNS Section 103(2) nationwide with proper police and prosecutor training.
- **Establish Fast-Track Courts:** Set up special courts to ensure speedy trials and punishment in lynching cases.
- **Strengthen Police Accountability and Training:** Appoint nodal officers and train police in unbiased probes and digital evidence handling.
- **Robust Witness Protection:** Provide legal support, anonymity, and relocation to protect witnesses from threats.
- **Curb Misinformation and Hate Speech:** Track and remove fake news online and penalize those inciting violence or hate.
- **Public Awareness and Community Engagement:** Run awareness drives involving citizens and leaders to discourage mob violence.
- **Political and Administrative Neutrality:** Prevent political interference and punish officials who enable or ignore lynching.
- **Central Database and Monitoring:** Maintain a national lynching database and empower NHRC for audits and policy checks.

Inter State Water Disputes

Context: Punjab opposes the Bhakra Beas Management Board's (BBMB) decision to release an additional 4,500 cusecs of water to Haryana.

About Inter-State River Dispute

- Inter-State River Disputes refer to contentious issues regarding the sharing of water resources among different states within the country's federal system.
- Examples include disputes over rivers like Krishna, Cauvery, and the Satluj Yamuna Link Canal. Various Inter-State Water Disputes Tribunals have been established to address these conflicts, although they have encountered challenges.

Constitution on Inter-State River Disputes

- Water-related matters fall under Entry 17 of the State List, granting states authority over water supply, irrigation, and hydro power.
- However, Entry 56 of the Union List empowers the central government to regulate inter-state rivers and river valleys in the public interest.

- Article 262 of the Constitution allows Parliament to enact laws for adjudicating disputes related to inter-state river waters, and it can exclude the jurisdiction of the Supreme Court or any other court in such matters.
- Parliament has passed two laws, the River Boards Act (1956) and the Inter-State River Water Disputes (ISRWD) Act, 1956.

Factors Contributing to increased Inter-State Water Disputes:

- **Uneven Distribution:** India's water resources are unevenly distributed across different regions, with some states having abundant water while others face scarcity. Coastal Karnataka receives around 3000mm of average annual rainfall, compared to around 1000mm of Tamil Nadu. This disparity fuels competition.
- **Legal Issues:** The Constitution places 'water' in the State List. While the Centre can intervene in inter-state disputes, the process is often slow and cumbersome. The ISRWD Act 1956 sets up tribunals to adjudicate disputes, but the Cauvery Water Disputes Tribunal took 17 years to arrive at a conclusive ruling in 2007.
- **Competing Demands:** Population growth and urbanization have increased water demand for drinking, agriculture, and industry. This competition can lead to friction, as seen in the Mahanadi River dispute between Odisha and Chhattisgarh. Odisha accuses Chhattisgarh of using excessive water for industries, impacting its agricultural needs.
- **Water Scarcity:** India faces a growing water crisis affecting nearly hundreds of millions of people each year. For example, in June 2019, 65% of all reservoirs in India reported below-normal water levels, and 12% were completely dry.
- **Political Exploitation:** Water disputes in India are often influenced by political factors, including regional aspirations, electoral considerations, and states' perception of their rights over water resources. Example: Tamil Nadu and Karnataka have seen numerous political protests and instances of riots over sharing of Cauvery Water.

Measures to Address Inter-State River Water Disputes:

- **Streamlining Dispute Resolution:** The Lok Sabha passed the Inter-State River Water Disputes (Amendment) Bill in 2019, proposing a permanent tribunal and mediation committee. Though lapsed, it promised faster rulings and better data management, addressing outdated provisions of the 1956 Act.
- **Shared Governance:** Consider shifting water to the concurrent list, as recommended by the **Mihir Shah** report, allowing for a central water authority to manage river basins collaboratively with states.
- **Demand-Side Management:** Promote water-saving irrigation like drip systems. Encourage basin-specific, low-water crops, for instance, pulses over sugarcane in water-scarce Marathwada.
- **Supply-Side Augmentation:** Enhance water availability via rainwater harvesting, check dams, and additional reservoirs. Tamil Nadu leads by making rooftop harvesting mandatory statewide.
- **Urban Planning Integration:** There is a need to integrate urban and water planning to address urbanization's impact on water resources. For example, increased focus on sewage treatment, mandatory rain water harvesting in buildings etc. should be promoted.
- **Leverage Legal Frameworks:** Use Parliament's Entry 56 (Union List) to create river boards under the National Water Policy. Maintain SC's original jurisdiction, as in the Cauvery Tribunal case.
- **Borrow International Models:** Adoption of France's 'water parliament' system can be considered. This model involves non-governmental and environmental organizations in river management decisions.
- **Depoliticize and Collaborate:** There is a need to Shift away from politicizing water disputes and emotional regional arguments. Various federal platforms like the Inter-State Council and Zonal Councils should be utilized effectively, to facilitate dialogue and resolve conflicts.

India holds 18% of the world's population but just 4% of renewable water, leading to rising water disputes. These challenge federal unity and demand cooperative, non-political solutions. The Inter-State Council can play a key role in fostering dialogue and timely resolution among states.

Vulnerable Sections**Criminalising Marital Rape in India**

Context: The central government conveyed the Supreme Court it opposes criminalising marital rape, arguing the issue needs a "comprehensive approach" rather than just a "strict legal view."

What is Marital Rape?

- Marital rape refers to a situation where one spouse engages in sexual activity with the other spouse without their free and willing consent. It involves **non-consensual sexual intercourse within a marriage**.
- The exception to marital rape originates from 17th-century English law, where it was believed that a wife, by marrying, gave permanent and irrevocable consent to sexual intercourse.
- **Section 63 of the Bharatiya Nyaya Sanhita (BNS)**, which replaced the Indian Penal Code (IPC), defines the offence of rape. However, it continues the legal exception for marital rape, meaning that forced sexual intercourse by a husband with his wife (above 18 years) is not recognised as rape under the law.
- **Section 375 of the IPC** originally defined rape and included Marital rape as an exception (sexual intercourse or sexual acts by a man with his own wife, the wife not being under fifteen years of age, is not rape).
- In 2017, the Supreme Court ruled that sexual intercourse with a wife below 18 years is statutory rape, aligning it with the age of consent under child protection laws.

Did You Know???

- According to the UN Population Fund, more than two-thirds of married women in India, aged 15 to 49, have been beaten, or forced to provide sex.
- In 2011, the International Men and Gender Equality Survey revealed that one in five has forced their wives or partner to have sex.

Issues with the Marital Rape Exception (Arguments for its Criminalisation)

- **Violation of Constitutional Rights:**
 - **Article 14 (Equality before law):** The exemption **discriminates against married women** by denying them legal protection against rape.
 - **Article 21 (Right to life and personal liberty):** Denies women autonomy over their bodies and reproductive choices. Courts have recognised this includes the right to abstain from sex and make personal decisions.
- **Right to Privacy:** The Puttaswamy judgment held that **decisional autonomy, including sexual autonomy, is part of the right to privacy**. Marital rape clearly violates this principle.
- **Inadequate Legal Protection:** The **Protection of Women from Domestic Violence Act (2005)** recognises marital rape as abuse but does not criminalise it, leaving women without full legal recourse. It only provides civil remedies.
- **International Obligations Ignored:** Bodies like the UN and Convention on the Elimination of All Forms of Discrimination Against Women have urged India to criminalise marital rape.
- **Justice Verma Committee (2013):** It also recommended removal of this exception after the Nirbhaya case.
- **Legal and Social Consequences:** The exception sends a message that a wife's consent is secondary to the institution of marriage. It reinforces patriarchal structures and normalises violence within marital relationships.

Arguments Against Criminalising Marital Rape

- **Misuse of Law:** Critics cite Section 498A misuse as a cautionary example. In 2020, 1,11,549 cases were registered under Section 498A. Of these, 16,151 were closed by police as false, mistaken, or civil in nature.
- **Burden of Proof:** There are concerns about how proof of non-consensual sex within marriage will be established in court. Critics worry that it may lead to difficulties in investigation, especially in private matters lacking physical evidence.

- **Impact on Marriage:** The government argued that making sexual acts between a husband and wife punishable as "rape" could seriously affect marital relationships. It feared this might disrupt the institution of marriage as traditionally understood in India.

Judicial Precedents on Marital Rape

- **Karnataka High Court (2022):** In the case *Hrishikesh Sahoo vs. State of Karnataka*, the court made an important decision by allowing a husband to be prosecuted for raping his wife.
- **Delhi High Court – Split Verdict (2022):** The Delhi High Court delivered a split opinion on whether the Marital Rape Exception (MRE) is constitutional:
- **Supreme Court Ruling (2022):** The Supreme Court acknowledged the concept of marital rape but only for a specific legal purpose. It allowed women to seek an abortion under the Medical Termination of Pregnancy (MTP) Act if the pregnancy was the result of non-consensual sex within marriage.

Marital Rape Laws Around the World

- **42% of countries** (77 out of 185) **criminalise marital rape**, according to Amnesty International.
- In many other nations, marital rape is either not mentioned in the law or is explicitly excluded from rape laws.

India must adopt a **balanced, rights-based approach**: criminalise non-consensual sex in marriage, ensure legal clarity, train law enforcement sensitively, and raise public awareness to challenge patriarchal norms.

Child Marriages in India

Context: The Supreme Court has ruled that child betrothals violate the fundamental rights of children, including their freedom of choice, personal autonomy, and right to a childhood.

About Child Betrothal

- Child betrothal in India refers to the practice of arranging future marriages between children, often before they reach the legal age of marriage.
- While the marriage itself may not take place immediately, the betrothal is considered a serious and binding agreement between families.
- These arrangements are typically made for cultural, social, or economic reasons, without the free consent of the children involved.

Child Marriages in India – Key Facts

- As of 2023, **1 in 5 girls and 1 in 6 boys in India are still married below the legal age**, according to a *Lancet Global Health study*.
- Child marriage among girls dropped from 49.4% (1993) to 22.3% (2021).
- For boys, it declined from 7.1% (2006) to 2.2% (2021).
- The study used data from five National Family Health Surveys (1993–2021).

State-wise Insights

- Bihar, West Bengal, Uttar Pradesh, and Maharashtra together account for over 50% of child marriages among girls. Jharkhand showed the largest increase in numbers (53.1%) from 1993 to 2021. All states except Manipur saw a decline in girl child marriage rates.

Global Context

- 12 million girls worldwide are married in childhood every year (UNICEF).
- UN Sustainable Development Goal 5 aims to end child marriage and harmful practices by 2030.

Why Child Marriages Still Happen in India?

- **Poverty and Economic Hardship:** Many families facing financial difficulties marry off their daughters early to reduce household expenses. Daughters are often seen as an economic burden. Girls from the poorest households are 1.5 times more likely to marry early than those from the richest group.

- **Patriarchy and Gender Discrimination:** In patriarchal societies, girls are undervalued. Families may believe that marrying their daughter early shifts the responsibility to the husband's family, thus reducing their own obligations.
- **Lack of Importance Given to Girls' Education:** When girls discontinue their education, their life choices become limited, making early marriage appear as the only option. According to data, 48% of girls with no education were married before the age of 18, compared to only 4% among those with higher education.
- **Cultural and Traditional Norms:** In conservative communities, child marriage is viewed as a way to protect family honour. It is wrongly believed that marrying girls early helps prevent premarital relationships and maintains their "purity."
- **Social Acceptance and Custom:** Child marriage continues because it is socially accepted in many regions. Long-standing traditions and religious customs often support the practice.
- **Safety Concerns:** Due to high rates of harassment and gender-based violence, many parents think marrying off their daughters early will keep them safe.
- **Weak Law Implementation:** Limited awareness, underreporting, and low conviction rates hinder the enforcement of child marriage laws. The conviction rate under the Prevention of Child Marriage Act is just 11%, compared to 34% for other crimes against children.

Consequences of Child Marriage

- **Physical Harm:** Girls married at a young age are more likely to experience domestic violence, as they may lack the power to protect themselves. Compared to women married as adults, child brides had 42% higher odds of facing lifetime Intimate Partner Violence.
- **Health Risks:** Child marriage often results in early and repeated pregnancies, posing serious health risks for young girls whose bodies are not fully developed for childbirth. Globally, 10–12 million child marriages occur each year, and around 5.5 million girls under 18 give birth annually.
- **Impact on Education and Skills:** Most child brides are forced to drop out of school. Without proper education and life skills, they remain dependent and vulnerable throughout their lives.
- **Violation of Rights:** Child marriage takes away a girl's basic rights such as the right to education, health, freedom of choice, and a safe and happy childhood.
- **Mental Stress:** Early marriage places intense emotional pressure on girls, often leading to depression, anxiety, and low self-esteem. A study in Ethiopia observed elevated rates of suicidal thoughts or attempts related to early marriage.
- **Global Concern:** Child marriage as a major barrier to equality, is addressed under SDG5, which aims to achieve gender equality and empower all women and girls.



Way Forward

- Supreme Court's 2024 strategy calls for a multi-dimensional approach to curb child marriage.
- Strict legal enforcement through Child Marriage Prohibition Officers and district-level accountability is mandated.
- Judicial measures include empowering magistrates and setting up fast-track courts.
- Community initiatives like the "Child Marriage Free Village" model and awareness campaigns are encouraged.
- Age-appropriate sex education in schools is emphasized to build early awareness.
- Technology tools such as a centralized reporting portal and data analytics will aid in monitoring and prevention.

- Media outreach in high-risk areas is recommended to spread awareness.

Dedicated funding, proper staff training, and use of the Juvenile Justice Fund ensure sustainable implementation.

Rights of Persons with Disabilities (RPwD) Act 2016

Context: A Supreme Court bench led by former CJI DY Chandrachud ruled that the provisions of the RPwD Act are mandatory, reaffirming accessibility as a fundamental right.

About Rights of Persons with Disabilities (RPwD) Act, 2016

- The RPwD Act, 2016 replaced the 1995 Act **to align with the UN Convention on the Rights of Persons with Disabilities (UNCRPD)**, ensuring dignity, equality, and independence for Persons with Disabilities (PwDs).
- As per Census 2011, PwDs constitute 2.21% of India's population.

Key Features of the Act

- **Disabilities Covered:** The Act recognizes 21 types of disabilities, including physical, intellectual, sensory, blood disorders, and multiple disabilities. More can be added by the government.
- **Benchmark Disability:** Persons with at least 40% certified disability are classified as having a benchmark disability and are eligible for special benefits.
- **Right to Equality:** Governments must ensure that persons with disabilities enjoy equal rights, dignity, and opportunities as others.
- **Right to Education:** Children aged 6–18 with benchmark disabilities have the right to free and inclusive education in government and recognized schools.
- **Reservation Benefits:** The Act provides at least 5% reservation in higher education, 4% in government jobs, and 5% in poverty alleviation schemes for persons with benchmark disabilities.
- **Accessible Infrastructure:** Public buildings, both government and private, must be made accessible under a fixed timeline to support the Accessible India Campaign.
- **Guardianship:** District courts can appoint limited guardians, allowing joint decision-making with the person with disability.
- **Central and State Advisory Boards:** These boards act as top-level policy-making bodies on disability matters at the national and state levels.
- **Chief Commissioner and State Commissioners:** These officials will monitor the implementation of the Act and address grievances, with support from expert advisory committees.
- **District Committees:** State governments will set up district-level committees to address local issues faced by persons with disabilities.
- **National and State Funds:** Special funds will be created to provide financial support to persons with disabilities and consolidate existing funds.
- **Penalties for Violations:** First-time violations may lead to up to 6 months' jail and/or ₹10,000 fine; repeated offences can lead to up to 2 years' jail and ₹50,000–₹5 lakh fine.
- **Protection from Abuse:** Anyone who insults, intimidates, or sexually exploits a person with disability can face imprisonment from 6 months to 5 years with a fine.
- **Special Courts:** Each district will have designated special courts to handle cases related to the violation of disability rights.

Key Government Schemes for PwDs

- **Assistance for Aids and Appliances:** Provides grants to help persons with disabilities get modern and durable assistive devices.
- **Deendayal Disabled Rehabilitation Scheme:** Supports NGOs in running education, training, and rehabilitation projects for PwDs.
- **Scholarships for Students with Disabilities:** Aims to help students with disabilities for higher education and employment.
- **National University of Rehabilitation Science:** A dedicated university focused on disability studies and rehabilitation sciences.
- **Rehabilitation Council of India:** A statutory body that ensures uniform standards for training professionals in the rehabilitation sector.

Challenges in Effective Implementation of the RPwD Act

- **Insufficient Financial Support:** Disability pensions under the Indira Gandhi National Disability Pension Scheme remain nominal (₹300–500/month), which is inadequate given current inflation.

- **Weak Intergovernmental Coordination:** Delays by states in submitting Utilisation Certificates have often led to the withholding of central funds for PwD initiatives. Since 2014, ₹508.26 crore of the allocated budget has remained unspent.
- **Inadequate Financial Allocation:** The Department of Empowerment of Persons with Disabilities received ₹1167 crore in 2024-25, accounting for just 0.024% of the total government expenditure. This is insufficient for addressing the needs of ~2.6 crore persons with disabilities.
- **Inadequate Rehabilitation Infrastructure:** A majority (approx. 69%) of persons with disabilities live in rural regions where access to rehabilitation services remains limited.
- **Educational Barriers:** Funding for education-related schemes for PwDs has remained largely unchanged over the years. Most targets under these schemes, with the exception of the National Fellowship Scheme, have not been achieved.
- **Lack of Reliable Data:** The absence of regularly updated and disaggregated data on persons with disabilities hampers the design and implementation of focused and effective interventions.

India's commitment to ensuring the rights and dignity of persons with disabilities is reflected not only in its domestic legislation like the RPwD Act, 2016 but also in its active participation in international frameworks such as the Incheon Strategy, the Biwako Millennium Framework, and regional declarations on disability rights. However, translating these commitments into meaningful change on the ground requires coordinated action

Use of Social Media

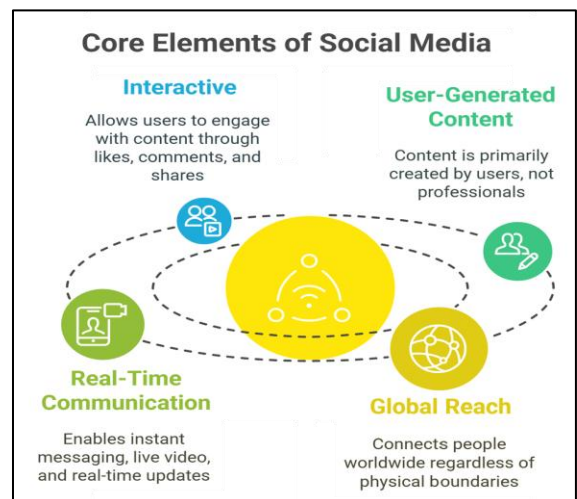
Context: Recently, Australia passed the Online Safety Amendment (Social Media Minimum Age) Bill-banning access to social media for children under 16.

What is Social Media?

- Social media refers to online platforms and technologies that allow people to create, share, and exchange information, ideas, images, videos, and messages in virtual communities and networks.
- **Popular Examples:** Facebook, Instagram, X (formerly Twitter), YouTube, WhatsApp, Snapchat, and LinkedIn.

Advantages of Social Media

- **Fast and Wide Communication:** Social media platforms allow instant sharing of information, making them useful for individuals, governments, and organisations alike. As of 2025, over 5.24 billion use social media around the globe.
- **Tool for Good Governance:** Citizens can report problems, give feedback, and hold the government accountable. 1 in 2 urban Indians (56%) claimed to turn to social media feeds as top choice for news and information.
- **Empowerment of Marginalised Groups:** Social media gives a voice to the underrepresented. Movements like #MeToo gained momentum through these platforms, helping communities speak out and connect.
- **Strengthens Democracy:** Social media bridges the gap between the government and the public. It promotes active civic engagement beyond just voting.



Disadvantages of Social Media

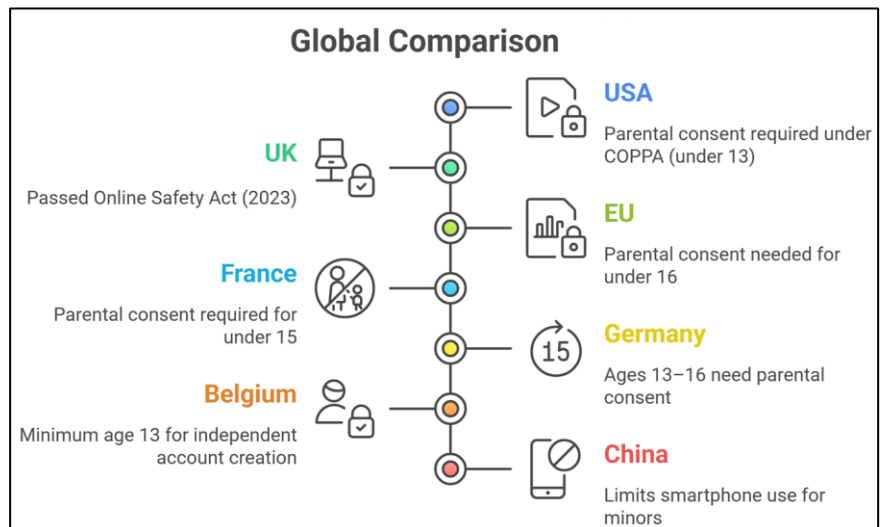
- **Spread of Misinformation:** The biggest concern is the unchecked spread of fake news, hate speech, and disinformation. 64% of Urban Indians believe social media feeds are the widest source of disinformation and fake news.
- **Mental Health Impact on Teenagers:** A 2023 study in The Lancet found that 22% of Indian teenagers reported anxiety or depression linked to social media use. NCRB reported a 12% increase in cyberbullying cases involving minors in India from 2022 to 2023.

- **Harmful 'Internet Persona' Culture:** Instagram's own research in 2021 revealed that 32% of teen girls felt worse about their bodies after using the platform.
- **Addiction and Emotional Impact:** While moderate use may boost mood, excessive use can alter brain functions linked to learning, emotions, and identity formation-especially in adolescents.
- **Privacy Concerns:** Personal data shared on social media can be misused for identity theft or scams. By 2022, India had recorded the highest number of identity theft cases in the world, with an estimated 27.2 million victims

Regulatory Framework for Social Media in India

- **Information Technology Act, 2000 (IT Act):** The IT Act is the principal legislation governing digital communication and online platforms in India, including social media.
- **IT Rules, 2021:** Set stricter compliance norms for social media platforms. Key mandates include appointing India-based grievance and compliance officers, tracing the "first originator" of flagged messages, and removing certain content within 24 hours of complaint.
- **Protection of Children from Sexual Offences (POCSO) Act:** Protects children from exposure to harmful online content.

Social media can be a powerful tool if regulated wisely. A mix of strong laws, platform accountability, and mental health awareness is essential to reduce its harmful effects-especially on young minds. As experts suggest, children need guidance to make sure the digital world helps them grow instead of harming them.



Tribes in India

Context: Tribes like the Great Andamanese, Jarawa, Onge, Sentinelese, Korwa, Karbond, Toto, and Lepcha are on the brink of extinction.

About Tribes in India

- According to the Imperial Gazetteer of India, a tribe is a group of families with a shared name, language, and territory.
- India, known as a melting pot of tribes and races, has the second largest concentration of tribal population in the world, constituting about 8.9% of the total population as per the 2011 Census.

Scheduled Tribes in India: Key Data Points (2011 Census)

- **Population:** 8.6% of India's population, approximately 10.4 crore people, with over 730 tribes identified as Scheduled Tribes (STs) under Article 342.
- **Residence:** 97% live in rural areas, while 10% reside in cities.
- **Largest Group:** Bhil tribe, comprising about 38% of the total scheduled tribal population.
- **Top State:** Madhya Pradesh has the highest tribal population.
- **Sex Ratio:** STs have a higher sex ratio of 990 females per 1000 males compared to the national average of 940.

Essential Characteristics of STs

- Indication of Primitive Traits
- Distinctive Culture
- Shyness of Contact with the Community at Large
- Geographical Isolation
- Backwardness

• according to the Lokur Committee (1965)

Contribution of Tribals in Various Spheres

- **Freedom Struggle:** Tribal leaders like Birsa Munda, Tilka Majhi, and Rani Gaidinliu led revolts such as the Santhal and Paika Rebellion against British rule, demanding land rights and autonomy.
- **Environmental Conservation:** Tribes have long practiced sustainable resource use. The Chenchus of Andhra Pradesh have helped conserve forests and protect tigers in the Nagarjunasagar-Srisailem Reserve.
- **Economic Role:** Tribes engage in agriculture, handicrafts, and forest-based livelihoods. The Gonds of Madhya Pradesh are known for farming, sculpture, and traditional crafts.
- **Indigenous Knowledge:** Tribal communities, like the Siddi tribe, have deep knowledge of nature, including beekeeping and medicinal plants, now valued by scientists.
- **Political Participation:** Tribal leaders like President Droupadi Murmu and Jai Oram have made significant contributions to Indian politics and governance.

Challenges Faced by Tribal Communities in India:

- **Displacement:** Sociologist Walter Fernandes found that 40% of displaced people are tribals, though they form only 8% of the population.
- **Exploitation and Marginalization:** They are often exploited and marginalized by powerful groups like government officials, landlords, and businessmen. In Odisha, mining companies have taken over Adivasi lands and resources.
- **Economic Marginalization:** Traditional tribal livelihoods like agriculture, forestry, and hunting are declining due to modernization and globalization. Tribals make up 20% of the multidimensionally poor despite being only 9% of the population.
- **Education Deficit:** Schools in tribal regions lack basic infrastructure and use unfamiliar languages, leading to low enrollment and preference for immediate employment over education. Census 2011 shows only 59% literacy among STs, compared to 74% overall.
- **Health Challenges:** Tribals suffer from diseases like malaria, malnutrition, and high infant mortality. Tribal communities bear a disproportionate burden of diseases such as Sickle Cell Anaemia. NFHS-5 shows 35% of ST women are anemic, above the 28% national average.
- **Loss of Control over Natural Resources:** Industrialization and state control over natural resources in tribal areas have displaced tribes from their cultural roots, depriving them of livelihood security.
- **Gender Issues:** Environmental degradation and commercialization expose tribal women to exploitation and commodification, exacerbating gender disparities and threatening traditional values.
- **Erosion of Identity:** Modernization and conflict with traditional institutions endanger tribal identity, with the extinction of tribal languages and dialects signaling a loss of cultural heritage.

Initiatives by Government for Upliftment of Tribes

- **ST Seats Reserved in Lok Sabha (Art 330) and Assembly Constituencies (Art 332):** Seats are reserved for Scheduled Tribes in areas where their population share is highest.
- **Article 338A - National Commission for STs:** Provides for a commission to investigate issues related to safeguards and rights of Scheduled Tribes.
- **Forest Rights Act, 2006:** Recognizes the rights of forest-dwelling communities, including STs, over forest land and resources.
- **PM Janjati Adivasi Nyaya Maha Abhiyan (PM JANMAN):** Targets vulnerable tribal groups with development services like housing, clean water, sanitation, education, healthcare, and road connectivity.
- **TRIFED (1987):** Promotes socio-economic development of tribes through marketing of tribal products and capacity building.
- **PM Janjatiya Vikas Mission (PMJVM):** Merges two livelihood schemes focused on supporting minor forest produce and tribal product marketing.
- **Eklavya Model Residential Schools (since 1997-98):** Provides quality education to tribal children in remote areas.

By fostering a conducive environment for their growth and development, society can benefit from their rich diversity. Collaboration between governments, civil society organizations, and communities is crucial to create a more equitable society.

Transgenders in India

Context: Five years after the Transgender Persons Act, 2019, the Karnataka High Court allowed a transgender woman to update her name and gender on her birth certificate.

About Transgenders

- A transgender person is someone whose gender identity differs from that typically associated with the sex they were assigned at birth.
- The 2011 census reported 480,000 trans people in the country, but activists argue this is a significant underestimation.

Issues Faced by Transgenders in India

- **Lack of Legal Protection:** India's lack of legal protection for transgender individuals leads to neglect, indifference, and custodial violence. E.g. In *Jayalakshmi v. Tamil Nadu* case, a transgender woman was tortured by Police to an extent that she immolated herself.
- **Poverty:** A study in India found that 92% of transgender individuals are denied the right to participate in economic activities, leading to high unemployment and marginalization, resulting in poverty and denial of essential services.
- **Harassment and Stigma:** Ridicule, societal labels, and discrimination fuel harassment and stigma, impacting various aspects of transgender lives. Around 91% of transgender persons faced depression, frequent alcohol use and victimization due to violence.
- **Anti-Trans Violence:** Forced conformity, abuse, forced marriages, and sex work (70% of transgender women in India are sex workers).
- **Healthcare Barriers:** Limited healthcare access and lack of medical competency create hurdles for transgender individuals in obtaining essential care. While 7.2% of transgender people are living with HIV, only 59% of them had been referred for testing.

Background:

- In 2014, the Supreme Court in *NALSA v. The Union of India* affirmed the constitutional right of individuals to self-identify their gender and directed governments to extend reservations in education and jobs to transgender persons.
- Based on this ruling and recommendations by the Parliamentary Standing Committee on Social Justice, the Transgender Persons (Protection of Rights) Act, 2019 was enacted, overseen by the Ministry of Social Justice and Empowerment.
- **Objective:** The Act safeguards transgender rights and prevents discrimination in healthcare, education, employment, and public services, promoting equal opportunities and social inclusion.

Salient Provisions of the 2019 Act:

- **Definition:** A transgender person is one whose gender does not align with their birth-assigned gender. This includes trans-men, trans-women, intersex individuals, gender-queers, and socio-cultural identities like kinnars and hijras.
- **Anti-Discrimination Provisions:** Prohibits denial or unfair treatment in education, employment, healthcare, housing, public services, holding office, and access to public/private establishments.
- **Certificate of Identity:** Transgender persons can apply to the District Magistrate for a certificate indicating their gender as 'transgender'. A revised certificate requires proof of gender-affirming surgery.
- **Welfare Measures:** The government must implement schemes such as rescue, rehabilitation, vocational training, and self-employment for social inclusion of transgender persons.

- **Offenses & Penalties:** Criminalizes offences like bonded labor, denial of public access, eviction, and abuse (physical, sexual, emotional, economic), with punishments ranging from six months to two years and fines.
- **National Council for Transgender Persons (NCT):** Chaired by the Union Minister for Social Justice, the Council advises on policies, monitors implementation, and addresses grievances of transgender persons.

Issues with the Act

- **Limited Right to Self-Identification:** The Act removes the provisions for a District Screening Committee, leaving the authority to issue the Certificate of Identity solely with the District Magistrate, while the NALSA judgment allowed self identification of gender.
- **Legal Discrimination:** The Act prescribes lighter penalties for sexual abuse (upto 2 years imprisonment) against transgender persons compared to those for rape against women (upto life imprisonment) under the Indian Penal Code (IPC). The Act does not prescribe any punishment for discrimination against transgender persons.
- **No Review Mechanism:** If a transgender person is denied a Certificate of Identity, the Act does not provide an appeal or review mechanism for the District Magistrate's decision.
- **Lack of Affirmative Action:** The Act fails to include provisions for affirmative action in employment or education, despite the Supreme Court's mandate in the NALSA judgment.
- **Ignoring Community Diversity:** The Act fails to recognize various identities within the transgender community, including intersex variations and socio-cultural identities like hijra, kinner, and others.
- **Lack of Welfare Provisions:** The Act focuses on identity verification rather than outlining specific welfare benefits or reservations.

Initiatives for Transgender Persons

- **National Portal for Transgender Persons:** Enables online applications for certificates and ID cards, status tracking, and grievance redressal-ensuring transparency and no physical official interaction.
- **Garima Greh:** A shelter home scheme providing food, clothing, recreation, skill training, legal aid, and gender transition guidance for transgender persons.
- **Recognition in Prisons:** In January 2022, the Ministry of Home Affairs advised ensuring transgender inmates' privacy and dignity, addressing gaps in the Prisons Act, 1894, which lacks SOGI-based classification.
- **Health Schemes:** Ayushman Bharat TG Plus offers health insurance, including coverage for gender-affirming surgeries.

NHRC Recommendations for welfare of Transgender Persons

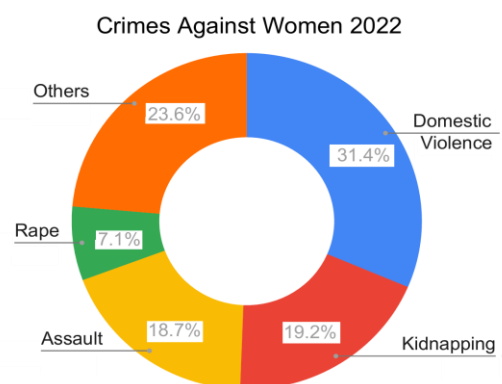
- **Public Facilities:** Ensure separate washrooms and old-age home access for transgender persons.
- **CSR Inclusion:** Add transgender welfare to CSR activities under the Companies Act.
- **Anti-Discrimination Cells:** Set up district-level cells and campus committees to tackle bias and violence.
- **Family Sensitization:** Use Anganwadi workers to educate families on transgender issues.
- **Pension & Inheritance:** Grant family pension rights and allow inheritance of ancestral land to transgender individuals.

Crimes Against Women

Context: The data from the National Crime Records Bureau (NCRB) paints a worrying picture: crimes against women in India have risen by 12.9% between 2018 and 2022.

Crimes Against Women: State-wise Data (2022)

- **Uttar Pradesh:** Highest number of FIRs at 65,743 (about 15% of all cases), but its crime rate (58.6) is below the national average.
- **Delhi:** Highest crime rate at 144.4 per lakh women, more than double the national average.



- **Other states with high crime rates:** Haryana (118.7), Telangana (117), Rajasthan (115.1), Odisha (103), Andhra Pradesh (96.2), Kerala (82), Assam (81), Madhya Pradesh (78.8), Maharashtra (75.1), West Bengal (71.8).

Underlying Causes of Crimes Against Women in India:

- **Patriarchal Social Structure and Gender Norms:** Indian society is largely shaped by patriarchal values, where men are seen as decision-makers and women are expected to be submissive. Practices like honor-based violence are often accepted in the name of preserving family or community reputation.
- **Weak Enforcement:** The conviction rate for crimes against women in India remains low. In 2021, the national conviction rate was 26.5%, down from 29.8% in 2020. This means that only about one in four cases that reach the courts result in a conviction.
- **Socio-Economic Inequality and Dependency:** Illiteracy and poverty make women more vulnerable to exploitation and abuse. Many women, especially in rural and tribal areas, lack financial independence, which limits their ability to resist or report violence. Indian women perform nearly 10 times more unpaid care work than men, leaving little time for education or employment.
- **Cultural Attitudes and Socialization:** From a young age, girls are taught to be submissive, adjust, and stay silent, even in the face of abuse. Child marriage, still affecting over 23% of girls in India (NFHS-5), exposes them to early pregnancy, domestic violence, and lack of education.
- **Barriers to Justice and Support:** Fear of social stigma, retaliation, or victim blaming often prevents women from filing complaints. Legal and medical systems can be intimidating, insensitive, or simply unavailable, particularly in rural areas. 22% of police stations in India are still without exclusive women's help desks.

Government Response

A. Comprehensive Legal Reforms

- **Bharatiya Nyaya Sanhita (BNS) 2023:** Consolidated laws on crimes against women/children; stricter penalties for rape (including death penalty for raping minors); recognized new offenses like sex under false pretense or identity.
- **Criminal Law Amendments (2013 & 2018):** Harsher punishments for rape, including fast-track trials and death penalty for rape of girls under 12.
- **Protection of Women from Domestic Violence Act (PWDVA):** Ensures Protection Officers in districts and provides shelter, protection, and support orders.
- **POCSO Act & Rules:** Protects children from sexual abuse; mandates training, verification, and special support schemes for victims.

B. Institutional and Support Mechanisms

- **One Stop Centres (OSCs):** Offer legal, medical, and psychological help under one roof.
- **Helplines (1091, 112):** Round-the-clock and location-based emergency services for women.
- **Police & Judicial Support:** Women Help Desks, Fast Track Special Courts (including POCSO courts) for speedy justice.
- **SHe-Box:** Online platform to report workplace harassment.
- **Project Stree Manoraksha:** Offers trauma-informed care for survivors at OSCs.
- **Nirbhaya Fund:** Supports projects for women's safety and victim rehabilitation.

There is a pressing need to introduce gender education from an early age, ensure stronger enforcement of existing laws, and enhance support services such as shelters and helplines. Additionally, the media must be used to question and reshape harmful social norms, while promoting inclusive economic opportunities to empower women meaningfully.

Women and Dual Burden of Work

Context: Women in India face a dual burden (juggling paid work and unpaid domestic duties) due to cultural norms, limited support, and inflexible workplace policies.

About Double Burden of Work

- The term “double burden” (or “second shift” as coined by Arlie Hochschild) refers to the **workload of persons (typically women) who work at paid jobs** while also having responsibility for a significant portion of **unpaid care work** (such as cooking, cleaning, and caregiving).
- According to a 2024 study, Women worldwide spend three times more time on unpaid domestic and care work than men, but in **India, women spend almost ten times more time on domestic & care work than men.**

Socio-Cultural Factors Contributing to the Dual Burden on Working Women in India

- **Traditional Gender Roles:** Cultural norms in India primarily assign domestic and caregiving roles to women, regardless of their jobs. In joint families, daughters and daughters-in-law are expected to care for children and elders, adding to their burden.
- **Limited Male Participation in Domestic Chores:** Despite women's increased participation in the workforce, there has not been a proportional shift in men's involvement in household responsibilities. On average, Indian women spend 305 minutes (almost 6 hours) a day on unpaid domestic work. In comparison, men spend only 52 minutes - a 577% difference.
- **Lack of Support Structures:** Spousal and family support for domestic sharing is minimal due to traditional mindsets. Unpaid care work lacks recognition, while some traditionally rooted daily soaps reinforce outdated gender roles.
- **Inflexible Workplace Policies:** While some progress is being made, many workplaces still lack sufficient flexible work hours, work-from-home options, and generous leave policies. This rigidity makes it challenging for women to balance their professional and personal lives.
- **Increased Nuclearization of Families:** With the shift from extended to nuclear family structures, there is less support from relatives for domestic tasks and caregiving. This means the women must shoulder both paid and unpaid work without help from a wider family.

Impact of the Dual Burden of Work

- **Mental Health and Stress:** When women juggle both paid jobs and unpaid household work, it leads to chronic stress. This stress raises levels of cortisol (a stress hormone), increasing the risk of anxiety and depression. Studies from the U.S. and Sweden show that women doing more housework than their partners are more likely to suffer from depression.
- **Time Use Inequality:** The unequal time use between men and women leaves women with less time for jobs, hobbies, or rest, reducing their chances to grow personally and professionally.
- **Physical Health and Chronic Disease:** In China, women giving 20+ hours of care and working 50+ hours weekly showed worse health. Dual burden raised their chances of chronic illness by 0.63%, being under/overweight by 1.69%, and poor health by 2.35%.
- **Sickness Absence and Work Performance:** When work and family roles clash, it leads to more sick days. For women, the odds of mental distress doubled and poor physical health increased by 1.6 times when compared to men, according to a study.
- **Economic and Social Consequences:** A study showed, young unpaid caregivers in the UK (mostly women) face worse mental health, lower income, and higher welfare use. Unpaid work is undervalued, reducing women's visibility in the economy and access to dignified work.



Addressing this imbalance requires a multi-pronged approach, including promoting shared household responsibilities, improving workplace support systems, recognizing unpaid care work, and challenging traditional gender roles through policy and awareness. Only then can we move toward a more equitable and inclusive society where women are truly empowered both at home and in the workforce.

Need for Law on Domestic Workers

Context: The Supreme Court has asked the Union government to consider a separate law for domestic workers, marking an important move to acknowledge their rights.

Need for a Law for Domestic Workers in India

- **Large Workforce Without Legal Protection:** India has 25 to 80 million domestic workers, one of the largest in the world. Despite this, no national law exists to protect their wages, working hours, or social security. Their rights are also ignored by the new Labour Codes.
- **Exclusion from Labour Codes:** The Code on Wages includes domestic workers only if five or more are employed in the same household, which is an unrealistic condition. Most domestic workers work alone in homes, leaving them outside the law and open to legalised underpayment.
- **Lack of Social Security:** The Code on Social Security classifies domestic workers as part of the "unorganised sector." This means they don't get legally guaranteed benefits like Provident Fund (PF), Employee State Insurance (ESI), or gratuity.
- **Deep Social and Gender Discrimination:** Domestic work is shaped by: Gender roles (seen as "women's duty"), Caste and class discrimination (90% sweepers belong to the lowest Dalit sub-castes). Society devalues care work and treats it as low-status, affecting the dignity of workers.
- **Employers Resist Legal Protection:** Many employers oppose regulation, fearing: Higher wages, Increased demands for rights, Government inspections. Even middle-class families benefit from cheap domestic labour, creating social resistance to reform.
- **Invisible but Essential Work:** Domestic workers enable others (especially urban middle-class women) to participate in the workforce by taking over household chores. But these workers themselves are denied equal rights and dignity.
- **Towards Social Justice and Gender Equality:** A law would not only protect workers' rights but also challenge unjust social norms. It would require society to rethink how household chores and care work are shared.
- **Fragmented State-Level Measures:** While some states (e.g., Andhra Pradesh, Karnataka, Kerala, etc) have included domestic workers under the Minimum Wages Act or established welfare boards, these measures are fragmented, inconsistently implemented, and lack a rights-based approach.

Attempts for Central Legislation on Domestic Workers

- **The Domestic Workers (Conditions of Employment) Bill, 1959:** One of the earliest efforts to define and protect the working conditions of domestic workers.
- **The Domestic Workers (Regulation of Work and Social Security) Bill, 2017:** Sought to ensure fair wages, working hours, and access to social security.
- **Draft National Policy on Domestic Workers (2019) (Yet to be implemented):** Proposed key provisions such as: Right to minimum wages, social security, and protection from abuse.

Way Forward

- **Learn from Regional Models:** Kerala's Domestic Workers (Regulation and Welfare) Act, 2021 provides a useful example. It ensures: Minimum wages and written contracts, Safe working conditions and protection from exploitation, Regulation of placement agencies
- **Include Workers' Voices:** Domestic workers' unions must be actively consulted in the law-making process.
- **Build for the Long Term:** While immediate change may be slow, a national law will lay the foundation for long-term dignity, rights, and protection for domestic workers.

Manual Scavenging

Context: Recently, a 40-year-old manual scavenger died after he accidentally slipped into a manhole while trying to clean a sewage in Tamil Nadu.

Manual Scavenging in India

- Manual scavenging refers to the practice of manually cleaning, handling, or disposing of human excreta.
- This often involves cleaning: Insanitary dry latrines, Open drains, Septic tanks, Railway tracks or pits, without protective gear or proper equipment.

Current Status in India

- As of 2018, 58,098 people were identified as manual scavengers in India.
- The Hindu in a report stated that about 68.9% belong to the SC community, 14.7% to the OBC community, 8.3% to the ST community. 8% are from the general category.
- Around 75% of them were women, reflecting both gender and caste-based vulnerability.
- By 31st July 2024, 732 out of 766 districts had officially declared themselves manual scavenging-free. However, independent reports suggest that the practice still exists in some places.

Violation of Fundamental Rights

- **Article 17** of the Indian Constitution prohibits untouchability-manual scavenging is a clear form of caste-based discrimination.
- **Article 21** guarantees the right to life with dignity. Forcing individuals to engage in such degrading work violates this right.

Legal Framework

- **Prohibition of Employment as Manual Scavengers and Their Rehabilitation Act, 2013:** It bans the employment of anyone for manual scavenging. It requires existing insanitary toilets to be converted into sanitary ones and calls for the identification and rehabilitation of manual scavengers.
- **SC/ST (Prevention of Atrocities) Act, 1989:** Treats the employment of Scheduled Castes in manual scavenging as a punishable offence.

Major Challenges Faced by Manual Scavengers

- **Health Hazards:** Manual scavengers come into direct contact with human waste, exposing them to diseases like hepatitis, tetanus, cholera, and skin infections. From 2019 to 2023, 377 people died while cleaning sewers and septic tanks.
- **Social Stigma:** They are often seen as "untouchables", reinforcing caste discrimination. This leads to exclusion from education, community life, and basic social dignity.
- **Economic Exploitation:** Most are paid below minimum wage and work on a daily or contract basis, without job security, health coverage, or pensions.
- **Double Discrimination Against Women:** Of the 1.2 million manual scavengers in India, about 95% to 98% of them are women. They often suffer from sexual harassment, abuse, and loss of dignity.
- **Mental and Emotional Trauma:** Social rejection and humiliation cause mental health issues like depression and anxiety. Poverty makes it hard to access psychological support.
- **Substance Abuse:** To cope with stress and stigma, some turn to alcohol or drugs, which worsens their health and deepens their poverty.

Supreme Court Directions in Dr. Balram Singh Case (2023)

- Union, States, and UTs should take firm steps to **eliminate manual scavenging and hazardous sewer cleaning**.
- **Full rehabilitation** must be provided to affected workers and their families: Employment for the next of kin, Education for children, Skill development and training
- **Compensation:** For sewer deaths ₹30 lakh, For disabilities: ₹20 lakh
- A **nationwide survey** must be completed within one year to identify all manual scavengers.

Government Schemes and Institutions for Sanitation Workers

- **National Safai Karamchari Finance and Development Corporation (NSKFDC), 1997:** A non-profit company under the Social Justice Ministry. Provides financial and skill-based assistance to Safai Karamcharis through various loan and non-loan schemes.
- **National Commission for Safai Karamcharis (NCSK):** Established in 1994 as a statutory body for three years. Currently functions as a non-statutory body under the Ministry of Social Justice and Empowerment. Monitors and advises on issues related to the welfare of Safai Karamcharis.
- **NAMASTE Scheme (2023):** Implemented by NSKFDC. Aims to ensure the safety, dignity, and rehabilitation of hazardous sanitation workers through mechanisation and support services.
- **Swachh Bharat Mission – Urban 2.0:** Focuses on promoting mechanised cleaning in smaller towns.

The NHRC suggests maintaining a clear distinction between sanitation workers and manual scavengers under the 2013 Act. The informal de-sludging sector should be regulated, with proper safety gear and awareness training for workers. Support should be given to tech innovations like **Kerala's Bandicoot robot for sewer cleaning**. Investment in sanitation infrastructure and periodic surveys are needed to identify and rehabilitate manual scavengers, as the last survey was conducted in 2018.

Caste Census

Context: The Cabinet Committee on Political Affairs has approved including caste data in the upcoming Census.

History of Caste Census in India

- **Pre-independence Era:** Caste as a part of Census was first introduced under the British colonial administration in 1881 and continued till the 1931 census.
- **World War II Period:** In 1941, caste-based data was collected but not published due to constraints related to time and cost.
- **Post-Independence:** From 1951 to 2011, Indian Censuses recorded data only on Scheduled Castes and Scheduled Tribes, avoiding other castes to prevent reinforcing caste divisions.
- **Mandal Commission:** Set up to estimate the OBC population, it reported that OBCs form around 52% of the population.
- **Socio-Economic and Caste Census (SECC):** Launched in 2011 to improve targeting of welfare schemes. Its economic data was published in 2016, but caste data was withheld.

Need of Caste Census

- **Improved Policy Making:** A caste census would give accurate data to design targeted policies like scholarships and healthcare for marginalized groups, supporting evidence-based affirmative action.
- **Rationalization of Reservation:** Current reservation policies rely on outdated 1931 caste data. Updated data can help identify over-represented groups and adjust quotas fairly to benefit underrepresented castes.
- **Better Targeting of Welfare Schemes:** It enhances the precision of welfare delivery. In Bihar, over half of general category families lived in two-room houses or more, compared to only 24.26% of SCs and 25.81% of STs. This highlights the need for more inclusive scheme designs like PMAY.
- **Addressing Social Inequality:** By identifying the truly disadvantaged, the census can help reduce inequality. The Bihar Survey found that only 1.72% of SC households earn above ₹50,000/month, compared to 9.86% of General Category households.
- **Understanding Social Structure:** Caste deeply influences India's society and economy. A caste census would offer a fuller picture of this diversity and help understand inter-group dynamics.
- **Constitutional Backing:** Article 340 mandates the government to identify socially and economically backward sections through such data collection and take necessary action.

Arguments against Caste Census

- **Caste-Based Political Mobilization:** Collecting caste data could intensify caste-driven politics as parties use it for electoral gains. Rather than promoting unity, it may deepen divisions and reduce administrative efficiency.

- **Challenges in Data Collection:** India's diverse caste landscape poses logistical hurdles. Caste names vary by region, and backward status differs across states. While the 1931 census listed 4,147 castes, the 2011 SECC recorded 46 lakh castes.
- **Pressure for More Reservations:** A caste census may trigger fresh demands for quotas. Groups like Patels, Gujjars, and Jats have already sought inclusion. Rising demands may strain the 50% reservation cap, potentially leading to legal challenges.
- **Impact on National Integration:** Caste enumeration may reinforce caste identities and hinder social cohesion. Data from past surveys like SECC remains undisclosed due to fears of social division.
- **Risk of Stigmatization:** Public caste data may lead to bias or discrimination. This fear might discourage honest responses, affecting the accuracy of the census.

Measures to Improve Accuracy and Credibility

- **Predefined Caste List:** RGI must consult academics, caste groups, and states to finalize a verified caste list before enumeration.
- **Verification & Grievance Redressal:** Use Aadhaar for identity checks; build multi-tier checks and public grievance systems. Local oversight can boost trust.
- **Tech Integration:** Use AI/ML to clean and analyse caste data systematically.
- **Sub-Categorization:** Implement Rohini Commission's recommendations and SC's Davinder Singh (2024) ruling to sub-classify SCs/STs based on empirical backwardness.
- **Link With Socio-Economic Data:** Use MPI and updated poverty measures alongside caste data. The Tendulkar Committee found major inclusion/exclusion errors in BPL/APL lists.
- **Tailored State Policies:** Allow regional flexibility for state-specific welfare programs rather than a one-size-fits-all model.
- **Prevent Political Misuse:** Use caste data for inclusive development, not electoral gains. Monitor policy outcomes based on data.

Education

Higher Education in India

Context: Union Cabinet approved a new Central Sector Scheme, PM Vidyalaxmi, which seeks to provide financial support to meritorious students applying for higher education.

About Higher Education in India

- The term 'higher education' in India denotes the **tertiary level education that is imparted after 12 years of schooling.**
- This includes UG courses such as bachelor's degrees, PG courses such as master's degrees and doctoral programs, as well as professional courses.
- As per the **All India Survey of Higher Education (AISHE) 2019-20**,
 - There are 1,043 universities, 42,343 colleges, and 11,779 stand-alone institutions.
 - The total enrolment in higher education stands at 3.85 crores, and the **Gross Enrolment Ratio (GER)**, the percentage of students belonging to the eligible age group enrolled in higher education, is 27.1%.
 - The **Pupil-Teacher Ratio (PTR)** in universities and colleges is **28:1** (one teacher for every 28 students).
- As per the **QS World University Rankings 2023**, **only three Indian universities have secured a spot amongst the top 200:** IISc

Recommendations for Improving Higher Education in India

Dr. K. Radhakrishnan Committee

- The committee proposed a binary accreditation system where institutions are certified as either "Accredited" or "Not Accredited."

FICCI EYP Report on Higher Education in India

- Focus on developing research-oriented HEIs by activating research communities at local and national levels by collaborating with industry
- Provide scholarships to vulnerable communities and utilize Massive Open Online Courses (MOOCs) and Open Distance Learning (ODL) to reach underserved areas.

Bengaluru (Rank 155), IIT Bombay (Rank 172), and IIT Delhi (Rank 174).

- As per the **National Institutional Ranking Framework of India 2021**, the best colleges in the country are concentrated in 9 of India's 28 states, which highlights regional disparities in higher education.

Issues and Challenges

- **Inadequate Investments:** Government spending on education is only 2.7% of GDP, falling short of the recommended 6% by the Kothari Commission.
- **Teacher Vacancies:** Over 56% of professor posts are vacant in top institutions like IITs and central universities, as per a parliamentary report.
- **Resource Shortage:** State universities and affiliated colleges, which handle the bulk of higher education enrollment, receive disproportionately low grants compared to central universities. Nearly 65% of the UGC budget is utilised by the central universities and their colleges while state universities and their affiliated colleges get only the remaining 35%.
- **Accreditation Limitations:** NAAC and NBA face challenges in accrediting all Higher Education Institutions (HEIs) due to inadequate capacity. Around 30% universities and colleges across the country are still unaccredited as per NAAC.
- **Research Shortcomings:** Only 2.7% of colleges offer PhD programs and 35% offer postgraduate-level programs. Additionally, India's investment in research and development (R&D) remains low at 0.6% to 0.7% of GDP, trailing behind countries like the US, China, Israel, and Korea.
- **Academic Flexibility:** Fewer than 1% of Indian colleges are enrolled in the Academic Bank of Credits (ABC), and only a limited number offer flexible curricula or multiple entry-exit options.
- **Lack of Accountability:** Unlike foreign universities where faculty performance is evaluated by peers and students, there is no mechanism for ensuring accountability and performance of professors in Indian universities and colleges.

Recent Government Initiatives for Higher Education

PM Vidyalaxmi Scheme

- Inspired by the National Education Policy, 2020, PM Vidyalaxmi provides financial aid to deserving students in both public and private higher education institutions (HEIs).

Key Objectives:

- Promote financial inclusion in education.
- Support top-ranked institutions (based on NIRF rankings).
- Ensure a transparent, digital, and student-friendly loan application process.

How It Differs from Previous Schemes:

- **Wider Coverage:** Includes middle-income families and is caste-neutral.
- **Simplified Process:** Loans can be easily applied for and tracked via the Vidyalaxmi portal connected to major banks.
- **Selective Eligibility:** Applies only to institutions ranked in the top 100 in NIRF, unlike earlier schemes which accepted any NAAC or NBA-accredited institutes.

- **Education Quality Upgradation and Inclusion Program (EQUIP):** Improves education quality in state universities through funding for infrastructure, faculty training, and curriculum upgrades.
- **Institute of Eminence (IoE):** Grants autonomy to select universities to develop world-class research and teaching.
- **Higher Education Financing Agency (HEFA):** Offers financial support for infrastructure and development needs in higher education institutions.
- **PM Research Fellows (PMRF):** Supports top young researchers across the country.
- **National Educational Alliance for Technology (NEAT):** Encourages integration of advanced technology in education delivery.

As we navigate these complexities, it is important to foster a culture of innovation, collaboration, and continuous improvement. Through concerted efforts and bold reforms, India can unlock the higher education sector's full potential as a catalyst for societal transformation and individual empowerment.

School Education in India

Context: The latest data from the Unified District Information System for Education Plus (UDISE+) highlights critical aspects of India's school infrastructure and enrollment trends.

About School Education in India

- Total students enrolled in school education from primary to higher secondary stood at **24.8 crore**.
- India shows high **enrolment at the primary level**, with a **GER of 93.0%**. This slightly declines to **89.7% at the upper primary level**, and **91.7% at the overall elementary level**. However, a significant drop is observed in higher classes- 77.4% at the secondary level and 56.2% at the higher secondary level
- **Pupil Teacher Ratio (PTR) stood at 21 for primary**, 18 for upper primary, 16 for secondary and 24 for higher secondary in 2023-24.

Challenges faced by School Education in India

- **Lack of Resources:** Although education funding has increased, India's expenditure remains below the global benchmark of 6% of GDP, staying between 2.8%- 4.36% since 2015. Inefficient fund utilization due to administrative delays also hampers progress.
- **Teaching Attribute:** The quality of teaching in many Indian educational institutions is compromised due to teacher shortages, outdated curricula, and ineffective instructional methods. UNESCO's 2021 report highlights that around 1.1 lakh schools in India have only a single teacher, 69% of teaching positions are in rural areas, and 19% of these positions are vacant.
- **Traditional Teaching Methods:** Traditional teaching methods are prevalent in many educational institutions, with limited use of information technology or audio-visual aids. This limits student engagement and learning outcomes. In 2023-24, 50% of schools lacked a computer and 47% had no internet access.

Basic Amenities in Indian Schools: A Snapshot

Electricity Access

- **1.52 lakh schools** still lack functional electricity.
- Of **10.17 lakh government schools**, **9.12 lakh** have functional electricity.

Drinking Water

- **14.47 lakh schools** report having drinking water facilities.
- However, only **14.11 lakh** have them in working condition.
- Around **24,580 schools** have **no access** to drinking water.

Toilet Facilities

- Toilets exist in **14.50 lakh schools**, but only **14.04 lakh** are functional.
- **67,000 schools**, mostly government-run, lack working toilets.

Accessibility for Differently-Abled Students

- Only **33.2%** of government schools have disabled-friendly toilets; just **30.6%** are usable.
- **77% of schools** have ramps, but only **52.3%** include handrails.

Digital and Co-curricular Infrastructure

- **50% of schools** lack functional computers.
- Only **17.5%** have dedicated **arts & crafts rooms**; government schools lag at **9.9%**.
- Of **2.86 lakh schools** with secondary sections, only **1.6 lakh** have **science labs**.

Renewable Energy Integration

- Only **1.54 lakh schools (10.5%)** have installed **solar panels**.
- Government schools are lower at **8.8%**.

Regional Disparities

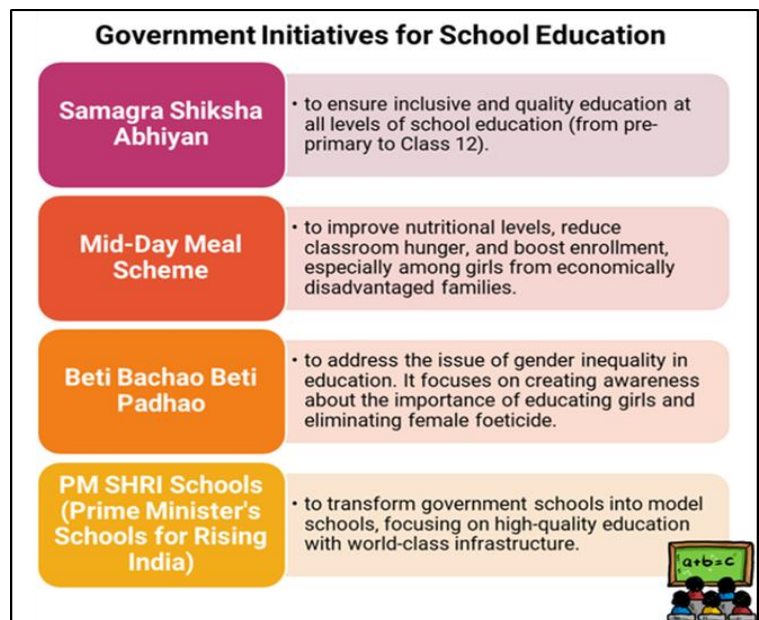
- **Madhya Pradesh** has the highest number of **single-teacher schools** (13,198), followed by **Andhra Pradesh** (12,611).
- **West Bengal** leads in the number of schools with **zero enrolments**.

- **Non-Academic Burden on Teachers:** Teachers are overburdened with administrative tasks like election duties, leaving limited time for teaching. A NIEPA study found they spend only 19% of their time teaching, with the rest consumed by non-teaching work.

- **Inadequate Facilities and Infrastructure:** Many schools and training centers lack proper infrastructure-such as classroom space, equipment, and electricity. A Parliamentary Panel reported only 56% of schools have electricity, with Manipur and Madhya Pradesh having less than 20% coverage.
- **Privatization:** Over 50% of education is delivered by private institutions. While this increases access, it raises concerns about quality and affordability. For instance, DPS RK Puram charges ₹1,09,200 annually, highlighting the high cost of private schooling.

Measures to Improve the Education Ecosystem in India

- **Incentives for Teachers and Researchers:** Competitive pay and benefits can help attract and retain skilled educators and researchers.
- **Adoption of Innovative Practices:** Using new technologies like AI enhances teaching methods and curriculum design.
- **Resource and Finance Mobilization:** Boosting public funding and encouraging private and PPP investments can strengthen the education sector.
- **Infrastructure Improvement:** Improving buildings, amenities, and tech access creates better learning environments.
- **Student-Centered Education and Dynamic Methods:** Focusing on learning to learn, do, be, and become fosters holistic development and prepares students for future challenges.
- **Decentralization:** Shifting control to local authorities improves accountability and daily functioning, addressing specific local needs effectively.
- **International Cooperation:** Engaging in international cooperation facilitates knowledge sharing, financial and technical support, and collaboration with global institutions.
- **Outcome-Based Objectives:** Focusing on real-world skills and problem-solving improves education quality.



Digital Literacy

Context: The PMGDISHA aimed to promote digital literacy in rural India, targeting 6 crore households has ended.

What is Digital Literacy?

- Digital literacy is the ability to use computers, mobile phones, and the internet for everyday tasks and staying connected.

Current Status

- Only 38% of Indian households are digitally literate.
- Urban areas have significantly higher digital literacy (61%) compared to rural areas (25%).
- Among urban workers, regular wage/salaried workers show the highest digital literacy (73%), while casual workers are at 30%.
- The digital divide is pronounced, with only 2.7% of the poorest 20% households having access to a computer and 8.9% to internet facilities.

Key Challenges to Digital Literacy in India

- **Urban–Rural Digital Divide:** Only 24% of rural households have internet access, compared to 66% in urban areas. Rural internet penetration is just 31%, while urban areas have 67% coverage. Poor infrastructure, weak mobile signals, and high data costs make digital access harder in rural India.
- **Socioeconomic Barriers:** Digital access is linked to income levels. Poorer families often can't afford smartphones or computers. There is a 19.9% point gap in digital literacy between rural men and women.
- **Affordability and Infrastructure:** Digital devices and data plans are still expensive for many low-income families. Lack of broadband, unstable electricity, and poor digital infrastructure reduce digital access in rural areas.
- **Gaps in Education and Skill Development:** Online learning during COVID-19 exposed the digital divide in schools, especially in rural and low-income areas. It is estimated that only 27.5% of students had access to digital devices when schools switched to digital mediums.
- **Language and Local Content Barriers:** Most digital content is in English, which many rural and low-literacy users find difficult to understand. Lack of regional language apps and websites discourages people from using online platforms.
- **Policy and Implementation Gaps:** Launched in 2011, and executed over three phases, the BharatNet programme has missed four major deadlines—in 2014, 2015, 2019 and 2023—and is set to miss the 2025 deadline of connecting rural India to broadband internet.

The Multifaceted Importance of Digital Literacy



Bridging the Digital Divide

Addressing access and skills gaps in rural and underprivileged areas



Government Services

Digital access requirements for essential services



Employment and Education

Digital competence needed for online jobs and learning



Financial Inclusion

Basic tech skills required for digital financial services

Key Government Initiatives

- **Digital India Program:** Launched to transform India into a digitally empowered society. Focuses on e-governance, e-education, e-healthcare, financial inclusion, and digital infrastructure.
- **Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDISHA):** As of now, about 6.39 crore individuals have trained.
- **National Digital Literacy Mission (NDLM):** Seeks to ensure at least one digitally literate person per household. Implemented through a multi-stakeholder approach involving government, NGOs, and private sector partners.

While India has made significant strides in digital literacy through government and private initiatives, substantial gaps remain, particularly in rural and marginalized communities. Bridging these divides is critical for inclusive growth and equitable access to digital opportunities.

NEP: Three Language Policy

Context: Tamil Nadu's resistance to adopting the three-language policy as mandated under the National Education Policy (NEP, 2020) has brought the language debate back under the limelight.

About the National Education Policy (NEP, 2020)

- The NEP is a comprehensive framework introduced to guide the development and regulation of education across all levels in the country.

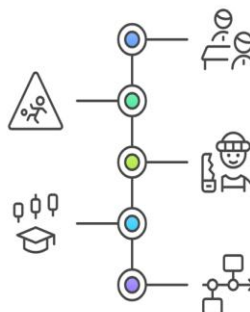
NEP 2020: Transforming India's Education System

Compulsory Schooling from Ages 3 to 18

Pre-schooling introduced for early childhood education

Higher Education Commission of India (HECI) Establishment

Overseeing higher education reforms



New 5+3+3+4 Structure Introduction

Educational stages aligned with developmental needs

Vocational Training from Grade 6

Early exposure to practical skills

SARTHAQ Implementation Plan

Detailed roadmap for NEP implementation

- It aims to transform India's education system to meet the needs of the modern era and global standards

What is the Three-Language Policy Under NEP 2020?

- According to this, Students must learn **three languages, with at least two being Indian languages**.
- This applies to both public and private schools, but no language will be forced on any state.
- At the secondary level, students can also choose to learn foreign languages like French, German, Japanese, Spanish, etc., to enhance global awareness and career opportunities.

Significance of the Three-Language Policy in NEP 2020

- **Promotes Multilingualism and Cognitive Growth:** NEP 2020 encourages students to learn three languages, with at least two being Indian. This helps improve communication, thinking skills, and adaptability in varied settings.
- **Preserves Cultural and Linguistic Heritage:** By focusing on regional languages, the policy protects India's diverse linguistic traditions. It helps keep local languages alive and builds pride in cultural roots.
- **Fosters National Unity:** Learning languages from different regions helps bridge regional divides. The policy promotes mutual respect and strengthens national integration.
- **Boosts Career and Mobility Prospects:** Knowing multiple languages widens job and education opportunities across states. It also prepares students for global roles by promoting both Indian and foreign languages.
- **Offers Flexibility and Regional Sensitivity:** NEP 2020 allows flexible language choices, as long as two are Indian. This avoids language imposition and respects regional preferences, easing concerns in states like Tamil Nadu.

Origin of the Three-Language Formula (TLF)

- The TLF was **recommended by the Kothari Commission (1964–66)** and adopted in the **1968 National Policy on Education** under PM Indira Gandhi.
- **In Hindi-speaking states:** Students were to learn **Hindi, English**, and a modern Indian language (preferably from the **South**).
- **In non-Hindi-speaking states:** Students were to learn **regional language, Hindi, and English**.

Challenges and Concerns

- **Shortage of Qualified Language Teachers:** Many schools, especially in rural areas, lack trained teachers for regional and foreign languages. A TISS survey finds 41% English, maths, science teachers in schools across the nation are not qualified.
- **Political Sensitivity and Regional Opposition:** Language is a politically charged issue. States like Tamil Nadu and West Bengal oppose the perceived imposition of Hindi, fearing a threat to their identity.
- **Uneven and Difficult Implementation:** Adoption of the policy varies. Less than 60% of schools in many states have implemented it effectively. States with diverse languages, like Nagaland and Arunachal Pradesh face major execution hurdles.
- **Burden on an Already Strained Primary System:** Many students still struggle with basic literacy. Adding a third language could overwhelm children, especially those from monolingual homes.
- **Infrastructure and Resource Gaps:** Schools often lack the teaching materials, textbooks, and digital tools to support three languages, especially in tribal and remote areas.
- **Socioeconomic and Urban-Rural Divide:** Urban schools are better equipped, while rural and marginalized communities lack the support and infrastructure to implement multilingual education.
- **Language Should Be a Choice, Not a Mandate:** Adults can learn languages based on career needs. Imposing multiple languages in school may not align with every student's goals or context.

Addressing these issues requires targeted investments in teacher training, flexible policy adaptation, improved data collection, and greater cooperation between the Centre and states

Health and Nutrition

Addressing Hunger and Malnutrition in India

Context: India ranks 105th out of 127 countries, with a score of 27.3, (in 'serious' category), in the recently published Global Hunger Index 2024 by Welthungerhilfe and Concern Worldwide.

Hunger - Hunger is a condition in which a person does not get enough food to meet their basic energy and nutritional needs. - It often results from extreme poverty, lack of access to food, or crisis situations like war or natural disasters.	Malnutrition - Malnutrition refers to an unhealthy condition caused by eating too little, too much, or the wrong kinds of food. - It includes both undernutrition (not getting enough nutrients) and over-nutrition (eating too much unhealthy food).
Causes of Hunger and Malnutrition - Poverty - Lack of Access to Food - Climate Change and Natural Disasters - Poor Agriculture and Infrastructure - Conflict and War - Gender Inequality - Lack of Education and Awareness	Effects of Hunger and Malnutrition - Nearly half of child deaths under 5 are due to undernutrition - Nutrients like iron and B12 are vital for brain development - Iron deficiency costs Southeast Asia ~US\$5 billion in lost productivity - WHO: Ending malnutrition could prevent 53% of young child deaths - Global cost: up to US\$3.5 trillion annually

- Global Hunger Statistics:** The global GHI score is 18.3, showing a slight improvement from 18.8 in 2016. However, 2.8 billion people worldwide are still unable to afford a healthy diet.
- Regional Disparities in Hunger:** Sub-Saharan Africa has the highest rates of malnutrition and child mortality. Ongoing conflicts in Somalia and Sudan have worsened the hunger crisis in the region. In South Asia, countries like Afghanistan, India, and Pakistan continue to face significant hunger-related challenges.

Key Concerns according to Global Hunger Index (GHI) 2024

- Sustainable Development Goal 2 (Zero Hunger by 2030) remains difficult to achieve.
- The 2024 GHI highlights that 42 countries are experiencing alarming or serious hunger levels, indicating a stagnation in progress despite previous improvements.
- Gender inequality remains a critical issue. Women and girls are more vulnerable to food insecurity due to discriminatory social norms, limited access to resources, and gender-based violence.

Positive Examples

Countries like Mozambique and Nepal have shown notable improvements in their GHI scores since 2016, providing hope and valuable lessons for others.

Underlying Causes of Hunger

- Debt burdens in lower-income countries often force governments to divert resources from essential development goals, including food security.

India-Specific Findings in the Global Hunger Index (GHI) 2024

- Alarming Child Malnutrition Rates:** Approximately **35.5%** of children under the age of five are **stunted**, indicating chronic undernutrition, while **18.7%** are **wasted**, reflecting acute malnutrition. Additionally, around **13.7%** of the overall population is undernourished.
- Child Mortality Rates:** 2.9% of children dying before their fifth birthday.
- Minimal Improvement Over the Decade:** Moving from 29.3 in 2016 to 27.3 in 2024.

Major Government Initiatives

- National Food Security Act (NFSA):** Provides subsidised food grains to approximately 80 crore people.
- PM POSHAN Scheme (Mid-Day Meal Scheme):** Provides a minimum of 450 calories and 12 grams of protein for primary school children and 700 calories and 20 grams of protein for upper primary school children per day.

The GHI 2024 calls for coordinated global efforts to address interconnected challenges like climate change, conflict, gender inequality, and economic instability. It emphasizes the need to support vulnerable populations, especially women, in the global fight against hunger.

NITI Aayog Report on Future Pandemic Preparedness

Context: NITI Aayog has released an Expert Group report titled '*Future Pandemic Preparedness and Emergency Response - A Framework for Action*'.

Key Features of the NITI Aayog Framework

The framework aims to strengthen existing health systems and fill in the missing parts needed to respond quickly and effectively.

- **100-Day Action Plan:** This plan includes: Tracking and identifying the outbreak, Testing and treating affected individuals, Managing the situation through a strong, structured response system.
- **Creation of a Pandemic Preparedness Fund:** To make sure that money is available in advance for emergency response, not just after a crisis begins.
- **Regulatory Reforms:** India's regulatory body, CDSCO, should be given more powers and independence to approve emergency treatments faster.
- **High-risk Innovation Fund:** Inspired by the success of Mission COVID Suraksha, which led to the development of India's own vaccines, including the world's first DNA vaccine and nasal vaccine.

A pandemic is an outbreak of a disease that spreads across countries or continents, affecting a large number of people.

The Covid-19 Pandemic Caused:

- **Total Deaths:** Over 7 million deaths officially recorded (source: WHO)
- **GDP Loss:** Global GDP loss Estimated to be around \$12.5 trillion in cumulative output loss (IMF estimate for 2020–2024). India's GDP contracted by 7.3% in 2020–21
- **Job Losses:** In 2020 alone, an estimated 255 million full-time jobs were lost globally (ILO report)

Four Pillars of the Framework

- **Governance, Legislation, Finance, and Management**
 - Strong laws and leadership to guide pandemic response
 - A new law called the Public Health Emergency Management Act (PHEMA) is proposed to manage various health emergencies like pandemics, disasters, and bioterrorism
 - Establishment of expert groups to manage and monitor the situation
- **Data and Surveillance**
 - Early warning systems using real-time data
 - Strong disease tracking through national platforms like Integrated Health Information Platform (IHIP) and Integrated Disease Surveillance Programme (IDSP)
 - Linking clinical, lab, and genomic data to understand and control the disease spread
- **Research, Innovation, and Infrastructure**
 - Investment in vaccine research and new medical technologies
 - Special focus on developing vaccines quickly using modern platforms
 - New institutes and Centres of Excellence to research priority diseases
 - Strengthening the regulatory system for fast approval of vaccines and medicines
- **Partnerships and Community Engagement**
 - Involving private companies, international organizations, and local communities
 - Clear communication strategies to keep the public informed and involved
 - Strong coordination between central and state governments

By focusing on early warning systems, rapid response, and community engagement, this framework envisions a resilient public health system capable of not just reacting to emergencies, but also preventing them.

India's Narco Problem

Context: Finance Minister Sitharaman described narcotics as the most serious threat to India, warning that the drug menace is penetrating every state and even smaller towns.

About the India's Narco Problem

- Narcotics refer to drugs like **heroin, opium**, and synthetic substances that cause addiction and harmful effects on health and society.
- India has seen a seven-fold increase in drug seizures over the last decade, with narcotics worth ₹16,914 crore seized in 2024 alone-the highest since Independence.
- 3.1 crore Indians (2.8%) use cannabis; 72 lakh (0.66%) face cannabis-related problems. An estimated 8.5 lakh people inject drugs.
- 1.7% of children and 0.58% of adults use inhalants; 18 lakh children need intervention.

Key Dimensions of India's Narco Problem

- **Geographic Vulnerability:** India's position between the **Golden Crescent** (Afghanistan, Iran, Pakistan) and the **Golden Triangle** (Myanmar, Laos, Thailand) makes it a key transit and destination country for drugs like heroin and methamphetamines. Porous borders with Pakistan and Myanmar, especially via Punjab, Jammu & Kashmir, and Northeastern states (Manipur, Mizoram, Nagaland), are frequently exploited for trafficking.
- **Narco-Terrorism and Organized Crime:** Drug trafficking profits are used to finance terrorism and insurgency, particularly in Kashmir and the Northeast. There is a strong nexus between criminal networks and terror groups. The Dawood Ibrahim syndicate, for instance, used drug routes to transport weapons during ~~events like the 1993 Mumbai blasts and Pathankot attack.~~
- **Technological and Operational Challenges:** Traffickers increasingly use drones, cryptocurrency, and the dark web to smuggle and sell drugs, making enforcement difficult. Illegal online drug markets and e-pharmacies allow anonymous access to narcotics, limiting the ability of law enforcement to track offenders.
- **Societal and Economic Impact:** Drug addiction, especially among the youth, is leading to a rise in crime, health issues, and social instability in states like Punjab and Himachal Pradesh. Drug money fuels corruption, undermining police and border forces, and weakening efforts to combat trafficking. According to a report 13.1% of the people involved in drug and substance abuse in India, are below 20 years.

Legal and Institutional Framework

- **Constitutional Basis:** Based on Article 47, which directs the state to prohibit the use of intoxicating drugs except for medicinal purposes.
- **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985:** Prohibits the production, sale, transport, and consumption of narcotic and psychotropic substances, except for medical or scientific use.
- **Prevention of Illicit Trafficking in NDPS Act, 1988:** Empowers authorities to prevent drug trafficking through stringent actions, including preventive detention.
- **Drugs and Cosmetics Act, 1940:** Regulates the manufacture and sale of drugs and cosmetics, including medicinal narcotics.
- **International Commitments:** India is a signatory to major UN conventions including—
 - Single Convention on Narcotic Drugs (1961, as amended by the 1972 Protocol)
 - Convention on Psychotropic Substances (1971)
 - United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988).
- **Narcotics Control Bureau (NCB):** Established in 1986, the NCB is the central agency for enforcing drug laws and gathering intelligence under the NDPS Act.

Challenges in Addressing India's Narco Problem

- **Geographic Vulnerability:** Political instability in neighboring regions, particularly Myanmar, has led to increased production and trafficking. In 2023, Myanmar became the top opium producer with 116,000 acres under cultivation, raising trafficking risks in Northeast India, where drugs worth \$267 million were seized in 2022–23.

- **Legislative Gaps:** The NDPS Act lacks clear distinction between users, peddlers, and traffickers, leading to disproportionate punishments. It also struggles to address new synthetic drugs that emerge faster than they can be regulated.
- **Poor Coordination Between Agencies:** Enforcement agencies, including the NCB (under MHA) and Central Bureau Of Narcotics (under Finance Ministry), have historically operated in silos. This lack of unity slows down action against drug crimes.
- **Inadequate Human Resource:** Over 1.11 lakh NDPS cases were registered in 2022. Treating it as an internal security threat, MHA proposed 3,000 new posts in NCB for wider reach.
- **Rise of Synthetic Drugs:** Drugs like methamphetamine and fentanyl are made in small labs using common chemicals, often hidden in legitimate shipments, making detection harder.
- **New Trafficking Tactics:** Traffickers use the darknet, cryptocurrencies, and blockchain for anonymous deals, complicating law enforcement and financial surveillance.
- **Operational and Capacity Constraints:** Use of drones, mobile labs, and small shipments makes tracking difficult. There is a need for better training, chemical monitoring, and AI-based surveillance tools.
- **Societal and Public Health Impact:** Cheap and potent synthetic drugs fuel mass addiction, especially among youth, leading to mental health issues, crime, and dropouts. Rehabilitation facilities and awareness efforts remain insufficient.

Recent Government Efforts to Tackle India's Narco Problem

- **Nasha Mukh Bharat Abhiyaan (NMBA):** Launched in 2020, NMBA now covers all districts, focusing on awareness among youth and women and offering counseling and de-addiction services. It has reached over 14 crore people, including 5 crore youth.
- **4-Tier Narco-Coordination Centre (NCORD):** NCORD ensures central–state coordination on drug enforcement through a 4-tier structure. A dedicated NCORD portal enables real-time data sharing & collaboration among agencies.
- **NALSA (DAWN) Scheme, 2025:** Provides legal aid, awareness, and support for drug abuse victims at the district level, aiming for a drug-free India.

India needs an integrated approach that combines security, health, education, and awareness to tackle its narco problem. Community participation, especially through village committees and youth groups, can play a key role in prevention. Strengthening international cooperation for intelligence sharing and coordination is also crucial. At the ground level, expanding and improving de-addiction and rehabilitation services is essential.

National Health Mission

Context: The Union Cabinet approved the extension of the National Health Mission (NHM) for another five years after reviewing its progress over the past three years.

National Health Mission (NHM)

- Launched in 2013, the NHM merged the National Rural Health Mission (2005) and National Urban Health Mission (2013) to strengthen public health systems across India.
- The Ministry of Health and Family Welfare supports states/UTs with funding and technical help to deliver affordable and effective healthcare up to district-level hospitals.

Key Components:

- Reproductive-Maternal- Neonatal-Child and Adolescent Health (RMNCH+A)
- Health Systems Strengthening
- Control of Non-Communicable Diseases.
- Control of Communicable Diseases.

Challenges in India's Healthcare

- **Low Health Investment:** India spends far below global average on healthcare. Though expenditure rose from 1.6% of GDP in FY21 to 1.9% in FY24, it remains well below the 10–18% range seen in developed countries.

- **Inter-State Disparities:** States like Kerala and Delhi spend far more per capita on health (Kerala: ₹9,871 vs Bihar: ₹2,358), creating unequal access across regions.
- **Inadequate Infrastructure:** India has only 0.6 beds per 1,000 people-far below the National Health Policy's 2-bed target.
- **Unequal Health Access:** Rural and tribal areas suffer from a shortage of facilities. While urban India has 5,439 Primary Health Centres (PHCs), tribal regions have just 3,966 (MoHFW, 2021), affecting basic care in remote zones.
- **Health Workforce Shortage:** India had just 22.8 healthcare workers per 10,000 in 2006, improving only slightly to 44.5 by 2018 (WHO). The doctor-population ratio (1:830 including Ayush doctors) meets WHO norms, but public trust in Ayush remains low, burdening allopathic doctors.
- **Poor Quality of Care:** Misdiagnosis and poorly trained staff are common. A 2022 National Library of Medicine study reported up to 5.2 million medical malpractice cases annually-pointing to weak regulation and training gaps.
- **Barriers to Access:** Social and financial inequalities hinder care, especially for the elderly, disabled, and mentally ill. HelpAge India (2024) reported only 29% of elderly receive social security benefits like pensions.
- **Private Sector Dominance:** Private hospitals hold 70% market share and 63% of beds (FY 2020), often charging higher fees, which limits access for low-income groups.
- **Out-of-Pocket Expenditure (OOPE):** Though OOPE dropped from 60% in 2013–14 to 48.2% in 2018–19, it still causes financial distress. WHO estimates 55 million Indians are pushed into poverty yearly due to healthcare expenses.

Way Forward

- Increase Healthcare Funding to at least 2.5% of GDP to boost infrastructure, services, and workforce training.
- Promote Public-Private Partnerships to expand access and improve service quality.
- Ensure Inclusive Policies that prioritize vulnerable groups and equitable access across regions.
- Upgrade Rural Facilities to bridge gaps in healthcare delivery.
- Strengthen Workforce Training to meet rising healthcare demands.
- Establish Monitoring Mechanisms for accountability and program improvement.

Recognizing Right to Health as fundamental requires greater investment, better infrastructure, and cross-sector collaboration to ensure quality healthcare for all and drive socio-economic growth.

India's Obesity Challenge

Context: PM Modi highlighted rising obesity, urged 10% monthly oil cut, and nominated celebrities to raise awareness, especially among children.

What is Obesity?

- Obesity is measured using Body Mass Index (BMI), which is calculated by dividing weight by height squared. BMI greater than 30 related to Obese while BMI ranging between 25–30 related to Overweight.

NHM: Progress and Key Achievements (2021–2024)

Maternal & Child Health

- Maternal Mortality Ratio dropped by 25% (from 130 in 2014–16 to 97 in 2018–20).
- Infant Mortality Rate declined from 39 (2014) to 28 (2020).
- India is on track to achieve its SDG goals on maternal and child health before 2030.

Healthcare Workforce Expansion

- Over 1.2 million healthcare workers recruited, including doctors, nurses, ANMs, Ayush practitioners, and public health managers.

COVID-19 Vaccination

- NHM facilitated the delivery of 2.2 billion vaccine doses (Jan 2021 – Mar 2024).

Disease Control

- Under the National Tuberculosis Elimination Programme, TB incidence dropped from 237 (2015) to 195 (2023).
- TB mortality fell from 28 to 22 per 100,000 during the same period.

- For children (ages 5–17), obesity is assessed using age- and gender-specific standards by the International Obesity Task Force.

Current Trends in India

1. Rising Adult Obesity:

- **Women:** Increased from 20.6% (2015–16) to 24% (2019–21)
- **Men:** Rose from 18.9% to 22.9% in the same period (NFHS data)
- Urban obesity is significantly higher than rural.
- A 2023 Lancet study shows **40% of women and 12% of men in India suffer from abdominal obesity**, measured by waist size.

2. Childhood Obesity:

- **NFHS data:** Overweight children under 5 rose from 2.1% to 3.4% (2015–2021).
- **World Obesity Atlas (2022):** By 2030, 10.8% of children aged 5–9 and 6.23% aged 10–19 may be obese.

3. Health Risks Associated with Obesity:

- **Type 2 Diabetes:** According to the World Health Organization, obesity accounts for 44% of diabetes cases globally. The risk of developing type 2 diabetes is 4.6 times higher for women and 3.5 times higher for men with obesity.
- **Cardiovascular Disease:** Every two years lived with obesity increases the risk of cardiovascular mortality by 7%. A 10 kg increase in body weight raises the risk of coronary artery disease by 12%
- **Cancer:** A cohort study of 2.6 million adults found that overweight and obesity during early adulthood could be linked to up to 18 different types of cancer
- **Osteoarthritis:** Being just 10 pounds overweight puts an extra 15 to 50 pounds of pressure on the knees, increasing the likelihood of developing osteoarthritis (OA) or worsening existing OA
- **Liver Disease:** Overweight individuals are 3.55 times, and obese individuals are 7.59 times, more likely to develop fatty liver disease compared to those of normal weight

Causes of Rising Obesity in India

- **Dietary Changes and Ultra-Processed Foods:** There has been an increase in the consumption of ultra-processed foods and sugary beverages. Between 2009 and 2019, India was among the top three countries globally with the highest annual growth in per capita sales of ultra-processed foods and beverages.
- **Sedentary Lifestyles:** Urbanization and technological advancements have led to more sedentary jobs and leisure activities, reducing overall physical activity. A recent Lancet study puts an alarming 70% of India's urban population obese or overweight.
- **Nutritional Gaps and Economic Challenges:** Low-income families, especially those using the Public Distribution System (PDS), consume more rice and wheat due to affordability. Healthier options like fruits, vegetables, pulses, dairy, and meat are costly and less accessible. A staggering 18% of India's fruit and vegetable production is wasted due to poor infrastructure, representing a lost opportunity to combat nutritional deficiencies.
- **Environmental Concerns:** Air pollution can cause inflammation and metabolic problems, contributing to obesity. Unsafe, polluted, and unwelcoming urban spaces discourage outdoor movement and exercise.
- **Stress and Sleep Deprivation:** Rising stress levels and poor sleep hygiene cause hormonal imbalances, such as elevated cortisol, which promote weight gain. A recent survey indicates that 61% of Indians get less than six hours of uninterrupted sleep per night.

Government of India's Key Initiatives to Prevent and Manage Obesity

- **NP-NCD Programme:** Promotes early detection, treatment, and awareness of non-communicable diseases through nationwide health centers, community outreach, and lifestyle interventions
- **POSHAN Abhiyaan:** Improves maternal and child nutrition through multi-sectoral coordination, tech-based monitoring, Nutri-Gardens, fortified foods

- **Fit India Movement:** Encourages daily fitness through school certification, cycling drives, yoga sessions, and workplace challenges.
- **Khelo India Programme:** Boosts sports culture from grassroots to elite levels by providing training, infrastructure, and inclusive opportunities, helping youth adopt physically active habits
- **FSSAI's Eat Right India Movement:** Promotes healthy eating through hygiene certification, school programs, food adulteration tests, fortified staples, and street food regulation
- **'Aaj Se Thoda Kam' Campaign:** Encourages the public to reduce intake of salt, sugar, and fat through multilingual media content, promoting small, sustainable dietary changes for healthier living.
- **RUCO Initiative (Repurpose Used Cooking Oil):** Collects used cooking oil from eateries to convert into biodiesel, preventing health risks from reused oils and supporting clean energy and food safety goals.

To effectively combat rising obesity, India must implement clear front-of-pack warning labels like "High in Sugar/Salt/Fat". Advertising laws must be strengthened to restrict junk food promotions, with harmonized regulations across sectors. A nationwide, multilingual awareness campaign should educate the public on the health risks of unhealthy diets.

Swachh Bharat Mission

Context: The Swachh Bharat Mission (SBM), launched by Prime Minister Modi in 2014, marks its 10th anniversary on October 2, 2024.

About Swachh Bharat Mission	
Launch Year	2014
Objective	To make India Open Defecation Free (ODF) by 2 October 2019 , commemorating the 150th birth anniversary of Mahatma Gandhi
Phase II (2020–2025)	Focuses on sustaining ODF status and achieving "Sampoorn Swachhata" (total cleanliness) through comprehensive solid and liquid waste management in both rural and urban areas
Alignment with SDGs	Supports SDG 6.2 - Ensuring access to adequate and equitable sanitation for all, especially women and girls
Components	1. SBM-Gramin – Dept of Drinking Water and Sanitation (MoJalShakti) 2. SBM-Urban – Ministry of Housing and Urban Affairs
Key Focus Areas	• Construction of individual household toilets • Community and public toilets • Awareness and behaviour change campaigns • Solid waste management (collection, segregation, disposal)
Components	• Open defecation free (ODF): Focus on eliminating open defecation. • Toilet construction: Building household, community, and public toilets. • Solid and liquid waste management: Managing both organic/inorganic waste and wastewater. • Behavioral change campaigns: Educating citizens on the importance of cleanliness and sanitation. • ODF+ and ODF++: Focus on sustaining ODF status with proper liquid waste management (ODF+) and sludge management

Swachh Bharat Mission: Achievements

- **Toilet Construction & ODF Declarations:**
 - Over 10 crore toilets were constructed under SBM. As of October 2, 2019, over 6 lakh villages were declared Open Defecation Free (ODF).
 - By December 2019, urban India (except some cities in West Bengal) was also declared ODF by the Ministry of Housing and Urban Affairs.

- Over 66 lakh individual household toilets were constructed in urban areas, surpassing the target of 59 lakh.
- **ODF+ Progress (Post-2019):** Over 5.54 lakh villages (SBM-G 2.0) and 3,913 cities (SBM-U 2.0) have been declared ODF+, which includes liquid waste management systems.
- **Landfill Remediation:** SBM-U 2.0 aims to clear all 2,400 legacy landfills in urban areas by 2025–2026. So far, 30% of targeted landfill area has been cleared and 41% of total waste has been remediated.
- **Waste Management Coverage:** As per the SBM-U dashboard, 97% of municipal wards have door-to-door waste collection, and 90% ensure 100% waste segregation at source.

Impact of SBM

- **Deaths Averted:** WHO estimated SBM-Gramin helped avert around 3 lakh deaths from diarrhoea and protein-energy malnutrition between 2014 and 2019.
- **Diarrhoea Reduction:** SBM contributed to reducing the estimated 199 million annual diarrhoea cases caused by unsafe sanitation prior to its launch.
- **Infant Mortality Reduction:** A study in Nature found that SBM may have led to 60,000–70,000 fewer infant deaths per year between 2014 and 2020.
- **Accelerated Impact after 2015:** The decline in infant mortality, which began in 2003, showed sharper improvement after 2015, coinciding with SBM initiatives.

Criticisms of SBM

- **Low Construction Quality:** Many toilets, especially under SBM-Gramin, were built using low-quality materials and lack basic features, affecting usability and durability.
- **Behavioural Resistance:** In many villages, toilets are misused, sometimes used as cow dung storage, reflecting limited behavioural change despite infrastructure availability.
- **Persistent Open Defecation:** Despite ODF declarations, 11% of the population still practices open defecation, especially in rural areas.
- **Rural-Urban Sanitation Gap:** In India, 38% of urban households have access to safely managed sanitation facilities compared to a mere 6% of rural households.
- **Landfill Clearance Issues:** Only 30% of landfill area and 41% of waste remediation has been completed, far short of SBM-U targets.
- **Lack of Updated Census Data:** Delays in Census 2021 have hindered accurate measurement of SBM's actual impact on sanitation coverage.
- **Funding Cuts and Underutilisation:** Budget allocation for SBM has dropped from ₹16,000 crore in 2017–18 to ₹7,000 crore in 2024–25, with reduced spending on awareness (IEC) activities.

Addressing these issues through sustained behavioural interventions, ensuring water availability, maintaining data accuracy, and enhancing financial accountability will be key to making sanitation gains sustainable and inclusive. SBM's future lies not just in building toilets but in building a lasting culture of cleanliness and dignity for all.

Poverty and Development

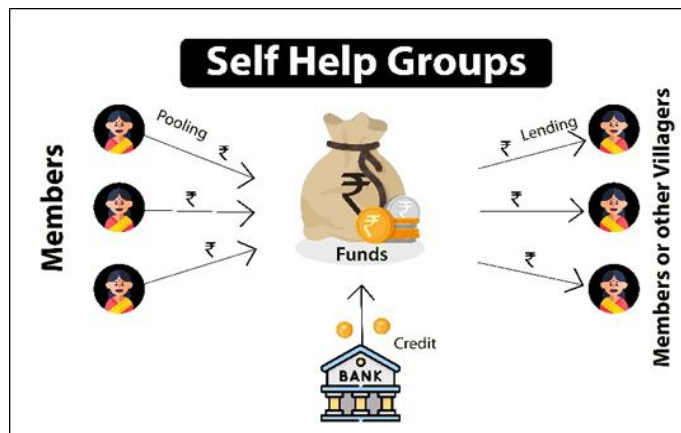
Self Help Groups

Context: The Union Government has approved the Central Sector Scheme 'Namo Drone Didi' for providing drones to Women SHGs under DAY-NRLM, with an outlay of Rs 1261 Crores.

About Self Help Groups (SHGs)

- A Self-Help Group (SHG) is a financial intermediary committee, typically consisting of 10-20 local women.
- Members make small, regular savings contributions over a few months until the group has enough capital for lending. These funds can be lent back to members or other villagers. SHGs are then connected to banks to facilitate the delivery of microcredit.

- The focus is on capacity building, promoting local enterprises, improving infrastructure, adopting technology, and enhancing access to credit and markets.
- There are approximately 12 million SHGs in India (of which 88% are all-women), with 92.1 million members.
- Introduced in 1984, inspired by Prof. Yunus's Grameen Bank model, SHGs gained momentum with NABARD's support and RBI's recognition in 1990.
- Andhra Pradesh and Telangana lead SHG efforts, followed by Tamil Nadu, Kerala, and others.



Role of SHGs in Women Empowerment

- **Economic Independence:** SHGs offer women access to microcredit, helping them start businesses or invest in agriculture. This boosts financial independence and improves household income. Studies show a 10% increase in regular savings among SHG members.
- **Social Empowerment:** SHGs foster solidarity, leadership, and confidence among women. During Covid-19 pandemic, SHGs in Bihar had benefited 45.5 lakh households through its various activities, such as production of 2.14-crore masks.
- **Education and Awareness:** SHGs run literacy and health workshops, promoting education, hygiene, and family well-being. For example, in rural Wardha, India, SHG women had about eight times higher odds of possessing better health literacy.
- **Political Empowerment:** Women involved in SHGs are more likely to participate in local governance, including running for local office or participating in community decision-making bodies. For example, many women SHG members in Bihar are village sarpanch also.

Government Initiatives

- **Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY-NRLM):** This flagship program aims to organize and empower rural poor women into SHGs and provide them with financial and social support. It offers various sub-schemes like:
 - **Mahila Kisan Sashaktikaran Pariyojana (MKSP):** Focuses on empowering women in agriculture.
 - **Start-up Village Entrepreneurship Programme (SVEP):** Assists SHG members in establishing non-farm enterprises at the village level.
 - **Rural Self Employment Training Institutes (RSETI):** Offer vocational training programs to SHG members.
 - **Lakshpati Didi Initiative:** This initiative aims to empower women in SHGs to earn at least Rs 1 lakh per year through sustainable livelihood practices. The initial target of 2 crore women has been increased to 3 crores in 2024-25.

Case Study: Transformation of Talluru Village through Microfinance Initiatives

- In 1995, Talluru village (East Godavari district) began with 3 microfinance SHGs, growing to 24 active groups. Through low-interest government grants under DWACRA, women repaid debts, educated children, and started businesses.
- **Key outcomes:**
 - Led a 6-month anti-liquor campaign.
 - Leased land for farming and adopted homestead dairying.
 - Formed a milk cooperative, boosting incomes.
- Today, Talluru boasts better infrastructure, higher incomes, home ownership, and widespread education—showcasing SHGs' role in holistic rural development.

Challenges Faced by SHGs

- **Delayed Credit Linkage:** Many SHGs face long delays in accessing bank credit. In several states, fewer than 50% of SHGs are bank-linked. Due to delays, SHGs often turn to costlier alternatives like NGO-MFIs.
- **Overdependence on Bank Loans:** SHGs rely heavily on external loans, underusing their own savings. Around 31% of SHGs do not use internal lending, despite having savings. Savings are often treated as collateral instead of capital, raising the risk of over-borrowing.
- **Weak Bookkeeping and Accountability:** Many SHGs keep records only with group leaders, limiting transparency. Most SHGs do not pay their bookkeepers, affecting record quality. Poor documentation can harm credibility with banks.
- **Leadership Gaps:** 59% of SHGs have not changed leaders since formation. Lack of leadership rotation can lead to stagnation and weak accountability.
- **Member Dropouts:** 56% of the groups in the NABARD Study reported incidences of dropouts. High dropout rates can dilute the group's social capital and weaken the financial base.
- **Access to Technology:** Limited access to modern technologies, including digital platforms, e-commerce solutions, impede SHGs' ability to scale efficiently and reach broader markets. According to a survey, only 23% of women members of SHGs reported that they own and use their own phone.
- **Limited Market Access:** Due to factors such as lack of market information, limited distribution channels, and competition from established businesses. A 2019 survey in Odisha found that 75% of the SHGs women surveyed had problems related to marketing.
- **Caste dominance:** Many SHGs are formed along caste lines. In upper-caste groups, members from backward or minority communities often face discrimination, leading to exclusion and dropouts. This weakens group unity and effectiveness.
- **Quality Control and Standardisation:** Maintaining consistent quality and standardization of products or services is difficult, especially when SHGs operate on a small scale with limited resources and technical expertise.

The **2nd ARC** suggests that the **government should facilitate and promote the growth of SHGs, fostering a supportive environment for their development**. SHGs have been instrumental in empowering rural women, providing them with independence and resilience, and contributing to gender equality and self-reliance. Efforts to strengthen the SHG movement by enhancing capabilities and fostering inclusive development should be undertaken at earliest.

Begging in India

Context: Bhopal has banned begging and almsgiving in public places. FIRs can now be filed against both beggars and donors.

About Begging

- Begging, or panhandling, is the act of asking for alms or help without expecting anything in return.
- Traditionally, begging was seen as noble—"bhiksha" in Hinduism, Jainism, Buddhism, and "zakat" in Islam reflect this. But today, it is viewed as a socio-economic issue with growing challenges.
- Census 2011 recorded 4.13 lakh beggars and vagrants across India.

Related Constitutional and Legal Framework

- The 9th entry of the **State List (Seventh Schedule)** makes "relief of the disabled and unemployable" a state subject, placing the responsibility on state governments.
- **Article 23 (Fundamental Right)** prohibits human trafficking and forced labour.
- **Article 41 (Directive Principles)** urges the state to ensure welfare for the poor, including the right to work and public assistance.
- **Bombay Prevention of Begging Act, 1959:** Criminalizes begging in several states, allowing authorities to detain beggars and place them in institutions. Rooted in colonial vagrancy laws, it defines "begging" broadly-covering street performances, selling goods, or even simply appearing poor.

- **State-Level 'Beggar-Free' Drives:** Despite the 2018 HC ruling, states like Maharashtra continue to criminalize begging and pursue “beggar-free city” campaigns. In 2020, the Centre proposed a rehabilitation programme in 10 cities, including Mumbai, but the Beggary Act remains active.
- **Mental Healthcare Act, 2017:** Provides care for mentally ill persons who are homeless or found begging, aiming at medical treatment over criminal punishment.

Key Causes of Begging in India

1. Economic Factors

- **Poverty:** Around 75.24 million people in India live in extreme poverty, lacking basic necessities for survival.
- **Unemployment:** An estimated 52% of individuals resort to begging due to job loss or lack of employment opportunities, according to a Delhi study.
- **Lack of Livelihood Options:** Informal workers, daily wage laborers, and those with low education levels often struggle to find sustainable work.

2. Social Causes

- **Caste-Based Roles and Hereditary Occupations:** Traditional roles often limit access to modern employment, trapping families in generational poverty.
- **Widowhood and Family Breakdown:** Women, children, and the elderly without family support are especially vulnerable. Notably, 25% of the elderly own no assets, and nearly half are financially dependent on others.
- **Rural-Urban Migration Without Support:** People migrating in search of work often lack housing, jobs, and social networks, making them highly vulnerable.

3. Health and Physical Challenges

- **Disability:** Around 17.05% of beggars in India are disabled. Physical impairments limit work opportunities, especially where inclusive employment systems are absent.
- **Mental Illness:** Those suffering from untreated mental health conditions are often abandoned or excluded from formal support systems.
- **Chronic Illness and Lack of Healthcare:** Ongoing health issues combined with poor access to medical care push many into destitution.

4. Natural Disasters and Displacement

- **Floods, Droughts, and Earthquakes:** Natural disasters destroy homes, farms, and livelihoods, leaving families homeless and jobless.
- **Displacement:** Many people forced to relocate due to disasters or development projects end up in urban slums or on the streets, with no income sources.

Arguments in Favour of an Anti-Beggary Law	Arguments Against an Anti-Beggary Law
• Tackling Exploitation by Gangs: Many beggars, especially children, are victims of trafficking and forced begging. A law can help rescue victims and punish traffickers. • Maintaining Public Safety and Cleanliness: Begging in busy areas like traffic signals and railway stations can cause accidents and public inconvenience. Regulation can improve hygiene and urban order. • Focus on Rehabilitation, Not Just Charity: Laws can promote skill training, shelter homes, and employment opportunities. For example, the Bombay Act aimed to provide vocational training in beggar homes.	• Punishing Poverty Instead of Solving It: People beg out of desperation, not choice. The focus should be on jobs, housing, and healthcare, not punishment. • Violation of Fundamental Rights: The Delhi High Court (2018) said criminalizing begging violates the right to live with dignity under Article 21. Forced detention curbs personal freedom. • Ineffectiveness of Previous Laws: The Bombay Act led to mass arrests but didn't reduce begging. Detention centers were overcrowded and poorly maintained.

• Uniform Legal Framework: A central law can ensure clear, consistent policies across all states. • Preventing Misuse of Public Sympathy: Some people fake disability or distress to collect money. A law can help differentiate between genuine and false cases.	• Targeting the Poor Unfairly: These laws often affect homeless people, slum dwellers, and street vendors, worsening their poverty. • Neglect of Social Welfare: Begging reflects deeper issues like unemployment and lack of education. The state should invest in welfare schemes rather than punishing the poor.
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A balanced approach is necessary: one that upholds human dignity and constitutional rights while offering rehabilitation, skill development, and social security. Instead of hiding poverty through punitive action, India must focus on inclusive welfare policies that eliminate the need to beg in the first place.

World Happiness Report

Context: World Happiness Report 2025 was released by Oxford in collaboration with Gallup and the UN Sustainable Development Solutions Network on World Happiness Day (March 20).

Key Highlights

- **Top Countries:** Finland remains the happiest nation for the 8th year, followed by Denmark, Iceland, and Sweden.
- **India's Rank:** 118th in 2025, improving from 126th in 2024.
- **South Asia Rankings:** Nepal (92), Pakistan (109), Myanmar (126), Sri Lanka (133), Bangladesh (134).
- **Bottom Five:** Afghanistan (147, lowest for 4 years), Sierra Leone (146), Lebanon (145), Malawi (144), Zimbabwe (143).

Key Reasons Behind India's Consistent Low Happiness Ranking

- **Economic Stress and Inequality:** The top 10% of the Indian population holds 77% of the total national wealth, while many earn low wages despite long work hours. This creates widespread stress, burnout, and insecurity.
- **High Youth Unemployment:** A 2023 study by the CMIE reported a 45.4% youth unemployment rate (those aged 15–24). This "shockingly high" figure reflects a loss of potential and contributes to frustration and disillusionment.
- **Environmental and Health Concerns:** India was the fifth most polluted country globally in 2024. Severe air and water pollution lead to health issues like respiratory diseases, lowering overall quality of life. Environmental degradation directly affects daily well-being.
- **Corruption and Low Institutional Trust:** In the 2024 Corruption Perceptions Index, India is ranked 96th out of 180 countries, according to Transparency International. High levels of perceived corruption erode public trust in institutions, contributing to cynicism and helplessness.
- **Mental Health Stigma and Poor Access:** NIMHANS found that 10.6% of adults in India suffer from mental disorders. 70% to 92% of people with mental disorders do not receive proper treatment due to lack of awareness, stigma, and shortage of professionals.
- **Urban Housing Crisis:** 49% of urban Indians live in slums. Affordable and quality housing is scarce in cities, adding to stress and dissatisfaction, especially among low-income groups.
- **Social Inequality and Discrimination:** Deep-rooted caste, gender, and social discrimination continue to marginalize large sections of society, affecting mental health and happiness.

Methodological Concerns

- **Discrepancy in Rankings:** Countries like Pakistan, Sri Lanka, Afghanistan, and Myanmar rank above India despite facing deeper crises. This raises doubts about the report's accuracy.
- **Cultural Blind Spots:** The survey overlooks key aspects of Indian society—strong family ties, spirituality, festivals, low divorce rates, and close parent–child bonds—that shape happiness in a collectivist culture.

Key Government Initiatives

1. Social Welfare & Poverty Alleviation

- **PM Awas Yojana (PMAY):** Affordable housing for the poor.
- **Ayushman Bharat:** Free health insurance for 100+ million families.
- **National Social Assistance Programme:** Pensions for elderly, widows, and disabled.

2. Employment Generation

- **MGNREGS:** 100 days of guaranteed rural employment.
- **Skill India Mission:** Vocational training to boost youth employability.

3. Mental Health & Well-being

- **Mental Healthcare Act (2017):** Legal right to mental healthcare.
- **Tele-MANAS:** Free tele-counseling for mental health support.

4. Anti-Corruption Measures

- **E-Governance & Direct Benefit Transfer:** Cuts corruption via digital transfers.
- **Vigilance and Anti-Corruption Agencies:** Stronger checks against public corruption.

5. Environment & Sustainability

- **National Clean Air Programme (NCAP):** Cuts air pollution in major cities.
- **Swachh Bharat:** Promotes cleanliness and sanitation.

6. Education & Social Inclusion

- **Samagra Shiksha:** Integrated education from pre-school to Class 12.
- **Beti Bachao, Beti Padhao:** Promotes girls' education and empowerment.

To improve its happiness ranking, India must focus on inclusive economic growth, job creation for youth, clean living environments, and stronger institutions. Enhancing mental health services, urban housing, and social equity is crucial. Investing in well-being is not just a social goal but a development imperative. A happier society leads to stronger institutions, a more productive workforce, and greater national resilience.

Corporate Social Responsibility

Context: Boosted by higher profits, CSR spending by listed companies rose 16% to ₹17,967 crore in FY 2023-24, up from ₹15,524 crore in 2022-23.

Corporate Social Responsibility (CSR) in India

- CSR is a self-regulatory approach where **businesses actively incorporate social, environmental, and ethical concerns into their operations and relationships with stakeholders.**
- The aim of CSR is to ensure that **companies contribute to the well-being of society** and the environment, moving beyond a sole focus on profit to embrace sustainable and responsible business practices.

CSR under the Companies Act, 2013

- The legal framework for CSR in India was introduced through Section 135 of the Companies Act, 2013, which came into effect on April 1, 2014.
- CSR provisions apply to companies that meet **any one** of the following criteria in the preceding financial year:
 - Net worth of more than ₹500 crore (INR 5 billion), or
 - Turnover of more than ₹1,000 crore (INR 10 billion), or
 - Net profit of more than ₹5 crore (INR 50 million).
- Eligible companies are required to spend at least **2% of the average net profits of the past three financial years** on CSR activities as specified under Schedule VII of the Act.

Significance of Corporate Social Responsibility (CSR)

- **Attracting and Retaining Talent:** Employees are more motivated and loyal when associated with socially responsible firms. Example: Working at Larsen & Toubro (L&T) is viewed with pride due to its ethical and developmental focus.

- **Gaining Investor Confidence:** Firms committed to CSR are viewed as stable and ethical, attracting long-term investment. Positive brand recognition enhances company performance in equity markets and improves investor perception.
- **Empowerment and Inclusion:** CSR initiatives are playing a transformative role in women's empowerment, skill development, and child welfare. Example: Mahindra's Nanhi Kali has supported the education of over 870,000 underprivileged girls.
- **Alignment with SDGs:** CSR programmes are increasingly aligned with India's Sustainable Development Goals (SDGs), especially those focused on poverty, education, gender equality, health, and environmental sustainability. The SBI Youth for India programme alone has impacted over 150,000 lives across 250+ villages in 20 states.
- **Enhanced Brand Reputation and Trust:** Companies that engage in CSR initiatives build a positive corporate image, leading to increased trust and credibility with customers, investors, and the public.
- **Improved Customer Loyalty:** Consumers are more likely to support businesses that demonstrate social and environmental responsibility, leading to increased customer loyalty and repeat business.

Major Issues Related to CSR in India

- **Rising Unspent Funds:** Unspent CSR funds touched ₹1,475 crore in FY23, the highest in five years, mainly due to delayed project approvals and poor planning.
- **Regional Imbalance:** CSR funds are concentrated in developed states like Maharashtra and Gujarat, while North-Eastern states receive less than 1%, worsening regional development gaps.
- **Sectoral Imbalances:** Education alone accounted for nearly one-third of total CSR expenditure in recent years. Sectors like technology incubation, disaster management, and slum development receive minimal funding.
- **Neglect of Aspirational Districts:** Despite policy focus, only 2.15% of total CSR (2014–22) went to Aspirational Districts, missing the goal of reducing regional disparities.
- **Poor Impact Monitoring:** Evaluation focuses on numbers, not outcomes. Lack of standardized tools reduces project transparency and hinders comparisons across sectors or regions.
- **Weak NGO Linkages:** Limited engagement between companies and grassroots NGOs causes coordination issues and reduces on-ground effectiveness of CSR initiatives.
- **Funding Restrictions:** CSR funds cannot be used to build NGO reserves; they only cover project-related costs. This limits NGOs' institutional growth.
- **Compliance-Driven Approach:** CSR in India is frequently viewed as a mandatory expenditure rather than a strategic investment. This mindset leads to a lack of innovation, long-term commitment, and integration of CSR into core business strategies.

To unlock CSR's full potential, companies must move beyond legal obligation and embrace CSR as a long-term strategic investment. A shift toward innovation, equitable resource allocation, and meaningful stakeholder engagement is essential to ensure that CSR truly drives sustainable and transformative development.

Poverty Trends in India

Context: The 2022–23 and 2023–24 Household Consumption Expenditure Surveys (HCES) by NSO offer updated data on poverty and inequality trends from 2011–12 to 2023–24.

Key Insights from NSO Household Surveys (2011–2024)

A. Poverty Line (Rangarajan Committee methodology)

- In rural areas, the poverty line has increased from ₹972 in 2011–12 to **₹1,837 in 2022–23**.
- In urban areas, it rose from ₹1,407 in 2011–12 to **₹2,603 in 2022–23**, and further to ₹2,736 in 2023–24 (₹13,680 for a family of five).

B. Poverty Reduction Trends

- The **overall poverty ratio** dropped from 29.5% in 2011–12 to 9.5% in 2022–23, and further to just **4.9% in 2023–24**.

C. World Bank Data

- According to the World Bank, **extreme poverty in India** (defined as living on less than \$2.15 per day (in PPP terms)) fell sharply from 16.2% in 2011–12 to just **2.3% in 2022–23**.
- Over this period, more than 170 million people were lifted out of extreme poverty.

Possible Drivers of Poverty Reduction

- **Strong GDP Growth:** India's GDP growth rate grew from 7.6% in 2022–23 to 9.2% in 2023–24 (an increase of 1.6 percentage points). Higher economic growth typically increases employment, wages, and overall income, helping more people move above the poverty line.
- **Moderate CPI Inflation:** Consumer Price Index (CPI) inflation fell from 6.7% to 5.4% during the same period. Lower inflation, especially for essential items, increases people's real purchasing power, especially benefiting low-income groups.
- **Depth of Poverty Reduced:** Many poor people moved just above the poverty line (within 115–125% of the threshold), indicating improvement in living standards among the lowest income groups. This shows that poverty has become shallower, not just smaller in numbers.
- **Decline in Consumption Inequality:** The Gini coefficient (a measure of inequality) fell from 0.282 in 2022–23 to 0.253 in 2023–24. A fall in inequality suggests that lower-income households saw better improvements in consumption than wealthier ones, contributing to poverty reduction.

Major Government Initiatives to Eradicate Poverty in India

MGNREGA (2005)

- Guarantees 100 days of wage employment annually to rural households.
- In 2024–25, it supported over 13 crore workers, offering income during agricultural lean seasons.

DAY-NRLM (2011)

- Empowers rural women through Self Help Groups (SHGs), focusing on income generation and financial inclusion.
- By 2025, it operated in 5,369 blocks across 682 districts.

Jal Jeevan Mission (Extended to 2028)

- Aims to supply piped drinking water to all rural households.
- Focuses on health, gender empowerment, and community participation.

Start-Up India & Stand-Up India

- Promote entrepreneurship among youth, women, and marginalised groups.
- Offer credit, mentoring, and market access for self-employment.

PMAY–Gramin (2016)

- Provides financial aid for pucca houses to rural poor.
- Eligible families get ₹1.2–1.3 lakh, with Centre-State cost sharing.
- Millions of homes have been built using SECC data.

Social Security & DBT Schemes

- Schemes like IGNOAPS, Annapurna, and NFBS offer pensions, food, and financial aid to vulnerable populations.

Challenges to Poverty Eradication

- **Unequal Distribution of Wealth and Resources:** The top 1% of Indians have 75 times more income and 313 times more wealth than the bottom 50%. In 2023, the bottom 50% owned just 6.5% of the country's wealth, down from 11.4% in 1961, while the top 10% now hold 65% of all wealth.
- **Regional Disparities:** Five southern states accounted for 30% of India's GDP in 2023–24, reflecting significant regional imbalances. Western states have consistently outperformed others, while states like West Bengal saw their GDP share drop from 10.5% in 1960–61 to 5.6% in 2023–24.
- **Skill Development Deficit:** Only about 2% of Indians aged 15–29 have received formal vocational training, and just 8% have received non-formal training, compared to much higher rates in developed countries (e.g., 96% in Korea, 75% in Germany).
- **Unemployment and Underemployment:** The national unemployment rate rose to 5.6% in May 2025 from 5.1% in April. Youth unemployment stood at 13.8%, higher in urban areas (17.2%) than rural (12.3%). Seasonal shifts in agriculture continue to cause job instability.
- **Health and Nutrition:** About 13% of the population of India suffers from chronic undernourishment. Poor health and malnutrition, particularly among children and marginalized groups, reduce productivity and income potential, perpetuating poverty cycles.
- **Leakages in Welfare Delivery:** Despite numerous welfare schemes, corruption, middlemen, and poor targeting reduce their impact. India is ranked at 96th in Transparency International's 2024 index, reflecting high perceived public-sector corruption.

Addressing these requires a multi-dimensional, integrated approach focusing on inclusive growth, better targeting and implementation of welfare programs, investment in education and skill development, rural and urban infrastructure, and social reforms to break the cycle of poverty.

National Urban Livelihood Mission (NULM 2.0)

Context: The Government of India is set to launch the next phase of its livelihood mission for the urban poor and vulnerable sections – National Urban Livelihoods Mission 2.0 (NULM 2.0).

Need for the National Urban Livelihoods Mission (NULM)

- **High Unemployment:** Urban Unemployment rate is 6.4% (Oct- Dec 2024); educated youth unemployment is 6.5%.
- **Rapid Urbanisation:** Urban population will rise from 31% to 42% by 2030. This rapid urbanisation puts huge pressure on housing, jobs, and public services.
- **Changing Demographics:** Working-age population to rise from 50% (2011) to 59% (2041); seniors from 8% to 16%. This changing population structure means India will need a diverse range of services and infrastructure: housing, clean water, sanitation, and digital connectivity.
- **Climate Change Risks:** Nearly 66% of public sector losses during extreme weather events come from damage to infrastructure. NULM can support climate-resilient infrastructure and livelihoods.

About Deendayal Antyodaya Yojana – National Urban Livelihoods Mission (DAY-NULM)	
Launch	• NULM was launched in 2013 by the Ministry of Housing and Urban Poverty Alleviation, replacing the earlier Swarna Jayanti Shahari Rozgar Yojana (SJSRY). • In 2016, it was renamed as Deendayal Antyodaya Yojana – NULM (DAY-NULM).
Objectives	• To organize the urban poor into Self Help Groups (SHGs) and strengthen these institutions to support sustainable livelihoods. • To create skill development opportunities that lead to market-based employment. • To assist the urban poor in starting their own businesses by providing easy access to credit. • To provide shelter with essential services for the urban homeless. • To support street vendors by helping them access: Suitable working spaces, Institutional credit, Social security benefits, Skills required for new job markets
Implementation	• The scheme primarily targets the urban poor, including urban homeless. • It is implemented in all district headquarter towns and towns with a population of 1 lakh or more (as per Census 2011). • Currently, 791 cities are covered under the scheme. Other statutory urban local bodies may be included on a case-by-case basis at the request of state governments.
Funding Pattern	• The Centre and States share costs in the ratio of 75:25. • For North-Eastern and Special Category States, the ratio is 90:10.
Performance Highlights	Skill Training and Livelihood Creation • 38.12 lakh livelihoods created • 15.39 lakh candidates trained in market-oriented courses • 8.62 lakh skilled candidates successfully placed in jobs Self-Help Groups (SHGs) and Micro Enterprises • 9.55 lakh SHGs formed across India • 6.58 lakh SHGs received Revolving Funds • 9.58 lakh individuals/SHGs assisted in setting up micro-enterprises • 8.11 lakh loans disbursed under bank linkage programmes

	Support for Urban Homeless • 1.41 lakh shelter spaces created across cities to offer dignified living conditions Support for Street Vendors • Over 31.32 lakh Street Vendor ID Cards issued • Around 38.77 lakh Certificates of Vending provided • Enables legal recognition and access to credit and social benefits
DAY-NULM 2.0	• The government will facilitate eligible individual urban poor or a group of such persons to avail microcredit of up to Rs 4 lakh and Rs 20 lakh, respectively. This microcredit will be provided at a subsidised interest of 5% • The microcredit will help the beneficiaries to: Start enterprises; Create social infrastructure like labour chowk; and Provide innovation grants for purposes such as buying sanitation machineries. • Focus on six groups of workers: Construction workers, Gig workers, Waste management workers, Care workers, Domestic workers, Transportation workers.

India's Neighbourhood**India Maldives Relations**

Context: Maldivian President Mohamed Muizzu undertook his first official bilateral visit to India.

Key Outcomes of the Bilateral Meeting

- Both sides agreed to elevate their bilateral relationship to a **Comprehensive Economic and Maritime Security Partnership**.
- **Economic and Financial Support:**
 - India has extended financial assistance to the Maldives, **offering INR 30 billion and USD 400 million through a bilateral currency swap agreement**.
 - Both sides have **initiated negotiations for a Free Trade Agreement (FTA)** to enhance economic cooperation and increase Indian investment in Maldivian sectors.
- **Defence and Maritime Security Cooperation:**
 - India and the Maldives **agreed to amend defence and security ties**, which had weakened after President Muizzu ordered Indian military personnel to leave in 2024. India will refit and repair a Maldivian Coast Guard vessel.
 - Several initiatives were launched to enhance Maldives' maritime security, including:
 - Provision of radar systems, defence platforms, and infrastructure support
 - Boosting the surveillance and monitoring capacity of the Maldives
 - Supporting the Maldives National Defence Force (MNDF) with equipment and facilities
 - Enhancing disaster response, risk mitigation, and information-sharing
 - Inaugurating the new Ministry of Defence building, constructed with Indian support
- **Key Agreements Signed:** Agreement on Training of Judicial Officers, Bilateral Currency Swap Agreement, Agreement on Cooperation in the Prevention of Corruption, MoU on Law Enforcement Training, MoU on Youth and Sports Cooperation
- **Digital Economy:** Introduced RuPay card in Maldives, facilitating easier payments for Indian tourists. India will assist Maldives in developing its digital & financial infrastructure, including services like UPI and RuPay.
- **Capacity Building and Training:** India will provide customized training for civil servants. A program for women-led development will be launched. A Start-up Incubator-Accelerator will be established in the Maldives to encourage youth entrepreneurship.
- **People-to-People Ties:** New consulates will be opened: Maldives in Bengaluru and India in Addu City.

Significance of the Maldives for India

- **Strategic:** Maldives is located along key shipping lanes in the Indian Ocean, acting like a maritime 'toll gate' between the Strait of Hormuz, Gulf of Aden, and the Strait of Malacca. **Around 50% of India's trade and 80% of its energy imports** pass through Sea Lines of Communication (SLOCs) near the **Maldives**.
- **Geopolitical:** Maldives is a cornerstone of India's **Neighbourhood First Policy** and **SAGAR (Security and Growth for All in the Region) initiative**. Maldives helps India secure sea lanes, combat piracy, and address sea-based terrorism in the Indian Ocean region (IOR).
- **China:** Maldives has emerged as a strategic location in China's "String of Pearls" strategy, and India's presence helps counterbalance Chinese influence in the IOR.
- **Counter-Terrorism and Anti-Piracy:** Maldives acts as India's first line of defence against maritime threats such as terrorism, drug trafficking, and piracy.
- **Trade Relations:** India was the Maldives' largest trade partner in 2023, with bilateral trade reaching nearly \$1 billion.
- **Diaspora and Workforce:** Approximately 29,000 of Indian professionals, especially in health and education, live and work in the Maldives.

- **Tourism Ties:** The Maldives is a popular destination for Indian tourists (2.09 lakh in 2023), strengthening economic and cultural bonds between the two nations.

Challenges in the India-Maldives Bilateral Relationship

- **China's Rising Presence:** China's infrastructure projects like the Sinamale Bridge under BRI raise concerns about strategic influence. Military cooperation with China challenges India's role in regional maritime security.
- **Radicalisation and Extremism:** Over 200 Maldivian nationals out of a population of 4 lakhs travelled to Syria to join ISIS. India fears these elements could use the Maldives as a base for terror attacks.
- **Domestic Politics:** Political shifts, especially during former President Yameen's term, led to the "India Out" campaign. Although toned down during the current regime, anti-India sentiments still resurface.
- **Sovereignty Issues:** India's economic aid has helped the Maldives but raised concerns about dependency. Some Maldivians fear foreign assistance may affect national sovereignty and independent policymaking.

To strengthen India–Maldives relations, both countries must **focus on open dialogue, mutual respect, and transparency in bilateral projects**. India should continue **supporting Maldives' development priorities** while being sensitive to its sovereignty concerns. **Enhanced people-to-people engagement**, cooperation in counter-terrorism, and balanced strategic partnerships will be key.

India Nepal Relations

Context: India and Nepal inked agreements during the 7th India-Nepal Joint Commission meeting at Kathmandu.

Key Aspects of the Bilateral Relationship

- **Historical and Cultural Ties:** India and Nepal have deep-rooted cultural connections. Prince Siddhartha (Buddha) was born in Lumbini, now in Nepal. Nepal's Communist Party was founded in Calcutta. Nepali citizens have served in the Indian Army since the 1815 Treaty of Sugauli. There are about 120,000 Indian Gurkha veterans living in Nepal, and they draw pensions from the Indian Army.
- **Defence and Security Cooperation:** Around 32,000 Nepalese Gurkhas currently serve in the Indian Army, making up 60% of the Gorkha regiments. Both countries honor each other's Army Chiefs with honorary general titles. Security agencies regularly meet to coordinate on border and internal security.
- **Economic Ties:** India accounts for 64.1% of Nepal's total trade, valued at USD 8.85 billion (FY 2022–23), including \$8.01 billion in exports to Nepal and \$839.6 million in imports from Nepal. India is also Nepal's top export destination, receiving 67.9% of its total exports, which include edible oil, coffee, tea, and jute.
- **Energy and Infrastructure:** A Power Exchange Agreement has existed since 1971. Key infrastructure includes the 400 kV Muzaffarpur-Dhalkebar transmission line and two 132 kV lines completed in 2017. In 2019, the Motihari-Amlekhgunj petroleum pipeline—the first cross-border fuel pipeline in South Asia—was inaugurated.
- **Humanitarian Assistance:** India has been a key disaster responder for Nepal. It pledged \$1 billion after the 2015 earthquake, sent 23 tons of medical aid during COVID-19, and in 2024 announced NPR 1000 crore for Jajarkot earthquake relief, mostly as a grant.
- **Religious and Cultural Tourism:** About 30% of Nepal's foreign tourists are Indians. Shared religious sites, such as Janakpur (Sita's birthplace), form part of the Ramayana circuit. India and Nepal are also jointly developing a transnational Buddhist Tourist Circuit to promote spiritual and cultural tourism.

Challenges and Disputes

- **Cross-Border Insurgency:** Left-Wing Extremists in India have ideological links with Nepalese Maoists. Groups like PWG have tried to operate near the Bihar-Nepal border. Pakistan is also suspected of using Nepal to push terrorists into India, with sleeper cells reportedly set up by militants fleeing Kashmir in the 1990s.

China Factor in India Nepal Relations

- **Military Implications of Infrastructure Projects:** Chinese-funded projects like airports (Pokhara, Lumbini), hydropower projects, and the proposed Trans-Himalayan Railway in Nepal could serve dual-use purposes—civilian and military.

- **Trade and Connectivity Alternatives:** China offers Nepal access to ports and trade routes bypassing India. Planned oil pipelines and cross-border links deepen economic integration.
- **Rising Chinese Investment and Economic Influence:** Since 2017–18, China has become Nepal's largest source of new FDI commitments, overtaking India. It now holds 12.7% of Nepal's total FDI stock (NPR 33.4 billion), second only to India. This rising economic footprint gives China a strong hold over key sectors, including energy, tourism, and infrastructure.
- **Debt-trap Diplomacy:** Chinese infrastructure loans, often at high interest rates, have burdened countries like Sri Lanka. Nepal's increasing reliance on such loans and investments raises fears of losing control over strategic assets and becoming economically dependent on China.
- **Competing Development Models:** India's traditionally grant-based development aid is now being compared with China's loan-driven investments. Nepal faces a choice between faster but riskier development with China and slower, less risky support from India.
- **Internal Divisions in Nepal:** Nepal's Communist Party supports deeper ties with China, while the Nepali Congress remains cautious of Chinese financial terms and long-term sovereignty concerns.
- **Belt and Road Initiative (BRI):** Nepal joined BRI in 2017, but implementation accelerated after Prime Minister Oli's 2024 visit to China. India opposes BRI due to its projects in Pakistan-occupied Kashmir, raising sovereignty issues.

- **Political Instability in Nepal:** Frequent leadership changes (three PMs in five years) create uncertainty in Nepal's policies. Anti-India rhetoric is often used for political gains, as seen in the 2020 Kalapani map dispute.
- **Free Movement and Border Issues:** The open border allows unrestricted movement, leading to illegal migration and pressure on resources. It also enables smuggling, trafficking, and circulation of counterfeit currency. In 2016, over 260 people were arrested for smuggling-related crimes.
- **Boundary Disputes:** Nepal's 2020 map claim included Indian territories like Kalapani, Lipulekh, and Limpiyadhura. Susta, in Bihar's West Champaran, is also disputed due to changes in the Gandak river's course—many of these issues date back to colonial times.
- **Transborder River Sharing:** India and Nepal have river agreements on Kosi, Gandak, and Mahakali. Yet, Nepal feels the terms are unfair, while India believes Nepal delays cooperation but benefits from the projects without investing.

India should boost trade and investment in key sectors, improve border management, and respect Nepal's sovereignty while fostering mutual trust. Resolving water disputes and completing joint river projects on time will further strengthen ties.

China's Largest Dam

Context: China has approved the construction of the world's largest hydropower dam on the lower reaches of the Yarlung Zangbo River (known as the Brahmaputra in India) on the Tibetan Plateau.

About China's Brahmaputra Dam Project

- The dam is being built in Medog County, Tibet Autonomous Region, where the river drops nearly 2,000 meters, creating ideal conditions for hydropower generation.
- A part of China's broader renewable energy push, aimed at achieving carbon neutrality by 2060 and boosting economic development in Tibet.
- Expected to generate 60 gigawatts of power—three times that of the Three Gorges Dam.
- Will supply 300 billion kWh of renewable energy annually, advancing China's green energy goals. Estimated to generate 20 billion yuan (\$3 billion) in annual revenue for Tibet.

Geopolitical Implications for India

- **Strategic Leverage:** China's control over the Brahmaputra's flow grants it "hydro-hegemony," enabling potential manipulation of water release during dry seasons or monsoons. This could disrupt agriculture, drinking water supplies, and hydropower generation in India's northeastern states.

- **Border Disputes:** The dam's proximity to Arunachal Pradesh adds complexity to territorial disputes. Analysts warn that China could weaponize water flow during military standoffs, as seen in the 2017 Doklam crisis when hydrological data sharing was halted.
- **Diplomatic Challenges:** India has repeatedly urged China to ensure transparency and safeguard downstream interests through diplomatic channels, including a formal demarche in December 2024. However, the absence of a binding water-sharing treaty leaves India vulnerable to unilateral decisions.

Environmental and Socio-Economic Risks for India

- **Reduced Water Flow:** The dam could shrink water availability during dry seasons, impacting 30 million people reliant on the river for agriculture and livelihoods.
- **Sediment Trapping:** Chinese dams may block 60–80% of nutrient-rich sediments, reducing soil fertility in Assam and Bangladesh. This threatens rice and jute production, critical to regional economies.
- **Global Warming:** The Tibetan Plateau (often called the “Third Pole”) is crucial for global climate stability. The project could accelerate glacial melt and disturb the region's cryosphere, worsening climate change impacts.
- **Seismic Threats:** Located in a high-risk earthquake zone (Zone V), dam failure could trigger catastrophic flooding in Arunachal Pradesh and Assam. The 2015 Nepal earthquake highlights the Himalayas' vulnerability.

India's Countermeasures

- **Hydropower Projects:** India plans to build 12 hydropower stations in Arunachal Pradesh, including a 10 GW project in the Dibang Valley, to counterbalance China's influence.
- **Diplomatic Efforts:** The Expert Level Mechanism (2006) and recent Foreign Secretary-level talks aim to resume hydrological data sharing and foster cooperation.

India must revive hydro diplomacy through regular Expert Level Mechanism meetings, seek binding water-sharing treaties, and strengthen ties with downstream nations. Accelerating domestic hydropower projects, enhancing flood resilience, investing in scientific research, and raising global concerns will help India ensure water security and counter China's strategic leverage on the Brahmaputra.

India Sri Lanka Relations

Context: Sri Lanka's President Anura Kumara Disanayake (AKD) visited India recently. This was his first trip overseas since becoming leader of his country.

Significance of Sri Lanka for India

- **Location:** Sri Lanka lies just south of India across the Palk Strait, making it vital for India's maritime trade routes and naval operations in the Indian Ocean.
- **Economic:** India is among Sri Lanka's top trade and investment partners, with bilateral trade reaching USD 5.54 billion in FY 2023–24. ETCA negotiations resumed in 2023 after five years. India has invested USD 2.25 billion cumulatively, focusing on sectors like energy, telecom, banking, and manufacturing, strengthening economic ties further.
- **Geostrategic:** As a key part of India's 'Neighborhood First Policy,' Sri Lanka shares India's concerns on global issues like climate change and collaborates in forums such as BIMSTEC, SAARC, ISA, and the India-Sri Lanka-Maldives trilateral mechanism.
- **Connectivity:** India and Sri Lanka promote people-to-people ties through enhanced air and sea connectivity. The Nagapattinam–Kankesanthurai ferry service supports this goal and complements India's development efforts in Sri Lanka's Northern Province.
- **Sri Lankan Tamils:** India supported Sri Lanka during the civil war and continues to urge national reconciliation through political solutions, including the implementation of the 13th Constitutional Amendment.
- **Cultural:** Buddhism forms a strong civilizational bond. Institutions like the Jaffna Cultural Centre and the Swami Vivekananda Centre promote cultural and educational exchanges.
- **Defense and Security:** From the civil war era to present, India has supported Sri Lanka through peacekeeping, joint patrols, intelligence sharing, and defense training. India recently gifted a Dornier aircraft to bolster Sri Lanka's maritime security.

- **Infrastructure:** India remains a top development partner, involved in housing, railways, ports, and airport upgrades-such as housing for displaced persons and the development of Jaffna airport.
- **Indian Community:** Sri Lanka hosts around 10,000 People of Indian Origin (Sindhis, Bohras, Gujaratis, etc.) mainly in business. About 1.6 million Indian-Origin Tamils (IOTs) work in plantations or trade in Colombo. Additionally, nearly 14000 NRIs are engaged in professional sectors across the country.

Challenges in Bilateral Relations

- **13th Amendment:** This provision for devolution and regional councils remains contentious in India-Sri Lanka ties. India frequently raises its poor implementation, stressing its importance for fulfilling the aspirations of Indian-origin Tamils (4.2% of Sri Lanka's population).
- **Chinese Influence:** Over the last decade, China has become Sri Lanka's top investor, especially in ports and airports. By 2022, Sri Lanka owed China \$7.4 billion-nearly 20% of its external debt-raising fears of a Chinese debt trap amid its ongoing economic crisis.
- **Fishing Activities:** Despite maritime boundary agreements, issues like the Kachchatheevu island persist. In the past two decades, Sri Lanka has detained 6,184 Indian fishermen and seized 1,175 Indian boats, straining bilateral ties.
- **Political and Economic Instability:** Sri Lanka has experienced frequent leadership changes in the last four years, causing foreign policy uncertainty and project delays due to weak coordination and shifting priorities.

India should follow its Neighbourhood First and SAGAR policies to counter China's influence. To resolve the fishing dispute, create shared zones, regulate trawling, and consider leasing Kachchatheevu. India must also continue urging Sri Lanka to implement the 13th Amendment for Tamil reconciliation.

India Bhutan Relations

Context: King Jigme Khesar Namgyel Wangchuk of Bhutan and Queen Jetsun Pema visited India.

Key Highlights of the Visit

- **Gelephu Mindfulness City (GMC):** PM Modi assured continued Indian support for Bhutan's GMC project, aimed at boosting prosperity and cross-border linkages. Adani Group is exploring investments in infrastructure, energy, and airport development.
- **Hydropower Cooperation:** Progress made on the 1020 MW Punatsangchhu-II project; discussions held to conclude Punatsangchhu-I and initiate new reservoir-based projects.
- **Connectivity:** Emphasis on enhancing rail and digital cross-border connectivity.

India – Bhutan Bilateral Relationship

- **Political:** India and Bhutan established formal diplomatic ties in 1968. Their relationship, built on the 1949 Treaty of Friendship (renewed in 2007), is marked by mutual trust and regular high-level visits, strengthening bilateral goodwill and cooperation.
- **Trade:** The 1972 India-Bhutan Trade Agreement ensures free trade. India is Bhutan's largest trading partner, covering 80% of Bhutan's trade. Bilateral trade has more than tripled from \$484 million in 2014-15 to \$1713 million in 2022-23.
- **Hydropower Cooperation:** A cornerstone of bilateral economic ties, hydropower aids Bhutan's development. Under the 2006 pact and 2009 Protocol, four projects (totaling 2,136 MW) supply electricity to India.
- **Cultural & Buddhist Links:** Bhutanese pilgrims visit key Indian Buddhist sites like Bodh Gaya and Nalanda. The 2003-founded India-Bhutan Foundation promotes cultural ties and people-to-people contact.
- **Development Aid:** India has supported Bhutan's development since the 1960s, contributing ₹4,500 crore to its 12th Five-Year Plan. The 4th Development Cooperation Talks took place in January 2023.
- **Defense:** India's Indian Military Training Team provides training to the Royal Bhutan Army. The Border Roads Organisation has built much of Bhutan's road network under **Project DANTAK**.
- **New Areas of Cooperation:** Projects like RuPay, BHIM, and the India-Bhutan SAT (launched in 2023) show growing ties in digital payments and space collaboration.

- **Indians Working in Bhutan:** Around 50,000 Indians work in Bhutan, mainly in construction, education, and consultancy. Many daily wage workers also cross the border, reflecting close economic links.

Challenges in the Relationship

- **China's Growing Influence and Border Disputes:** China's growing presence in Bhutan, particularly along the disputed border, has raised concerns for India, which has historically protected Bhutan's sovereignty. Despite friendly exchanges, the 2017 Doklam standoff and recent Chinese forces' incursions have the potential to strain India-Bhutan relations.
- **Hydropower Projects:** Indian-backed hydropower is vital to Bhutan's economy. However, perceptions of unequal terms, policy changes, and exclusion from India's national grid have sparked public discontent and sectoral tension.
- **Militant Hideouts:** Militant groups like the United Liberation Front of Assam (ULFA) and the National Democratic Front of Bodoland (NDFB) have used Bhutan as a hideout, complicating security dynamics in the region.
- **BBIN Initiative:** Bhutan has put the Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicle Agreement on hold due to environmental concerns, affecting regional connectivity and cooperation efforts.
- **Trade Imbalance:** Bhutan faces trade issues due to a trade imbalance of ~\$700 million. This is leading to concerns about the country's ability to reduce its trade deficit. Moreover, Bhutan is seeking increased market access for its products.

Both nations must address emerging challenges with open dialogue and mutual respect. Strengthening cooperation in new areas like space, fintech, and green development will ensure the relationship remains future-ready, balanced, and beneficial for both countries.

India Bangladesh Relations

Context: India summoned Bangladesh's Acting High Commissioner after Border Guards Bangladesh (BGB) objected to BSF's fencing work along the West Bengal-Malda border.

India-Bangladesh Border (IBB)

- **Geographical Spread:** The India-Bangladesh border is the longest international border India shares, stretching 4,096.7 km. It runs through five states: West Bengal (2,216.7 km), Assam (263 km), Meghalaya (443 km), Tripura (856 km), Mizoram (318 km)
- **Nature of the Border:** The border is highly porous and prone to illegal immigration, cattle smuggling, human trafficking, and other cross-border crimes.
- **Fencing Status:** Overall, out of 4,096.7 km, around 3,141 km have been fenced, including major sections in West Bengal. As of 2023, 81.5% of West Bengal's 2,216.7 km has been fenced. Delays in land acquisition Over 900 km of the border is riverine, making physical fencing unfeasible

Areas of Cooperation

- **Economic and Commercial Relations:** Bangladesh stands as India's largest trade partner in South Asia, with bilateral trade at \$14.01 billion (FY 2023-24), increasing over the past decade. India is Bangladesh's largest export destination in Asia.
- **Connectivity Initiatives:** These include inaugurating the Chilahati-Haldibari railway link in 2021 and increasing passenger train frequencies for the Maitree Express and Bandhan Express. The Protocol on Inland Water Transit and Trade (PIWTT) facilitates goods transportation via waterways.
- **Development Partnership:** India has become Bangladesh's principal development partner, extending three Lines of Credit (LOC) totaling US\$8 billion since 2010. These funds support infrastructure development across various sectors. India has also contributed to the development of healthcare and education in Bangladesh through initiatives like the 80 bed Friendship Hospital.
- **Capacity Building and Human Resource Development:** India's development cooperation with Bangladesh includes extensive human resource development through training programs and scholarships. Notably, 1800

Bangladesh Civil Service officials have received training at the National Centre for Good Governance (NCGG) in Mussoorie since 2019.

- **Energy:** Bangladesh imports 2,000 MW of electricity from India, and in 2018, Russia, Bangladesh, and India signed a memorandum for cooperation in the Rooppur Nuclear power plant project. Further in 2018 only, the foundation stone of India-Bangladesh Friendship Pipeline (IBFP) was laid.
- **Defence Collaboration:** Both the countries held the fifth Annual Defence Dialogue in August 2023 in Dhaka. Also, High-level exchanges and joint exercises like the SAMPRITI (army), Bangosagar (navy) etc. strengthen defense cooperation.
- **Water Sharing and Border Cooperation:** Agreements like the Kushiara Pact facilitate water sharing, while the establishment of border haats (currently 7) promotes trade. The joint rivers commission addresses flood control measures and flood warnings.
- **Multilateral Engagement:** Both countries collaborate on multilateral platforms such as SAARC, BIMSTEC and Indian Ocean Rim Association (IORA). During India's presidency of the G20 summit in 2023, Bangladesh was invited as one of the guest countries.
- **Medical Tourism:** Bangladesh comprises over 35% of India's international medical patients and contributes over 50% to India's revenue from medical tourism.
- **Cultural Cooperation:** The Indira Gandhi Cultural Centre (IGCC) in Dhaka fosters cultural exchanges, offering programs in yoga, Kathak, Manipuri dance, Hindi language, and Hindustani classical music.

Challenges in the Relations

- **Political Disconnect:** India's strong ties with Sheikh Hasina and the Awami League have sidelined other political actors. The 2024 transition to an interim government under Prof. Muhammad Yunus has disrupted established diplomatic channels. India's earlier role in hosting Hasina during exile is seen by some as political interference, sparking mistrust.
- **Rising Anti-India Sentiment:** Communal incidents in India and unresolved bilateral issues fuel public resentment in Bangladesh. Movements like "India Out" and protests targeting Indian missions reflect growing hostility.
- **Increasing Chinese Influence:** In 2023-24, China accounted for 25% of Bangladesh's imports, compared to 20% six years ago. Bangladesh's participation in the Belt and Road Initiative has drawn major Chinese infrastructure investments, challenging India's regional influence.
- **Immigration Challenges:** Illegal immigration from Bangladesh, involving 10–20 million people, has strained bilateral ties and created socio-economic and political issues in Indian states along the border due to unrest.
- **Sharing of Transboundary River Waters:** India and Bangladesh share 54 rivers but have only signed two treaties-the Ganga Waters Treaty and Kushiara River Treaty. The unresolved Teesta dispute persists, with Bangladesh seeking fair water distribution, which both the Union and West Bengal governments oppose.
- **Deportation of Rohingyas:** India and Bangladesh differ on Rohingya deportation. India seeks to repatriate Rohingyas from its territory first, delaying deportation from Bangladesh and creating conflicting priorities.
- **Cross-Border Terrorism and Infiltration:** Terrorism and infiltration via the Bangladesh border threaten India's security. A Bangladeshi NGO notes an average of 30 deaths annually during illegal border crossings over the last decade.
- **Drug Smuggling & Trafficking:** Bangladesh serves as a major transit for heroin trafficking from South Asia to Europe. Between January to November 2024, the BSF confiscated drugs and contraband worth Rs 12.7 crore at the India-Bangladesh border.

Addressing these challenges requires sustained diplomatic engagement, sensitivity to each other's concerns, and a commitment to equitable and mutually beneficial solutions.

India and Indian Ocean Region (IOR)

Context: India and France have agreed to explore opportunities for coordinated surveillance whilst deployed to counter threats to maritime security in the Indian Ocean Region (IOR).

What is the Significance of the Indian Ocean Region (IOR) for India?

- **Strategic Location:** India's central position in the IOR provides it with a significant advantage in terms of security, trade, and influence in the region. The IOR serves as a critical maritime area connecting Africa, Asia, and Australia, making it a pivotal hub for global trade and commerce.
- **Economic Significance:** More than half of global seaborne trade passing through IOR. India's trade heavily relies on the IOR, with almost 95% of its trade by volume and 68% by value routed through this region. The IOR littoral states are rich in natural resources, including oil, minerals, and marine resources, which are essential for economic development.
- **Energy Security:** India imports 85% of its oil needs, majorly through sea-route through the Indian Ocean. The IOR is also vital for global oil trade, with around 80% of the world's maritime oil trade passing through it.
- **Security Concerns:** India's long coastline and maritime boundaries in the IOR make it vulnerable to security threats, including piracy, illegal fishing, smuggling, and terrorism. India's engagement in the IOR is crucial for safeguarding its maritime interests, ensuring freedom of navigation, and countering security challenges in the region.



Key Challenges in the Indian Ocean Region (IOR) for India

- **Growing Chinese Influence:** China's "String of Pearls" strategy of developing ports in Gwadar, Hambantota, Kyaukpadaung, and Djibouti threatens to encircle India. Dual-use ports and Chinese naval deployments challenge India's maritime dominance.
- **Geopolitical Tensions with Neighbors:** India's relations with some neighbors remain fragile. For instance, a diplomatic row with the Maldives in 2024 led to boycotts. External Affairs Minister S. Jaishankar also revealed that over 6,000 Indian fishermen have been detained and 1,185 boats seized by Sri Lanka in the last two decades, reflecting long-standing issues.
- **Maritime Infrastructure and Connectivity Gaps:** Despite heavy investment, India struggles to fully develop maritime infrastructure. Only 32% of Sagarmala projects were completed by 2025.
- **Non-Traditional Security Threats:** Piracy, maritime terrorism, and environmental issues like illegal fishing and marine pollution pose challenges that require collective action. In 2023, piracy and armed robbery in the IOR witnessed a 20% jump over 2022.
- **Institutional Fragmentation:** The IOR lacks strong regional security frameworks. Organizations like the Indian Ocean Rim Association have limited capability, and overlapping initiatives reduce coordination.
- **Diverse Interests and Priorities:** IOR states have varied political systems, and strategic interests, which can make it difficult to reach consensus on issues. The oil-exporting countries (Iran, UAE, etc) may prioritize oil trade and security, while small island nations (Comoros, Maldives, etc) focus on issues like climate change.
- **External Powers & Strategic Autonomy:** A large US (and by extension, French) military presence in the Indian Ocean can be seen as encroaching on what India considers its natural sphere of influence, potentially undermining its status as a "net security provider" and "preferred security partner" in the region.

Way Forward

- India must fast-track maritime infrastructure like Sagarmala and the Great Nicobar hub, and leverage strategic ports like Sittwe.
- Naval modernization, including indigenous aircraft carriers, submarines, and drones, is essential.

- Expanding partnerships (e.g., with France, UAE, Maldives, Sri Lanka) and strengthening maritime domain awareness via radar networks, satellites, and the IFC-IOR are key.
- Strategic island development and joint naval exercises (e.g., Malabar) will boost regional outreach.

Promoting the Blue Economy and enhancing disaster response-like the SAGAR initiative and NDRF expansion-will secure India's role as a regional leader in maritime security and cooperation.

China - Bangladesh and India

Context: Recently, Chief Adviser of Bangladesh, Muhammad Yunus, visited China. During the visit nine agreements were signed, expanding economic and technical cooperation.

Key Drivers of China-Bangladesh Relations

- **Strategic Location:** Bangladesh's position as a gateway between South and Southeast Asia provides China with vital access to the Bay of Bengal and strengthens its influence across South Asia and the Indo-Pacific.
- **Economic Cooperation:** In 2018, China surpassed India as Bangladesh's largest trading partner. Bilateral agreements aim to reduce trade imbalances, expand exports, and boost industrialization through manufacturing relocation and financial aid.
- **Healthcare Access:** China offers affordable medical care for Bangladeshis through hospital partnerships and pledges to build new facilities, addressing healthcare gaps and strengthening people-to-people ties.
- **Water Management Collaboration:** China supports the Teesta River Restoration Project to address seasonal water shortages and floods in Bangladesh, helping improve agricultural productivity and regional cooperation on transboundary water issues.
- **Rohingya Repatriation Support:** China uses its diplomatic ties with Myanmar to mediate the safe return of Rohingya refugees, providing political support and acting as a key regional facilitator.
- **Infrastructure and Technical Aid:** China has pledged USD 2.1 billion in investments, loans, and grants to Bangladesh, including energy, roads, and digital connectivity, contributes to Bangladesh's development goals and aligns with China's Belt and Road Initiative (BRI).
- **Cultural and Institutional Ties:** Recent MoUs between both nations promote collaboration in education, media, sports, and cultural heritage, broadening the foundation of bilateral relations beyond just economics.

Impact of Bangladesh-China Relations on India

- **Naval Presence Near India:** China is modernizing Bangladesh's Mongla Port and supplying military equipment, enhancing Beijing's access to the Bay of Bengal-India's maritime backyard.
- **Teesta River Concerns:** China's involvement in managing the Teesta River which is located near India's sensitive Siliguri Corridor, raises alarms as it could give Beijing more control near India's vulnerable northeast.
- **Border Tensions:** China's role in reviving Bangladesh's Lalmonirhat air base, close to India's "Chicken's Neck", have led India to boost its military presence in the region.
- **Submarine Base and Arms Supply:** China has built a submarine base for Bangladesh at Pekua, Cox's Bazar and remains its top arms supplier, shifting the military balance near India's eastern border.
- **Loss of Influence:** India's long-standing special relationship with Bangladesh is weakening as Dhaka moves closer to China, especially after Hasina's exit.
- **China's Investment Dominance:** Bangladesh secured \$2.1 billion in Chinese investments and deals, giving China control over strategic infrastructure like ports and rivers.
- **Extension of Chinese Economy:** Bangladesh is positioning itself as part of China's economic expansion under the Belt and Road Initiative (BRI), which may reduce India's economic influence in South Asia.
- **Fragmentation of Regional Integration:** If Bangladesh and Pakistan become hubs for Chinese digital and logistics corridors, India's regional connectivity initiatives (like the India-Myanmar-Thailand highway or BIMSTEC) could lose traction.

The way forward for India lies in constructive engagement, economic competitiveness, security cooperation, and regional integration. By adopting a proactive, respectful, and mutually beneficial approach, India

can maintain its influence in Bangladesh, counterbalance China's growing presence, and contribute to a stable and prosperous South Asia.

India Myanmar Relations

Context: Following the March 28 earthquake in Myanmar, India launched Operation Brahma, sending relief supplies, medical aid, rescue teams, and a field hospital.

Overview of Bilateral Relations

- **Trade and Economy:** India is the fifth-largest trading partner of Myanmar. The bilateral trade stood at US\$ 2.13 billion in 2024-25 rising from US\$328 million in 1997-98.
- **Connectivity:** Initiatives like the Tamu-Kalewa-Kalemyo highway and the Kaladan Multi-Modal Transit Transport project enhance connectivity. The Asian Trilateral Highway project, involving India, Myanmar, and Thailand, aims to link India with ASEAN countries.
- **Development Assistance:** India has extended \$1.75 billion in soft loans and offers developmental assistance based on Myanmar's needs. It supports the establishment of educational and research institutions like the Myanmar Institute of Information Technology.
- **Defense Cooperation:** Myanmar is a crucial partner in counter-insurgency efforts in India's northeast. In July 2019, India and Myanmar signed a Defense Cooperation Agreement aimed at boosting military engagement. In 2020, India gave a Kilo class Russian-built submarine to Myanmar as part of a military outreach.
- **Multilateral Partnership:** Myanmar's participation in organizations like ASEAN and BIMSTEC aligns with India's "Act East" policy, fostering regional cooperation. Myanmar is also a member of the Mekong-Ganga Cooperation.
- **Humanitarian Aid:** India offers swift aid to Myanmar during crises, such as after Cyclone Nargis (2008) and the Shan State earthquake (2011). In May 2023, India sent 40 tons of relief materials under the Operation Karuna for victims of Cyclone Mocha.
- **People- People Contacts:** India and Myanmar share strong cultural ties seen in restoration of projects like the Ananda Temple and historic temples in Bodh Gaya. Myanmar hosts a significant Indian diaspora, about 1.5-2.0 million, many engaged in farming, especially in regions like Bago and Tanintharyi.

Challenges in Relations:

- **Coup by Military Junta:** The 2021 military coup in Myanmar has placed India in a complex position. On one hand, India has a longstanding commitment to democratic values and human rights, which suggests it should oppose the junta. On the other hand, strategic interests in Myanmar are vital for India's "Act East" policy and regional security, requiring continued engagement.
- **Weak Trade Relations:** Despite \$2 billion in bilateral trade, India lags far behind China's \$16 billion. India's exit from RCEP may widen this economic gap further.
- **Rohingya Issue:** Around 40,000 Rohingyas in India raise security and resource concerns. Violence in Myanmar forces India into a delicate stance at the UN and complicates refugee policy decisions.
- **Trust Deficit:** Project delays, China's growing role, and refugee issues have eroded trust. For instance, the Kaladan Project, due by 2014, still remains incomplete.
- **Chinese Influence:** China's soft power and economic initiatives, such as China-Myanmar Economic Corridor (CMEC) and the establishment of surveillance facilities on Myanmar's Coco Island in the Bay of Bengal have bolstered its influence in Myanmar.
- **Northeast Insurgency:** Militant groups use Myanmar's border as a base. The 2021 ambush on Assam Rifles shows how Myanmar offers safe havens for anti-India insurgents.
- **Free Movement Regime:** This open-border system is exploited by criminals for arms smuggling and fake currency trade. Since 2020, the Assam Rifles has seized over ₹1,600 crore worth of illegal goods smuggled from Myanmar across the porous border.

India must carefully balance its stance on the Rohingya issue to maintain good relations with Bangladesh and Myanmar. Strengthening Buddhist cultural diplomacy and enhancing border security cooperation are crucial

for economic ties. Effective border management will mitigate threats, while leveraging Myanmar as a gateway to Southeast Asia can boost India's Act East Policy. Additionally, India should explore export opportunities in Myanmar's emerging market across various sectors.

India's Bilateral Relations

India Germany Relations

Context: The incumbent German Chancellor Olaf Scholz visited India for the 7th Intergovernmental Consultations (IGC), a high-level forum where ministers from both countries discuss key issues and report to their leaders.

Key Highlights of Recent Visit

- **Visa Expansion:** Germany to raise skilled Indian worker visas from 20,000 to 90,000 annually.
- **'Focus on India' Strategy:** Germany's long-term plan to deepen strategic and economic ties.
- **Supply Chain Diversification:** Agreement to reduce dependency on China, with India as a key partner.
- **Manufacturing Hub:** PM Modi invited German firms to invest under "Make in India, Make for the World."
- **Key Areas of Cooperation:**
 - **Defence & Security:** Agreements on classified information sharing and Mutual Legal Assistance Treaty.
 - **Green Energy:** Green hydrogen roadmap and clean energy cooperation.
 - **R&D Collaboration:** Joint efforts in advanced materials and tech innovation.

Overview of India–Germany Bilateral Relations

- India and Germany have shared a **Strategic Partnership** since the year 2000. In recent years, both countries have deepened cooperation in key areas such as: AI, Cybersecurity, Circular economy, Smart farming, Sustainable development
- **Trade Relations:** Germany is India's largest trading partner within the European Union (EU). In 2022–23, bilateral trade reached US\$26 billion (Exports to Germany: US\$10.1 billion. Imports from Germany: US\$15.9 billion) Germany is the 9th largest foreign direct investor in India with a cumulative FDI in India of US\$ 14.5 bn till December 2023
- **Intergovernmental Consultations (IGC):** The IGC was launched in 2011 and is held at the level of the Heads of Government. It allows both sides to: Conduct a comprehensive review of existing cooperation. Identify new areas of engagement.
- **Indo-Pacific Cooperation:** With growing geopolitical challenges in Indo-Pacific region, Germany and the EU see India as a key partner for ensuring economic and strategic stability, particularly in the Indo-Pacific region.
- **Multilateral Cooperation:** India and Germany coordinate in global forums like the G20 and UN, support each other's bid for UNSC expansion through G4, and regularly consult on climate, development, and cyber issues.
- **Vocational Education:** India and Germany have collaborated on vocational training projects like IGnITE (Indo-German Initiative for Technical Education) and SINADE to boost skill mobility and income, through standardized global skill frameworks and dual training models.
- **Development Cooperation:** Germany has been a key development partner of India for over 60 years, contributing €24 billion in support by 2023. Under the Green and Sustainable Development Partnership (GSDP), Germany committed an additional €10 billion until 2030 for projects in green energy, urban development, climate action, and biodiversity. Key initiatives include the Nagpur Metro, Green Energy Corridors, and Kochi Water Transport.
- **Indian Diaspora:** As of December 2023, Germany is home to approximately 2.46 lakh people of Indian origin, including about 1.93 lakh Non-Resident Indians (NRIs) and Indian passport holders, and around 52,864 Persons of Indian Origin (PIOs).

Challenges in India-Germany Bilateral Relations

- **Trade and Investment Barriers:** Indian exporters face non-tariff barriers such as the Carbon Border Adjustment Mechanism (CBAM). German investments in India amounted to approximately €25 billion in 2022. In contrast, in 2023, Germany issued an investment guarantee worth €71 million for China.

- **Strategic Differences:** India's neutral stance on the Russia-Ukraine war contrasts with Germany's firm opposition to Russia, leading to occasional policy divergence.
- **China Factor:** Nearly half of German manufacturing firms rely directly or indirectly on Chinese intermediate goods. This limits its ability to back India's strategic concerns, unlike the U.S. and Japan within platforms like QUAD.
- **Human Rights Concerns:** German remarks on Kashmir, press freedom, and other internal issues often create diplomatic discomfort.
- **Limited Role in Asia:** Germany's geopolitical influence in Asia is minimal, unlike France or the UK, who maintain a strategic footprint in the region. This restricts the depth of India-Germany strategic ties.

Way Forward for India and Germany

- Build resilient supply chains and reduce dependence on China, supporting 'Make in India'.
- Fast-track the India-EU FTA to compete with China's dominant trade presence in Germany.
- Boost Germany's role in the Indo-Pacific through joint naval drills and infrastructure ties.
- Expand collaboration in green hydrogen, electric mobility, and renewables under GSDP.

India Canada Relations

Context: India-Canada relations have recently deteriorated due to allegations linking India to the killing of a Khalistani leader in Canada.

Recent India-Canada Developments (2023–2025)

- **Diplomatic Crisis:** India-Canada ties soured after the June 2023 killing of Khalistani activist Hardeep Singh Nijjar in Canada. Ottawa accused India of involvement, which New Delhi rejected as "absurd." Both nations expelled diplomats, suspended visa services, and halted CEPA trade talks.
- **Leadership Change & Reset:** In March 2025, Mark Carney became Prime Minister. Carney is expected to be pragmatic in his approach towards India. India, too, is optimistic about Carney's victory and is looking to mend the ties.

Overview of India Canada Relations

- **Political Relations:** India and Canada maintain a **Strategic Partnership** with Ministerial Dialogues covering foreign policy, trade, finance, and energy. Both share a seat at global high tables like G20. Moreover, Canada was one of the first countries to sign the Civil Nuclear Deal with India in 2010.
- **Commercial Relations:** India ranks as Canada's tenth-largest trading partner. Bilateral trade between the two has reached US\$ 8.37 billion in FY24 with trade balance in India's favour. Canada is the 18th largest foreign investor in India, with FDI investments totaling \$4 billion.
- **Cultural Relations:** The strength of the Indian diaspora in Canada is over 1.85 million (5.1% of the Canadian population). The number of Indians granted permanent residency in Canada has increased by 260% from 2013 to 2022.
- **Education and Tourism:** Nearly 37% of the total number of international students in Canada are from India. Canada is India's fourth-largest source of tourists, accounting for 5.3% of Foreign Tourist Arrivals in 2021.
- **Technological Cooperation:** Initiatives like IC-IMPACTS Canada-India Research Centre of Excellence foster research collaborations. In space, ISRO and the Canadian Space Agency collaborate on space exploration and satellite tracking.

Challenges in India Canada Relations

- **Growing Khalistani Influence:** The Khalistani movement has gained prominence in Canada due to the vocal Sikh diaspora and the spread of Khalistani propaganda online. India has criticized Canada for not taking stronger action against Canada-based Khalistan sympathizers. Sikhs For Justice (SFJ), an organisation banned by India has conducted Khalistan Referendums in Canada.

- **Trade Barriers:** The Comprehensive Economic Partnership Agreement talks have again stalled in the backdrop of allegations of Nijjar's killing. Moreover, Canada has concerns about India's restrictions on agricultural imports, particularly in pulses.
- **Human Rights Issues:** Canada has raised concerns about alleged human rights violations in India, particularly regarding the treatment of religious minorities like Sikhs and Muslims. India has voiced concerns about attacks on Hindu minorities in Canada. Exa. April 2025 attack on Laxmi Narayan temple.
- **Geopolitical Differences:** India and Canada have opposing viewpoints and interests on geopolitical issues such as Afghanistan, Ukraine- Russia War, etc. Also, during the G20 meeting in New Delhi, India and Canada did not engage in bilateral discussions.
- **Perceived Lack of Focus on India:** India has felt a perceived lack of prioritization from the Canadian government, which seemed to focus more on regions like the Asia- Pacific. This raised concerns in India, particularly regarding the emerging geopolitical importance of the Indo-Pacific region.

Way Forward

- India and the new administration in Canada must rebuild political trust through regular dialogue and Track II diplomacy.
- A balanced, diplomatic approach is essential to address the Khalistan issue.
- Resuming CEPA talks, lowering trade barriers, and boosting economic ties are key.
- Strategic cooperation in counterterrorism, the Indo-Pacific, and rule-based global order should be enhanced.

India Australia Relations

Context: PM Modi and Australian PM Albanese held the 2nd India-Australia Annual Summit on the sidelines of the G20 Summit in Rio.

About India Australia Bilateral Relations

- **Historical Background:** The historical ties between India and Australia began with European settlement in 1788, as the British East India Company controlled trade to Australia through Kolkata. Diplomatic relations were established pre-Independence with the India Trade Office in Sydney in 1941.
- **Political:** Post-independence, the relationship evolved from a Strategic Partnership in 2009 to a **Comprehensive Strategic Partnership (CSP)** in 2020, supported by various institutional mechanisms to promote cooperation. **2+2 Defense and Foreign Ministers' Dialogue** is one of the major mechanisms between the countries. A Civil Nuclear Cooperation Agreement between the two countries was signed in September 2014.
- **Trade:** India is Australia's fifth largest trading partner with two-way trade in goods and services valued at \$49.1 billion in 2023. In 2022, the Economic Cooperation and Trade Agreement (ECTA) was signed between India and Australia. As a result, India's exports to Australia grew by 66% in five years, almost double the global average
- **Defence Cooperation:** Both the countries have Mutual Logistics Support Agreement and officer exchange

Key Highlights of 2nd India-Australia Annual Summit

Economy & Trade:

- Boosted two-way trade under ECTA; committed to advancing CECA.
- Linked Make in India with Future Made in Australia.
- Extended the Australia-India Business Exchange (AIBX) for 4 more years.

Energy & Technology:

- Launched India-Australia Renewable Energy Partnership for solar, hydrogen, and storage.
- Strengthened critical minerals ties via MoU between KABIL and Australia's minerals office.
- Deepened space cooperation, including support for Gaganyaan and satellite launches.

Defence & Security:

- Renewing Joint Defence Declaration in 2025.
- Working on a maritime security roadmap and more defence industry collaboration.
- People-to-People & Education:
- Enhanced parliamentary ties and opened new consulates in Bengaluru and Brisbane.
- Promoted mobility through Working Holiday Visa and MATES scheme.

Future Plans:

- Agreed to deepen ties further.
- Will mark 5 years of the Comprehensive Strategic Partnership and hold the next summit in 2025.

programs. They conduct joint military exercises i.e- AUSINDEX, Milan, and Malabar.

- **Regional and Multilateral Cooperation:** Both India and Australia are members of the G-20, Commonwealth, IOR-ARC, ASEAN Regional Forum, Asia Pacific Partnership on Climate and Clean Development. Both are members of QUAD and have formed the Supply Chain Resilience Initiative (SCRI) along with Japan.
- **Science and Technology:** Formal cooperation in science and technology between Australia and India began in 1986 with the signing of an agreement by the two Governments. Australia-India Strategic Research Fund (AISRF) promotes collaboration on Science & Technology. For instance, Australia is supporting India's Gaganyaan Space Program.
- **Energy:** In February 2022, countries signed a Letter of Intent to reduce renewable energy costs, including ultra-low-cost solar and clean hydrogen. India provided AUD 10 million to Pacific Island Countries under the International Solar Alliance and committed USD 5.8 million to the three-year India-Australia Critical Minerals Investment Partnership.
- **People to People Ties:** People-to-people ties have expanded significantly in the 30 years since the launch of the Australia India Council. The Indian community in Australia is 9,76,000 strong in population. Australia has launched the Maitri Scholars Program, which will attract and support high achieving Indian students to study at Australian universities.

Challenges in the Relationship:

- **Limited Diversification of Trade:** The trade relationship is heavily reliant on Australian coal exports to India which accounts for 74% of Australia's overall exports to India. This makes it vulnerable to fluctuations in global coal prices and India's clean energy goals.
- **China Factor:** Both India and Australia see China as a strategic challenge, pushing them closer. However, Australia's significant trade ties with China as 25% of Australia's manufactured imports come from China, can create friction with India, which seeks to diversify its trade partnerships.
- **Russia Ukraine War:** India's ambivalent stance on the Russia-Ukraine crisis, despite Australia's criticism of the invasion and its support for the U.S. and western nations, could potentially lead to misunderstandings in bilateral discourse and QUAD functioning.
- **Quad Dynamics:** Though both the countries are partnering at platforms like QUAD, but there are divergences like India remains cautious about giving the Quad (US, Japan, Australia, India) a strong military and anti-China character, while Australia is more comfortable with a robust security alliance.
- **Different Strategic Priorities:** India is focused on continental threats from China and Pakistan. Australia is focused on maritime threats and restructuring its defence posture under AUKUS.
- **Adani Coal Mine Controversy:** The controversy surrounding the Adani coal mine project because of its sheer scale, and for the damage it will cause to the Great Barrier Reef, groundwater etc. has led to protests in Australia and can cause strains in the relationship.
- **Violence with Indian Diaspora:** The recent attacks on Indian Diaspora and Hindu temples by Khalistan supporters have strained relations. In the year 2007–2008, 1,447 Indians had been victims of crime including assaults and robberies in the state of Victoria in Australia.

Way Forward:

- **Economic Asymmetry:** Diversify trade beyond coal, focusing on clean energy and critical minerals.
- **Strategic Alignment:** Collaborate on shared security interests within the Quad framework.
- **Improve defense and maritime interoperability:** Enhance joint exercises and information sharing.
- **Coordinate in regional institutions:** Work together in forums like East Asia Summit for shared goals.

India Kuwait Relations

Context: Prime Minister Narendra Modi's recent visit to Kuwait marked a historic milestone in bilateral relations, as both nations elevated their ties to a Strategic Partnership.

- This was the first visit by an Indian PM to Kuwait since Indira Gandhi's visit in 1981.

- PM Modi was conferred with Kuwait's highest civilian honour, 'The Order of Mubarak Al Kabeer,' recognizing his efforts to deepen India-Kuwait relations.

Overview of Bilateral Relations

- **Political Relations:** India was among the first countries to establish diplomatic ties with Kuwait after its independence in 1961. Before this, India was represented by a Trade Commissioner. The Indian Rupee was legal tender in Kuwait until 1961, reflecting deep-rooted ties.
- **Commercial Relations:** India is consistently among Kuwait's top trading partners. Bilateral trade in FY 2024-25 stood at US\$10.22 billion. During FY 2024-25, Kuwait was the 6th largest Crude supplier and 5th largest supplier of LPG to India and it met about 3.5% of India's total energy needs.
- **Bilateral Investment:** Kuwait Investment Authority's investments in India exceed USD 10 billion.
- **Cultural Relations:** In 2021–22, over 200 cultural events were held to mark 60 years of diplomatic ties. A new Cultural Exchange Programme (CEP) was agreed upon.
- **Indian Community:** Approx. 1 million Indians live in Kuwait making them the largest expatriate group. Includes professionals (engineers, doctors, software experts), skilled workers, and a large semi-skilled/unskilled workforce.

Challenges in Bilateral Relations

- **Historical Sensitivities:** Historical events, such as India's stance during the Gulf War, have previously strained relations and continue to influence diplomatic perceptions.
- **Geopolitical Divergences:** The Middle East's persistent political tensions, including conflicts in the Gulf and crises in Yemen and Syria, create an unstable environment that affects both trade and the security of expatriates. Kuwait's diplomatic stances during regional crises sometimes diverge from India's non-interventionist approach.
- **Labour and Expatriate Issues:** Indian workers in Kuwait face labour rights violations and poor living conditions. The 2024 Mangaf fire, which killed 40 Indians, exposed serious safety concerns.
- **Narrow Economic Engagement:** The relationship is heavily centered on energy, with India relying on Kuwait for about 3.5% of its total energy needs. This dependence on oil imports creates vulnerability to price fluctuations and supply disruptions, while also contributing to a persistent trade deficit for India.

Addressing these challenges requires sustained high-level engagement, diversification of economic cooperation, and robust institutional mechanisms to protect mutual interests and the welfare of expatriate communities.

India Qatar Relations

Context: The Amir of the State of Qatar, Sheikh Tamim Bin Hamad Al-Thani paid a State Visit to India. During this visit, he held bilateral talks with PM Modi.

India – Qatar Bilateral Relation

- **Diplomatic Ties:** India and Qatar established diplomatic ties in 1973 and maintain embassies, with Qatar also having a consulate in Mumbai. Frequent high-level visits, including PM Modi's 2024 visit, have strengthened ties. In 2025, the relationship was elevated to a **strategic partnership**.
- **Bilateral Trade:** In 2023–24, India's bilateral trade with Qatar stood at USD 14.08 billion, with exports worth USD 1.7 billion and imports at USD 12.38 billion. India ranked among Qatar's top three export destinations and top four import sources.

Key Outcomes of the Visit

- **Strategic Partnership:** India and Qatar elevated their ties to a Strategic Partnership, placing Qatar alongside other key GCC partners like UAE and Saudi Arabia.
- **Trade Target:** Both countries aim to double bilateral trade from \$14 billion to **\$28 billion by 2030**.
- **Qatar's Investment:** Qatar pledged **\$10 billion** through its Sovereign Wealth Fund for Indian sectors like infrastructure, renewables, smart cities, AI, and start-ups.
- **FTA Talks:** Discussions were held on a possible India-Qatar Free Trade Agreement, alongside ongoing India-GCC FTA talks.
- **Financial & Digital Cooperation:** Qatar Investment Authority will open an office in India; UPI was launched at Qatar National Bank points, and QNB plans to expand into GIFT City.
- **Agreements Signed:** Two agreements and five MoUs were signed, covering trade, youth affairs, and double taxation avoidance.
- **Energy Security:** Qatar reaffirmed LNG supply to India —7.5 million tonnes annually for 20 years from 2028, via a deal between Qatar Energy and Petronet LNG.

- **Energy Cooperation:** Qatar is India's largest LNG supplier (42% in 2024) and a key player in India's spot market gas purchases, aiding India's goal to raise natural gas use to 15% of its energy mix by 2030.
- **Defence Cooperation:** The 2008 India-Qatar Defence Agreement, renewed in 2018, led to regular naval visits and joint maritime exercises, including two editions of Zair Al Bahr.
- **Diaspora:** Qatar is home to over 835,000 Indian nationals, constituting the largest expatriate community comprising 27% of the country's total population.

Challenges in India – Qatar Bilateral Relation

- **Trade Imbalance:** India's trade relationship with Qatar exhibits a notable trade imbalance skewed in favor of Qatar, primarily due to heavy reliance on Qatari imports. On other hand, India's exports to Qatar haven't diversified much, making them less competitive in the Qatari market.
- **Overdependence on Qatar for Energy Imports:** Qatar accounts for a substantial portion of India's LNG (48% of India's total imports) and LPG (29%) imports, exposing India to vulnerabilities such as supply disruptions, price volatility, and limited diversification.
- **Labour and Migrant Workers' Concerns:** Despite reforms in the Kafala System (requiring migrant workers to have an in-country sponsor responsible for their legal status), issues persist around the welfare of Indian migrant workers in Qatar. Concerns include working conditions, remuneration, and legal rights, occasionally causing diplomatic friction.
- **Cultural and Religious Sensitivities:** Cultural integration and understanding pose significant challenges, particularly given incidents like derogatory remarks about the Prophet on an Indian TV show, after which Qatar sought a public apology.
- **Geopolitical Dynamics:** India's ties with other Middle Eastern Countries don't always align with Qatar's alliances. For example, the 2017 blockade on Qatar by the Arab League led by Saudi Arabia strained India-Qatar relations due to disrupted trade.

India and Qatar should diversify energy ties through renewables and broader LNG partnerships, while collaborating on sustainability. Strengthening cultural exchanges and ensuring better protection for migrant workers will deepen ties. Expanding trade beyond energy and exploring new sectors can further boost bilateral cooperation.

India France Relations

Context: PM Modi's three-day visit in February 2024 to France strengthened bilateral cooperation in technology, nuclear energy, innovation, and sustainability.

Key Highlights of the Visit

- **AI and Digital Cooperation:** India and France committed to ethical AI development and signed a Letter of Intent to set up an Indo-French Center for Digital Sciences.
- **Innovation & Startups:** Launched the India-France Year of Innovation 2026 logo and agreed to host 10 Indian startups at Station F in Paris.
- **Nuclear Energy:** Renewed MoU on civil nuclear cooperation and signed agreements on advanced modular reactors and R&D collaboration between GCNEP (India) and INSTN (France).
- **Indo-Pacific Development:** Issued a joint declaration to support sustainable development in the Indo-Pacific through triangular cooperation.
- **Environmental Collaboration:** Signed an agreement to work on biodiversity, climate action, and sustainable growth.
- **New Consulate:** Inaugurated India's consulate in Marseille to boost diplomatic outreach.

Key Pillars of India-France Cooperation

- **Strategic Partnership:** Established in 1998, the India-France strategic partnership began with France becoming the first country to engage India post its nuclear declaration in May 1998. France also became the first P-5 country to support India's bid for a permanent seat in a reformed UN Security Council.

- **Defence Cooperation:** The 2006 Defence Cooperation Agreement, renewed in 2016, guides all defence ties, including joint military drills like Shakti-2024 and Garuda, equipment sales, and tech transfers. Major deals include Rafale jets and Scorpene submarines.
- **Economic and Trade Cooperation:** The bilateral trade between India and France has more than doubled in the last decade to \$15.11 Billion in 2023-24 from USD 6.4 Billion in 2009-10. France is India's 11th largest foreign investor, with cumulative FDI of USD 10.94 billion (1.61% of total inflows) from April 2000 to March 2024, as per DPIIT data.
- **Space Cooperation:** ISRO and CNES partner in research and satellite launches. A key example is the 2022 launch of GSAT-24 by NSIL aboard Ariane-5 from French Guiana.
- **Civil Nuclear Cooperation:** India and France signed a civil nuclear agreement in 2008. They collaborate on projects like the Jaitapur Power Plant and India's role in ITER, the fusion reactor project in France.
- **Culture and Tourism Cooperation:** Indo-French associations hold events across France, including the 2016 'Namaste France' festival. Around 6,000 Indian students study in France, with a goal to raise this to 30,000 by 2030. India is also promoted as a study destination for French students.
- **Climate Change and Sustainable Development:** In January 2024, both countries reaffirmed their climate commitment, including clean energy collaboration under the ISA. The 2022 Indo-French Green Hydrogen Roadmap highlights joint efforts in renewable energy development.
- **Indian Diaspora:** About 1.19 lakh Indians live in mainland France, mainly from Puducherry, Tamil Nadu, Gujarat, and Punjab. In overseas territories, Indian-origin populations include Reunion Island (3 lakh), Guadeloupe (57,000), Martinique (8,000), and Saint Martin (1,950).

Challenges in Relationship

- **Limited Trade:** India- France bilateral trade stands at US\$ 15 billion in 2023-24. Whereas, bilateral trade between France and China reached around US\$ 80 billion in the same year. This shows the untapped trade potential between the two countries. Furthermore, the stalled progress on the India-EU Broad based Trade and Investment agreement (BTIA) has prevented further deepening of India-France relations.
- **Slow Speed of Procurements and Projects:** In 2019, after a 12-year long procurement process, India received the first Rafale fighter jet in a ceremony in France attended by the Indian Defence Minister. Similarly, financing issues, liability questions and safety concerns are holding back the Jaitapur nuclear mega-project on the Indian Ocean for 15 long years.
- **Geopolitical Differences:** In 2017 President Macron welcomed the New Silk Roads Initiative and reasserted France's support to the Chinese project during his first trip to China, which is in contrast to the Indian view on BRI. Similarly, France has openly criticized the Russian Invasion in Ukraine whereas India has taken a nuanced approach.
- **Regulatory and Policy Differences:** Differences in regulatory frameworks and policies, particularly in areas like data privacy, digital trade, and intellectual property, can create friction. For example, for the Indian IT industry to keep continuing to do business in the EU, it needs to comply with the GDPR (General Data Protection Regulation).
- **Visa and Mobility Issues:** Visa restrictions and issues related to the mobility of professionals and students can affect people-to-people ties and educational exchanges. The Schengen area rejected 121,188 Indian visas in 2022. Data shows that the rejection rate stood at 18 per cent for Indian travelers.

To strengthen ties, India and France should boost strategic dialogue, fast-track defense and trade cooperation, and explore an FTA. Expanding collaboration in AI, clean energy, and education, easing visa norms, and aligning on climate and maritime issues will deepen ties. Greater multilateral cooperation can help address global challenges together.

India EU Relations

Context: A 22-member delegation of European Commissioners, led by EC President Ursula von der Leyen, visited India, coinciding with the 2nd India-EU Trade and Technology Council (TTC) ministerial meeting and bilateral talks.

Significance and Areas of Cooperation between India and the EU

- **Political:** India and the EU engage regularly through Foreign Ministers and secretarial consultations. The first Leaders' Meeting in 2021 included India's PM, all 27 EU member states, and EU Council and Commission Presidents. They collaborate in global forums like the UN, G20, WTO, and on regional issues in South Asia, the Indo-Pacific, and Africa.
- **Economic Relations:** In FY 2023–24, India-EU goods trade reached US\$135 billion (exports: \$76B; imports: \$59B), making the EU India's largest goods trading partner. Services trade hit a record US\$53 billion (exports: \$30B; imports: \$23B). The EU's share of foreign direct investment (FDI) stock in India reached €140.1 billion in 2023. The stock of India's FDI in the EU was €10.2 billion.
- **Science and Technology:** The India-EU Science & Technology Steering Committee meets yearly. The EU-India Science and Technology Alliance (IGSTA) promotes joint R&D in climate, energy, and health, offering funding and scientist exchanges.
- **Energy and Climate Change:** The 2016 EU-India Clean Energy and Climate Partnership (CECP) supports joint clean energy projects and R&D. The 2023 Hydrogen Coalition aims to advance a green hydrogen economy through collaborative technology development.
- **Education and Culture:** The EU-India Education Dialogue (since 2008) promotes policy sharing. Under Erasmus Mundus, 146 Indian students received EU scholarships in 2024, making India a top beneficiary.
- **Defense and Security:** India-EU holds regular dialogues on counterterrorism, maritime security, and defense. They participate in Asia-Europe Meeting (ASEM) (53 partners) and conduct naval cooperation against piracy and illegal fishing.
- **Indian Diaspora in EU:** As of 2021, 618,000 Indians legally resided in the EU, the 10th largest non-EU nationality. In 2022, 183,000 new permits were issued, mainly in Germany (35,800), Ireland (18,400), and Poland (17,200).

Key Outcomes of the Visit

- **Strategic Partnership Milestone:** Celebrated 20 years of the India-EU Strategic Partnership and 30 years of the Cooperation Agreement.
- **Sectoral Cooperation:**
 - **Trade:** Accelerated FTA, investment protection, and GI talks.
 - **Technology:** Partnerships in semiconductors, AI, 6G, and digital infrastructure.
 - **Green Energy:** Joint efforts in clean hydrogen, offshore wind, solar, and EV battery recycling.
 - **Connectivity:** Support for the India-Middle East-Europe Economic Corridor (IMEC).
- **Defence & Security:** Boosted maritime security and counter-terrorism cooperation; India expressed interest in joining PESCO and signing a Security of Information Agreement.

Challenges in the India and EU Relations

- **Limited Trade Diversification:** India's restrictive trade regime, along with non-tariff barriers like Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary (SPS) measures, hampers diversification. Over 90% of EU goods exports to India fall under just 20 product categories.
- **Political Issues:** The strategic partnership faces strain due to the CAA (2019) and the revocation of Articles 370 and 35A, which have raised human rights concerns among some EU members. This contrasts with the EU's limited criticism of China's actions in Xinjiang, Tibet, and Hong Kong.
- **Stalled Trade Negotiations:** The Broad-based Bilateral Trade and Investment Agreement (BTIA) negotiations, initiated in 2007, have been stagnant since 2013. This deadlock reflects broader issues in trade relations, including India's high tariff barriers, which the EU finds non-transparent and restrictive for trade facilitation.
- **Carbon Border Adjustment Mechanism (CBAM):** India fears CBAM could act as a new trade barrier. The mechanism is expected to impose a 25% tax on energy-intensive Indian exports to the EU, potentially impacting 0.05% of India's GDP (CSE).
- **Trade Imbalance:** India accounts for 2.4% of the EU's total trade in goods in 2024, well behind the USA (17.3%), China (14.6%). This disparity raises concerns about India's competitiveness and its economic relationship with the EU.

- **Intellectual Property Issues:** The EU has expressed concerns about India's intellectual property practices, particularly criticizing India's decision to issue a compulsory license for a cancer drug Nexavar, which it claims undermines patent rights.
- **Diplomacy:** India faced criticism for not condemning the Russia-Ukraine war and recent scrutiny by the EU Parliament over the situation in Manipur, which was seen as overstepping the EU's jurisdiction, according to Indian Foreign Secretary Vinay Kwatra.
- **Climate Change:** India and the EU differ on climate priorities-India focuses on development, while the EU emphasizes emission cuts. The EU has also yet to fulfill its \$100 billion annual pledge under the Paris Agreement to aid developing nations.

India and the EU must fast-track FTA talks. Trade reforms with predictable tariffs and open public procurement will boost investor confidence. Collaboration on green technologies can drive sustainable growth. Aligning labour laws with global standards will build mutual trust and support progress in trade negotiations.

India Mauritius Relations

Context: PM Modi visited Mauritius as Chief Guest on March 12, where both countries elevated ties to an Enhanced Strategic Partnership.

India–Mauritius Bilateral Ties

- **Development Cooperation:** India has extended over \$1.1 billion in aid over the past decade, including \$729 million in credit lines and \$427 million in grants for key projects like Metro Express, Supreme Court, ENT Hospital, and social housing units.
- **Disaster Response:** India has acted as a first responder during emergencies like the COVID-19 pandemic, Wakashio oil spill (2020), and Cyclone Chido (2024), using facilities in Agaléga to deliver rapid aid.
- **Trade and Investment:** India–Mauritius trade stood at USD 887 million in 2024–25. Mauritius has invested USD 177 billion in India since 2000, accounting for nearly 25% of total FDI inflows. India's first trade deal with an African nation, CECPA (2021), has boosted bilateral trade and investment ties.
- **Capacity Building & Education:** Around 4,000 Mauritians have been trained under India's ITC programme, and 2,300 Indian students study in Mauritius in fields like medicine, hospitality, and business.
- **Cultural and Historical Ties:** Over 68% of Mauritians are of Indian origin, descendants of indentured laborers. Mahatma Gandhi's 1901 visit inspired Mauritius' freedom movement; its National Day (March 12) coincides with Gandhi's Dandi March.

Key Outcomes of PM Modi's Mauritius Visit (March 2025)

- India and Mauritius elevated ties to an **Enhanced Strategic Partnership**, expanding cooperation in trade, defence, space, climate, and development
- Key Outcomes included:**
 - **Economic Ties:** Agreements on trade in local currencies, MSME cooperation, leveraging CECPA, and positioning Mauritius as India's gateway to Africa.
 - **Defence & Maritime Security:** Support for Coast Guard, EEZ protection, maritime data sharing, and launch of the MAHASAGAR Vision building on SAGAR.
 - **Development Support:** India pledged aid for Parliament building, education, healthcare, UPI/Rupay rollout, and electric buses through INR credit lines.
 - **Space & Climate:** Launch of India-Mauritius satellite, disaster preparedness aid, and ISRO-led scientific collaboration.
 - **Health & Education:** Expansion of Jan Aushadhi Kendras, Ayush Centre, and drug rehabilitation support.
 - **Diplomatic Support:** Reaffirmation of Mauritius' sovereignty over Chagos Islands and backing of talks with the UK.
 - **Cultural Ties:** Promotion of Ramayana Trail, Char Dham Yatra access, AI collaboration, and inauguration of public service institute.

Challenges in India–Mauritius Relations

- **Geopolitical Competition:** Mauritius balances ties with China, Europe, Gulf nations, and Russia. China's growing infrastructure investments challenge India's traditional strategic influence in the region.

- **Declining FDI and Trade Issues:** FDI from Mauritius to India has declined due to tax treaty revisions and regulatory changes.
- **Maritime Security Threats:** Rising piracy, drug trafficking, and illegal fishing in the Indian Ocean-often involving Mauritius-threaten regional stability and demand stronger Indo-Mauritian maritime cooperation.
- **Project Implementation Delays:** India-funded projects, like Metro Express, have faced bureaucratic delays, impacting perceptions of India's efficiency in delivering timely development support.
- **Over-Dependence on India:** Heavy reliance on Indian aid has raised concerns in Mauritius, prompting efforts to diversify external partnerships and reduce dependency.
- **Chagos Islands Dispute:** India's initially cautious stance on the Chagos issue caused disappointment in Mauritius, which expected stronger diplomatic backing in global forums.
- **Political Transitions:** Frequent leadership changes in Mauritius require India to maintain neutral, adaptive diplomacy to avoid aligning with specific political factions.

India's steady development support and timely crisis response have strengthened its image as a trusted partner. While Mauritius engages with multiple global powers, it values India's consistent backing for its sovereignty and autonomy. The Prime Minister's visit reaffirms India's commitment to deepening this unique, multi-faceted partnership regionally and globally.

India and Russia in Arctic

Context: At India-Russia Arctic conference, Russia's Ambassador highlighted India's stabilizing role amid NATO militarization. The event was hosted by Vivekananda Foundation and Russia's Northern Forum.

India's Strategic and Economic Interests in the Arctic

- **Scientific and Environmental Research:** India has long participated in Arctic research on climate change, glaciers, and atmospheric studies. The 2022 Arctic Policy of India emphasizes sustainability, environmental protection, and international cooperation in scientific exploration.
- **Energy Security and Resource Access:** The Arctic is estimated to hold approximately 13% of the world's undiscovered conventional oil resources, according to the U.S. Geological Survey. India seeks to diversify its energy imports and secure Arctic resources to fuel domestic growth.
- **Commercial and Trade Opportunities:** India supports the development of the Northern Sea Route (NSR) to gain faster, cost-effective access to European markets. The International North-South Transport Corridor (INSTC), if connected to the NSR and Russia's Unified Deep-Water System (UDWS), could revolutionize trade by linking India with Europe and Arctic resource hubs. The Chennai-Vladivostok Maritime Corridor is also expected to cut shipping times and deepen India-Russia economic cooperation.
- **Strategic Counterbalance to China:** China's aggressive Arctic push via its Polar Silk Road-with over \$10 billion invested-is viewed as a threat to India's strategic space. China may bypass the Malacca Strait using new Arctic routes, undermining India's maritime strategy of blocking Chinese supplies during conflict.
- **Geopolitical Autonomy and Partnerships:** The Arctic is emerging as a new zone of great power competition. India's presence offers it a chance to assert strategic autonomy, engage in multilateral governance, and diversify partnerships beyond China and the West.



Russia's Interests in Partnering with India in the Arctic

- **Diversifying Partnerships Beyond China:** India offers Russia a chance to reduce dependence on China, whose Arctic footprint is growing. India's limited regional ambitions make it a non-threatening partner to Russia's dominance.

- **Attracting Investment and Development Support:** Russia needs partners to invest in Arctic infrastructure and energy. While India's funding is modest compared to China, its involvement supports Moscow's development goals and adds diplomatic value.
- **Stabilizing Underdeveloped Arctic Regions:** Russia's Arctic regions remain underdeveloped and sparsely populated, posing security risks. India's engagement can aid economic growth and reduce vulnerabilities to foreign exploitation.
- **Shared Strategic Worldview:** India and Russia share strong ties and a mutual respect for sovereignty. India's balanced stance and global image make it a more acceptable partner than China in Arctic geopolitics.
- **Geopolitical Leverage:** India's Arctic role helps Russia balance China's influence and may improve Russia's ties with the West. India's rising global profile offers Russia a valuable diplomatic intermediary.

India's Presence in the Arctic

- **Historical Role:** India signed the Svalbard Treaty in 1920 and released its Arctic Policy in 2022, focused on science, sustainability, and cooperation.
- **Research Stations:**
 - **Himadri (2008) in Svalbard:** India's first Arctic research station.
 - **IndArc (2014):** Underwater observatory for ocean studies.
 - **Atmospheric Lab (2016):** Northernmost lab at Gurebadet.
- **First Winter Expedition:** Launched in 2023 for polar night studies.
- **Research Focus:** Climate impacts on monsoons and Himalayas, cryosphere, marine and space sciences.

Challenge India faces in the Arctic:

- **Limited Strategic and Military Presence:** India lacks Arctic military engagement and is not part of any security alliance like NATO. It hasn't participated in exercises or sent military vessels to Arctic waters, limiting its strategic influence.
- **Lack of Infrastructure and Polar Capabilities:** India has no polar-class icebreaker, restricting year-round operations. Its Arctic research depends on partner countries, limiting independence and continuity.
- **Geopolitical Constraints:** Balancing ties with Russia, the West, and managing China's rise is complex. Support for Russia may strain relations with Arctic states like Norway and Canada.
- **Exclusion from Arctic Governance:** India isn't part of Arctic Council decision-making. Territorial Arctic states resist non-Arctic influence, limiting India's ability to shape governance.
- **Competing with China:** China has more investment, icebreakers, and Arctic presence. India lags behind in visibility and funding, weakening its counter to China's regional influence.
- **Environmental and Operational Challenges:** Harsh Arctic conditions make operations risky and costly. India needs better research tools, logistics, and expertise for sustainable engagement.
- **Policy and Institutional Gaps:** India's Arctic Policy lacks funding, a clear roadmap, and coordination among ministries. No dedicated Arctic agency hinders consistent action and planning.

Way Forward for India

- **Align Arctic Strategy with Indo-Pacific Vision:** Promote openness, multilateralism, and stability in the Arctic, through partnerships with like-minded nations.
- **Strengthen Economic and Security Ties with Europe:** Deepen engagement with Nordic countries to reduce reliance on Russia and counterbalance China's growing Arctic role.
- **Reduce Defence Dependence on Russia:** Broaden defence ties with Western nations to protect strategic autonomy and boost India's global credibility.

India's growing Arctic engagement must be strategic, science-driven, and multilateral. A balanced policy will enhance its global standing and safeguard long-term national interests.

India Saudi Arabia Relations

Context: PM Modi made his third state visit to Saudi Arabia, following Crown Prince Salman's 2023 India visit for the G20 and Strategic Partnership Council (SPC) meeting.

Key Highlights of the Visit

- PM Modi and Crown Prince Salman co-chaired the **2nd Strategic Partnership Council (SPC) meeting in Jeddah**.
- Two new committees were launched - for Defence Cooperation and Tourism & Culture - to enhance collaboration.
- Saudi Arabia reaffirmed its **USD 100 billion investment plan in India**, with key progress on two upcoming refineries.
- Several MoUs were signed, including space cooperation between the Saudi Space Agency and India's Department of Space, collaboration between the two health ministries, and a postal agreement for inward parcel services between Saudi Post and India Post.

Overview of India–Saudi Arabia Relations

- **Diplomatic and Strategic Relations:** India and Saudi Arabia established diplomatic ties in 1947. Key milestones include: Delhi Declaration (2006) and Riyadh Declaration (2010) during, elevating ties to a Strategic Partnership. In 2019, PM Modi's visit led to the formation of the Strategic Partnership Council (SPC).
- **Economic Cooperation:** India is Saudi Arabia's 2nd largest trading partner, while Saudi Arabia is India's 5th largest. In FY 2024-25, bilateral trade reached USD 41.8 billion, with trade balance in Saudi Arabia's favour. Saudi Arabia has invested USD 10 billion in India, while Indian investments in Saudi Arabia total around USD 3 billion.
- **Energy Partnership:** In FY 2023–24, Saudi Arabia was India's 3rd largest source of crude oil (33.35 MMT, 14.3% of total imports) and LPG (18.2% of total imports).
- **Defence and Security Cooperation:** India–Saudi defence ties have grown with high-level visits, joint exercises like Al Mohed Al Hindi and EX-SADA TANSEEQ, and a USD 225 million ammunition export deal (2024). A Defence Cooperation Committee was launched under SPC in 2025.
- **Cultural and People-to-People Ties:** India and Saudi Arabia signed the Bilateral Haj Agreement 2024, with a quota of 1.75 lakh Indian pilgrims, including women without Mehram. Yoga has gained popularity in Saudi Arabia, with Ms. Nouf Al-Marwaai receiving the Padma Shri in 2018. The 2.7 million-strong Indian community in Saudi Arabia is the largest expatriate group and is highly regarded.

Significance for India

- Saudi Arabia is a key energy supplier and an important investor in India's economy.
- It plays a role in regional stability and supports India on counter-terrorism.
- India also seeks to leverage Khaliji capital, including Saudi Arabia's Public Investment Fund (PIF), and benefit from deeper economic, defence, and cultural ties.

Significance for Saudi Arabia

- India supports Saudi Arabia's Vision 2030 by offering a large market, skilled workforce, and investment opportunities.
- Indian companies contribute in sectors like IT, construction, and pharmaceuticals.
- As Saudi Arabia diversifies its economy, India is seen as a strategic partner in that transformation journey.

Key Challenges in India–Saudi Arabia Relations

- **Labour Welfare:** Indian workers in Saudi Arabia often face poor working conditions, wage delays, and exploitation, especially among blue-collar labourers. The Kafala system ties workers' legal status to employers, limits their legal rights and social protection.
- **Saudization Policy:** Saudi Arabia's policy mandating local hiring quotas reduces employment opportunities for Indian expatriates across key sectors.
- **Trade Imbalance:** In FY 2023–24, India's trade deficit with Saudi Arabia was nearly USD 20 billion, driven by heavy oil imports.
- **Oil Dependency:** India's reliance on Saudi oil makes bilateral trade vulnerable to global crude price volatility, further widening the trade deficit.
- **Delays in Strategic Projects:** The \$50 billion West Coast refinery project, involving Saudi Aramco, faces delays due to land acquisition and environmental clearance issues in Maharashtra.

- **Stalled FTA Negotiations:** The Free Trade Agreement between India and the GCC, including Saudi Arabia, remains unresolved since 2004, slowing trade expansion.
- **Saudi Ties with China and Pakistan:** Saudi Arabia's growing economic support to Pakistan creates friction, given India's security and strategic concerns in the region. Strengthening relations with China challenges India's efforts to maintain strategic alignment in West Asia.
- **Saudi-Iran Rivalry:** India's balanced relations with both Saudi Arabia and Iran are tested by their ongoing regional rivalry and competing interests.

To deepen ties, India and Saudi Arabia must leverage synergies in green energy, digital innovation, and strategic connectivity. Collaborating on solar power, AI, and the India-Middle East Economic Corridor can reshape regional trade and sustainability. Strengthened engagement through GCC platforms will further enhance stability and long-term strategic cooperation in West Asia.

India UK Relations

Context: India and the United Kingdom have concluded negotiations on a Free Trade Agreement (FTA) after three years of formal talks.

Key Features of the FTA

- **Scope:** The FTA comprises 27 chapters, including areas like digital trade and environment.
- **Market Access:** Around 99% of Indian exports will get zero-duty access to the UK, covering nearly all trade value. India will cut tariffs on 90% of British goods, and over the next 10 years, 85% of UK products will become tariff-free in India.
- **Services and Mobility:** Eases mobility for Indian professionals-including business visitors, investors, service suppliers, yoga instructors, and intra-corporate transferees. The UK has made ambitious commitments in sectors like IT, finance, professional services, and education.
- **Public Procurement:** UK firms can now participate in Indian public procurement for a wide range of goods and services under central and state-owned enterprises.

Key Issues Faced During FTA Negotiations

- **Limited Trade Advantage for India:** The Global Trade Research Initiative (GTRI) noted that many Indian products already enter the UK with low or zero tariffs. As a result, the FTA may not significantly boost India's exports.
- **Concerns over Services and Work Visas:** India sought greater access for its professionals, especially in sectors like IT and healthcare. However, post-Brexit immigration is a politically sensitive topic for the UK. In the final deal, only about 100 additional work visas per year were granted for Indian professionals.
- **Disagreement over Carbon Tax:** The UK proposed a carbon tax on metal imports based on their carbon emissions. This raised concerns for Indian exporters, especially in steel and aluminum-as it could affect their competitiveness in the UK market.

Overview of India United Kingdom Relations

- India and the UK share profound historical ties, maintaining friendly relations since India gained independence. India's multifaceted bilateral relationship with the UK intensified with its up-gradation to a Strategic Partnership in 2004.
- **Trade:** India-UK bilateral trade increased to US\$23 billion in 2024-25 from US\$17.5 billion in 2021-22. India maintains a trade surplus with the UK. India is the UK's **7th largest export destination** and **2nd biggest FDI investor**. The Free Trade Agreement between the two countries is projected to increase annual bilateral trade by £25.5 billion from 204.
- **Defence and Security:** The two countries have a robust Defence and International Security Partnership (DISP), which includes regular joint military exercises like Konkan Shakti. The UK has also committed to deploying a Carrier Strike Group to the Indo-Pacific region in 2025 to train and increase interoperability with India.

- **Science, Technology and Innovation:** The UK-India Education and Research Initiative and UK Research and Innovation (UKRI) programmes facilitate collaboration in areas like nanotechnology, biotechnology, telecommunications, solar energy and weather forecasting. The two countries have co-invested over £150 million in joint research activities.
- **Climate Change and Clean Energy:** The India-UK Ministerial Energy Dialogue and the India-UK Green Growth Equity Fund focus on attracting institutional investments in sustainable technologies. Global Green Grids initiative aims to promote green projects and renewable energy in India, supported by the UK government's \$1.2 billion investment package.
- **Cultural Linkages:** The Nehru Centre in the UK actively promotes Indian culture, and 2017 was celebrated as the India-UK Year of Culture. The large Indian diaspora in the UK, numbering over 1.7 million, contributes 6% to its GDP.
- **Medical Collaboration:** India supplies over 50% of the world's vaccines and 25% of Britain's National Health Service's generic drugs.

Issues and Challenges

- **Colonial Legacy and Anti-Colonial Resentment:** India's post-colonial relationship with Britain has been marked by lingering resentments stemming from the colonial era. The legacy of Partition, Cold War alignments, and more recently, disagreements on global issues such as the Russia–Ukraine conflict, have further complicated efforts to build a stable and forward-looking partnership.
- **British Intervention in India's Domestic Affairs:** The UK has intervened in India's domestic politics on several occasions such as taking positions on issues like Kashmir, CAA, Farmer Protests. This has raised concerns in India about British intentions.
- **Migration and Mobility:** There are over 1 lakh illegal Indian immigrants in the UK, and the UK government has put pressure on India to take them back. However, India and the UK have not yet signed a migration and mobility agreement.
- **Extradition of Economic Offenders:** The issue concerns the extradition of Economic Offenders, such as Vijay Mallya, who are seeking refuge in Britain and exploiting the legal system, despite clear Indian cases requiring their extradition.
- **Closeness to Pakistan and China:** The UK's historical support for Pakistan and its recent efforts to enhance economic relations with China have added complexity to its relationship with India. While countries such as the US and France have distanced themselves from Pakistan since the Cold War era, the UK has not followed suit.
- **Diego Garcia and Mauritius:** The dispute over the sovereignty of Diego Garcia between the UK and Mauritius, with India supporting Mauritius' claim, has been a point of contention in India-UK relations.

India and the UK are deepening their strategic partnership through a landmark FTA, boosting trade, innovation, and mobility. Shared democratic values, economic convergence, and collaboration in key sectors promise a forward-looking, mutually beneficial relationship in a changing global order.

India USA Relations

Context: India and the U.S. agreed to expand strategic ties, with the U.S. announcing plans to offer F-35 fighter jets and boost military exports to India during the US visit of PM Modi.

Overview of India-US Relationship

- **Economic Relations:** India-US Trade stands at \$131.8 Billion as of 2024-25. The US is India's largest destination for merchandise exports. India has joined three key pillars of the US-led Indo-Pacific Economic Framework (IPEF) to enhance economic integration.
- **Global Strategic Influence:** Through platforms like the Quad, India and the US collaborate with Australia and Japan to promote a free and prosperous Indo-Pacific. These strategic initiatives aim to counterbalance China's growing regional influence.

- **Defense:** India has signed key foundational defense agreements with the US, including GSOMIA, LEMOA, COMCASA, and BECA. The US has designated India as a Major Defense Partner and granted it Strategic Trade Authorization-1 (STA-1) status.
- **Energy Security:** U.S.-designed nuclear reactors will be built in India under the 2008 U.S.-India Civil Nuclear Agreement. The US has become one of the largest suppliers of liquefied natural gas (LNG) to India in recent years.
- **Emerging Technologies:** The US and India launched the Initiative on Critical and Emerging Technologies (iCET) in 2023 to drive innovation.
- **Space Outreach:** The two nations are jointly developing the NISAR (NASA-ISRO Synthetic Aperture Radar) satellite mission. India has also joined the US-led Artemis Accords to promote responsible space exploration.
- **Countering Terrorism:** The US recently approved the extradition of Tahawwur Rana to India for his alleged role in the 26/11 attacks.
- **Support at Multilateral Forums:** The US backs India's bid for permanent membership in the UN Security Council and the Nuclear Suppliers Group. It also supports India's full membership in the International Energy Agency.
- **Climate Change & Renewable Energy:** The US has joined the India-led International Solar Alliance to accelerate clean energy adoption. Both countries launched the US-India Renewable Energy Technology Action Platform (RETAP). They are also partners in the Global Biofuels Alliance (GBA).

Challenges in India - US Ties

- **Geopolitical and Strategic Differences:** India's ties with Russia and independent foreign policy, including oil imports and defense deals, often clash with U.S. expectations. India's neutral stance on Ukraine and engagement with Iran and Venezuela create further diplomatic friction.
- **Trade and Economic Disputes:** Persistent issues such as trade imbalances, tariff disagreements, and India's removal from the U.S. Generalized System of Preferences (GSP) in 2019 continue to affect relations. The 2025 Special 301 Report places India on the Priority Watch List due to concerns over intellectual property protection. Additionally, India's data localization policy clashes with U.S. calls for unrestricted cross-border data flows.
- **Defense and Security Concerns:** India's purchase of Russian S-400 missiles risks U.S. sanctions under CAATSA. Delays and regulatory challenges in defense procurement hinder deeper defense collaboration, despite strong strategic alignment and shared interests in Indo-Pacific security.
- **Human Rights and Democracy Issues:** U.S. criticism of religious freedom, press rights, and the Citizenship Amendment Act is seen by India as external interference. Comments on political arrests and democratic backsliding further strain diplomatic relations between both nations.

Key Outcomes of US Visit

Defence & Security

- **10-Year Defense Partnership Framework:** India and the U.S. proposed a new 10-year plan to deepen their Major Defense Partnership.
- **Autonomous Systems Industry Alliance (ASIA):** Launched to expand industrial partnerships and defense production across the Indo-Pacific region.
- **Joint Defense Production:** New co-production agreements announced for Javelin anti-tank guided missiles and Stryker infantry combat vehicles to be manufactured in India.

Technology and Innovation

- **U.S.-India TRUST Initiative:** A new strategic initiative to boost collaboration between governments, academia, and the private sector in critical and emerging technologies, especially in defense.
- **INDUS Innovation:** Modeled on the INDUS-X platform, this program will strengthen U.S.-India industry-academia partnerships and increase investments in sectors like space and energy.
- **Strategic Mineral Recovery Initiative:** A bilateral program to recover and process key minerals such as lithium, cobalt, and rare earths from industries like aluminum, coal, and oil & gas.

Economic & Strategic Cooperation

- **U.S.-India COMPACT:** A strategic framework to fast-track military cooperation, commerce, and advanced technologies, highlighting mutual trust.
- **Indian Ocean Strategic Venture:** A new bilateral forum for promoting coordinated investments in regional economic connectivity and maritime commerce.
- **Mission 500:** A joint target to raise bilateral trade volume to \$500 billion by 2030.

- **Immigration and Mobility Issues:** Tighter U.S. visa rules, especially for H-1B, affect Indian tech workers and bilateral mobility. Recent deportation of undocumented Indian immigrants also creates tension, impacting people-to-people ties and professional exchange.
- **Recent Diplomatic Incidents:** Accusations linking Indian officials to plots targeting Khalistani separatists abroad have strained diplomatic and intelligence cooperation. Increased activism and legal proceedings in the U.S. have added to mutual suspicion.
- **Multilateral and Regulatory Frictions:** India and the U.S. differ on WTO issues like subsidy limits, patent waivers, and developing country status. India's Atmanirbhar Bharat policies are seen by the U.S. as protectionist and harmful to American business access.

To further strengthen the India-U.S. partnership, both countries must finalize a Bilateral Trade Agreement and a new 10-year defense framework. Easing H-1B visa rules, resolving CAATSA concerns, respecting domestic sensitivities, and enhancing cooperation in emerging technologies like AI will deepen trust and advance shared strategic interests.

Groupings and Multi-Lateral Institutions (MLIs)

G20

Context: The 19th G20 Summit was held in Rio de Janeiro under Brazil's presidency, with the theme "*Building a Just World and a Sustainable Planet.*" PM Modi represented India and addressed issues like social inclusion, hunger, and poverty.

Key Highlights of the G20 Rio de Janeiro Leaders' Declaration

- **Taxation:** Advocates for taxing the super-rich while respecting national fiscal sovereignty. Brazil proposed a 2% global tax on billionaires to address wealth inequality and fund sustainable development.
- **Multilateralism:** Emphasizes the need for greater representation of underrepresented regions in the UN Security Council.
- **Social Inclusion:** Commits to promoting gender equality in both paid employment and unpaid care work.
- **Climate Action:** Supports inclusive, technology-neutral pathways to low-emission energy. However, it does not advance beyond the G20 New Delhi Declaration. Details on climate finance (especially sources for scaling from billions to trillions) remain vague.
- **Global Trade:** Reaffirms commitment to avoid discriminatory green economic policies.
- **Global Health:** Pledges to improve equitable access to vaccines, therapeutics, and health technologies.
- **Brazil's Presidency Initiatives:** Launched the Global Alliance against Hunger and Poverty. Established a Task Force for Global Mobilization against Climate Change.

About G20

- The G20 was established in 1999 as a meeting of finance ministers and central bank governors from 19 countries and the European Union.
- It was elevated to a summit-level forum of Heads of State/Government in 2008 in response to the global financial crisis.
- The G20 is a non-binding forum. It does not pass laws, but its decisions influence international economic and policy cooperation.
- The African Union joined as the 21st member at the 2023 summit in India.

Key Challenges Facing the G20

- **Lack of Institutional Framework:** The G20 is a forum without a formal charter or binding decisions, limiting its accountability and impact.
- **Global South:** The forum's refusal to rename itself "G21" after the African Union's inclusion highlights ongoing underrepresentation of the Global South.

- **Diplomatic Fragmentation:** Internal rifts such as Argentina's policy stances and opposition to wealth taxes by wealthy countries, undermine consensus and action.
- **Unrealized Governance Reforms:** Despite calls, reforms of global bodies like the UN and World Bank remain largely unfulfilled, weakening G20's reform credibility.
- **Climate Action Falling Short:** No major progress on climate finance or emission goals; past promises remain unmet amid lack of unity.
- **Failure to Set Clear Priorities:** G20 agendas are too broad, making it hard to focus on or deliver concrete outcomes.
- **Rise of Competing Blocs:** Groups like BRICS and SCO are rising as alternative platforms, challenging G20's influence and unity.

The G20 stands at a crossroads. It can either evolve into a credible platform for global cooperation or fade into irrelevance amidst rising global fragmentation and alternative institutions. For the G20 to truly serve the world, it must move from symbolic summits to bold structural reform and collective action.

G20 and India A Platform for Global Leadership

- **India's Global Leadership:** India's G20 presidency marked a shift from being just a participant to becoming a leader in global discussions. It played a key role in mediating between developed and developing countries, especially during global tensions like the Russia-Ukraine war.
- **Key Priorities Highlighted by India:**
 - **Climate and Green Development:** Promoted sustainable lifestyles and fair energy transitions (e.g., LiFE initiative).
 - **Inclusive Growth:** Supported small businesses, labor rights, and resilient food systems.
 - **SDGs:** Focused on poverty reduction, education, and health.
 - **Digital Infrastructure:** Showcased tools like Aadhaar and UPI to promote digital inclusion.
- **Voice for the Global South:** India used its role to amplify the needs of less-represented countries. It supported African Union's inclusion in G20 and advocated for food security, debt relief, and pandemic recovery.
- **Economic and Strategic Benefits:** The presidency attracted foreign investment, opened new trade avenues, and positioned India as a manufacturing and innovation hub. It also spotlighted India's shift to a digital and formal economy.
- **Domestic Impact:** Hosting over 200 events across the country strengthened unity and showcased India's cultural diversity. It boosted local infrastructure and supported long-term development goals like smart cities and urban growth.

BRICS

Context: PM Modi attended the 16th BRICS Summit in Kazan, hosted by Russian President Putin, and adopted the **Kazan Declaration** to enhance cooperation and address global challenges.

About BRICS

- The term "BRICs" was coined in 2001 by British economist Jim O'Neill to describe the rising economic powers: Brazil, Russia, India, and China.
- BRIC emerged as a formal group during the G8 Outreach Summit in 2006. The first BRIC Summit was held in Russia in 2009. South Africa joined in 2010, making it BRICS.
- **Members (10 Total):**
 - **Founding Members (BRICS):** Brazil, Russia, India, China, South Africa
 - **New Members (BRICS+):** Egypt, Ethiopia, Iran, United Arab Emirates, Indonesia, Saudi Arabia (*invited*)
- Together, BRICS now represents approximately 45% of the global

Key Highlights of the Kazan Declaration – 16th BRICS Summit

- **On Ukraine:** BRICS emphasized the need to uphold the UN Charter and supported peaceful dialogue to resolve the Ukraine conflict.
- **Middle East Crisis:** Expressed concern over the humanitarian crisis in Palestinian territories and condemned the violence in Gaza and the West Bank.
- **Western Sanctions:** Criticized unilateral sanctions for harming global trade, economic stability, and SDG progress.
- **Reform of Financial System:** Called for a more inclusive and fair international financial architecture to address modern global challenges.
- **BRICS Grain Exchange:** Supported Russia's proposal for a grain exchange to facilitate agricultural trade among member countries.
- **Cross-Border Payments:** Backed the creation of a low-cost, inclusive payment system using local currencies to boost intra-BRICS trade.
- **BRICS Clear Depository:** Proposed setting up an independent settlement and depository system (BRICS Clear), including a voluntary BRICS Reinsurance Company.
- **Financial Innovation:** Encouraged the use of local currencies and innovative finance mechanisms via the BRICS Interbank Cooperation Mechanism.
- **On the IMF:** Reiterated support for a well-funded, quota-based IMF as part of a strong Global Financial Safety Net.
- **On the G20:** Advocated for a consensus-driven and effective G20 to address global economic challenges.
- **Pandemic Prevention:** Supported BRICS R&D Vaccine Center and the BRICS Early Warning System to tackle future infectious disease threats.
- **Big Cat Conservation:** Welcomed India's initiative for an **International Big Cats Alliance** to protect endangered big cat species.

population and 37.3% of the world's GDP, a significant share when compared to the European Union's (14.5% of global GDP) and the G7 (29.3% of global GDP).

- **Three Pillars of BRICS Cooperation:** Political and Security Cooperation; Economic and Financial Cooperation; Cultural and People-to-People Exchanges

Key Achievements of BRICS

- **Economic Cooperation:** BRICS has promoted greater trade and investment among member countries, significantly boosting intra-BRICS commerce. Their global exports increased from USD 493.9 billion in 2001 to approximately USD 4,651.6 billion in 2021.
- **New Development Bank (NDB):** Established in 2014 with \$100 billion capital to fund infrastructure and sustainable development in BRICS and developing nations.
- **Contingent Reserve Arrangement (CRA):** A \$100 billion reserve pool created to support members facing short-term financial crises and protect against economic shocks.
- **Political and Global Influence:** BRICS advocates for reforms in global institutions like the UN, IMF, and World Bank to better represent developing nations.
- **Technical and Scientific Collaboration:** Programs like the BRICS Innovation Framework have led to cooperation in science, health, agriculture, and disaster management.

Challenges Faced by BRICS

- **Economic Inequality Within BRICS:** BRICS nations vary in development levels, India's per capita income (\$2,880) trails behind China (\$12,175) and Russia (\$8,179). This highlights disparities that hinder consensus-building.
- **Underutilisation of Economic Potential:** Despite making up 18% of global trade, intra-BRICS trade remains low at only 2.2% (2022).
- **Delayed Initiatives:** The proposed BRICS Credit Rating Agency (CrRA) in 2018 was dropped due to internal disagreements. Talks of a common BRICS+ currency face skepticism, especially after the group's expansion.
- **Limited Influence in Global Financial Institutions:** BRICS+ countries hold only 19% voting power in the International Bank for Reconstruction and Development (IBRD), compared to 40% by G7 and 23% by the EU.
- **Geopolitical Tensions:** Rivalries, especially between China and India, including border disputes, sometimes strain the unity of the group and affect cooperation.
- **Differing WorldView Within the Group:** China and Russia view the West with growing mistrust due to tensions like the Ukraine war and US-China disputes. India, in contrast, is strengthening economic and tech ties with the US.
- **Limited Institutional Reform:** Although BRICS supports a more balanced global order, efforts to reform bodies like the UN and IMF have seen limited progress due to resistance from existing power structures.
- **China's Dominant Role:** As the largest economy in BRICS, China holds significant influence, which can create power imbalances and raise concerns among smaller members.

BRICS must move from being a symbolic counterweight to Western dominance to becoming a credible force for global change. BRICS must move from being a symbolic counterweight to Western dominance to becoming a credible force for global change.

ASEAN - India Summit

Context: The 21st ASEAN-India Summit in Laos marked 10 years of India's Act East Policy. PM Modi joined ASEAN leaders to review ties and plan future cooperation.

About Association of Southeast Asian Nations (ASEAN)

- The ASEAN is a regional intergovernmental organization established on August 8, 1967, in Bangkok, Thailand.
- Its founding members were **Indonesia, Malaysia, the Philippines, Singapore, and Thailand**, with the primary goal of promoting economic growth, social progress, and cultural development while ensuring regional peace and stability.

- Over the years, ASEAN has expanded to include **Brunei, Vietnam, Laos, Myanmar, and Cambodia**.
- **India** is part of the **ASEAN Plus Six** grouping, which includes China, Japan, South Korea, New Zealand and Australia as well.

India ASEAN Areas of Cooperation

- **Political Cooperation:** India and ASEAN hold annual summits. Their formal engagement began as a "Sectoral Dialogue Partner" in 1992, became a "Dialogue Partner" in 1996, and was upgraded to the Summit level in 2002.
- **Trade and Investment:** India and ASEAN have signed a Free Trade Agreement (FTA) in 2009. ASEAN accounts for 11% of India's global trade. In 2023-24, bilateral trade between the two sides was around \$120.88 billion. India has a trade deficit of \$38.46 billion with ASEAN.
- **Regional Connectivity:** India is working on projects to improve connectivity with ASEAN, including the India-Myanmar-Thailand (IMT) Trilateral Highway and Kaladan Multimodal Transit Transport Project.
- **Defense and Security:** India and ASEAN collaborate on defense through joint military exercises, such as the ASEAN-India Maritime Exercise, and participate in the ASEAN Defense Ministers' Meeting Plus (ADMM+). India's Indo-Pacific vision includes ASEAN as a central element in its Security and Growth for All in the Region (SAGAR) strategy.
- **Socio-Cultural Cooperation:** Approximately 6 million people of Indian origin reside in ASEAN. People-to-people ties are fostered through programs like the Students Exchange Programme, special training for ASEAN diplomats, exchanges of parliamentarians.

Highlights: 21st ASEAN-India Summit

- PM Modi Reaffirmed support for ASEAN Unity and Indo-Pacific Vision

10-Point Connectivity & Resilience Plan

- ASEAN-India Year of Tourism (2025) with \$5M fund
- Youth Summits, Startup Festivals, Women Scientists Conclave
- Review of ASEAN-India Trade Agreement (AITIGA) by 2025
- New scholarships in agriculture, cyber policy dialogue, green hydrogen workshop
- Health Ministers' track and \$5M for disaster resilience
- 'Plant a Tree for Mother' campaign

Issues and Challenges in India-ASEAN relations

- **Trade Imbalances:** India's trade deficit with ASEAN has grown significantly, from \$7.5 billion in 2011 to approximately \$38.46 billion in FY24.
- **Internal ASEAN Divisions:** ASEAN's unity is challenged by divergent national positions. E.g. While the Philippines confronts China over the South China Sea, countries like Laos maintain close ties with Beijing. Similarly, member states differ in their responses to Myanmar's military junta.
- **Inadequacies of FTA:** There have been instances of round-tripping imports, where goods are rerouted from China through ASEAN channels to India-for example, the inflow of cheap Chinese mobile phones via Malaysia.
- **Limited Connectivity:** Physical and digital links remain underdeveloped, affecting trade, investment, and exchanges. The India-Myanmar-Thailand Highway, launched in 2012, still has 30% pending due to unrest in Myanmar.
- **Territorial Disputes:** Conflicts in the South China Sea, especially between China and ASEAN nations like Vietnam and the Philippines, create instability and complicate India's regional strategy.
- **Engagement:** India primarily engages with ASEAN countries on a bilateral basis rather than through a multilateral framework.

Way Forward

- Expand the QUAD to include ASEAN countries, enhancing regional security and cooperation.
- Strengthen maritime security partnerships to address gaps left by limited Chinese military ties.
- Boost cultural connections through increased tourism and creative branding.
- Improve connectivity by enhancing land, air, and sea linkages to facilitate people-to-people exchanges and economic activities.
- Finally, collaborate in international and regional forums to advance shared interests.

Shanghai Cooperation Organisation

Context: The 23rd SCO Council of Heads of Government meeting was held in Islamabad, focusing on trade and economic cooperation. EAM S. Jaishankar led the Indian delegation, marking the first Indian foreign minister's visit to Pakistan in nine years

About Shanghai Cooperation Organization (SCO)

- The **SCO** is a permanent intergovernmental body founded on June 15, 2001, in Shanghai. It evolved from the 'Shanghai Five' mechanism.
- **Membership: Founding Members** include - Kazakhstan, China, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan; **India** and Pakistan joined in 2017, Iran in 2023, and Belarus in 2024. **Observers:** Afghanistan and Mongolia.
- **Representation:** 42% of the world's population, 22% of its land area, and 20% of global GDP (as of 2023).
- **Principles:** The SCO operates on principles of mutual respect for sovereignty, non-aggression, non-interference, and non-use of force in international relations.
- **Decision-Making:** The Council of Heads of State is the supreme body, setting priorities, defining major activities, and addressing significant international issues.

Importance of SCO for India

- **Geostrategic:** SCO supports India's pursuit of strategic autonomy and multilateralism. India's membership in both SCO and QUAD reflects its balanced foreign policy.
- **Central Asia Connectivity:** SCO aligns with India's "Connect Central Asia" policy for active engagement with the region. India is involved in projects like **Chabahar Port, INSTC, and the Ashgabat Agreement.**
- **Energy Security:** India imports 85% of its oil and 46% of its gas. Central Asia's vast hydrocarbon and rare earth reserves especially in Kazakhstan, Uzbekistan, and Kyrgyzstan are vital for India. SCO can also support Turkmenistan, Afghanistan, Pakistan & India (TAPI) and Iran, Pakistan & India (IPI) gas pipelines.
- **Afghanistan Stability:** After the Taliban's 2021 takeover, SCO has pushed for an inclusive Afghan government. India supports regional security efforts through SCO frameworks.
- **Counterterrorism Cooperation:** Through RATS, India accesses key intelligence on terrorism and drug trafficking. SCO also provides a platform to address cross-border terrorism concerns, including with Pakistan.
- **Platform for Peace:** India's tradition of peaceful diplomacy helps it promote dialogue and cooperation among SCO countries.



Challenges faced by SCO

- **Bilateral Tensions:** India and Pakistan face long-standing disputes like Kashmir and Sir Creek, with India accusing Pakistan of cross-border terrorism. India-China clashes, including the 2017 Doklam standoff and 2020 Galwan incident, also strain cooperation.

- **Chinese Dominance:** SCO's structure and operations are heavily China-influenced. Only Chinese and Russian are official languages, despite India's push to include English.
- **Belt and Road Initiative (BRI):** India strongly opposes BRI, especially the China-Pakistan Economic Corridor passing through PoK, citing sovereignty violations. In 2023, India alone refused to endorse BRI in the SCO declaration.
- **Resource Conflicts:** China has unresolved land disputes with Central Asian nations. Water and border issues also persist among members like Uzbekistan and Tajikistan.
- **Dilution of Regional Focus:** SCO's original aim of Central Asian cooperation risks dilution with expansion, potentially weakening its regional identity and effectiveness.
- **Geopolitical Tensions:** Russia's war in Ukraine has damaged its credibility as a security partner. Threats made by Russian officials towards countries like Kazakhstan have raised concerns about future military aggression or coercion.

In India's strategic calculations, SCO manifests its pursuance of strategic autonomy and multi alignment. The vision of SCO SECURE (S: Security, E: Economic development, C: Connectivity, U: Unity, R: Respect for sovereignty and territorial integrity, E: Environmental protection) should be the path ahead for SCO.

Reforming Multilateral Development Banks (MDBs)

Context: The G20 Independent Expert Group has released a report card evaluating the progress of Multilateral Development Banks (MDBs) as a part of global efforts to ensure that MDBs can better support development and sustainability goals.

About Multilateral Development Banks (MDBs)

- Multilateral Development Banks are **international financial institutions that provide loans, grants, and technical support to low- and middle-income countries**. Their main goal is to promote economic and social development.
- **Major MDBs include:** World Bank Group, Asian Development Bank (ADB), African Development Bank (AfDB), Inter-American Development Bank (IDB)
- These institutions support projects related to environment, energy, education, finance, health, disaster management, and regional connectivity (like ASEAN connectivity).

Challenges being faced by MDBs

- **Lack of Finance:** New technology (e.g., renewables) offers big opportunities for growth, but lack of affordable finance in developing countries slows adoption.
- **Reform Implementation Is Too Slow:** MDBs have taken steps to expand sustainable lending and mobilise more capital. However, lending increased by only about 30%-far short of the tripling recommended. Concessional finance for the poorest countries has barely grown, despite urgent need. Expanded mandates without matching resources are unlikely to succeed.
- **Private Sector Mobilisation Remains Limited:** Despite some progress (e.g., more use of guarantees), MDBs mobilised only about \$70 billion in private capital last year.
- **Inefficient Use of Capital:** MDBs often prioritize maintaining AAA credit ratings over leveraging existing capital effectively. The overemphasis on credit ratings can limit risk-taking needed for transformative projects.
- **Lack of Coordination and Competition:** MDBs operate in silos, with limited coordination among institutions. There is insufficient healthy competition based on country needs or performance, which reduces efficiency and innovation.
- **Governance Constraints:** Decision-making power in MDBs is concentrated in a few major shareholder countries. This imbalance hinders reforms, slows capital increases, and makes governance less representative.
- **Unbalanced Allocation of Resources:** More than 60% of MDB funds go toward development; about 25% to humanitarian aid; 15% to peace and security. Only 3.8% of total assistance is directed toward conflict prevention, a critical but neglected area.

- **Inadequate Local Engagement:** MDBs often rely on external legal frameworks (e.g., UK law) instead of local systems, increasing compliance burdens. Local Development Finance Institutions (DFIs) are underutilized, even though they can provide valuable ground-level knowledge.
- **Currency and Exchange Rate Risks:** Long-term projects face currency volatility, and hedging options are often expensive or unavailable. Currency risks discourage both public and private investments in infrastructure

Key Recommendations for MDB Reforms

- **Revamp the Vision, Mandate, and Role of MDBs:** MDBs must evolve their core mission to respond rapidly and effectively to both global challenges (like climate change, pandemics) and national development goals of their client countries. This requires a **bigger and bolder role-not just in giving loans, but also in leading sustainable and inclusive growth.**
- **Focus on Private Sector Engagement:** Private investment must become central to MDB operations. MDBs need a culture of informed risk-taking so they can attract private capital and de-risk investments in emerging and developing economies. Encourage partnerships with private investors, use guarantees more effectively, and innovate business models to involve the private sector at scale.
- **Increase Financing Capacity Significantly:** Triple the amount of direct financing MDBs provide. Quadruple the amount of private finance mobilized through MDB initiatives. Expand concessional finance (low-interest or no-interest loans) for the world's poorest countries.

Role of Multilateral Development Banks (MDBs) in India's Growth and Development

- **Infrastructure Financing:** MDBs fund major infrastructure projects like roads, transport, and energy in India. Key institutions include the World Bank, ADB, AIIB, and EIB.
- **Sectoral Support:** World Bank committed \$97.6 billion; ADB \$59.7 billion. AIIB and EIB support key sectors like transport, energy, and agriculture.
- **Crisis Response:** MDBs supported India during crises, such as World Bank aid during the COVID-19 pandemic, helping address emergency needs and sustain economic stability.
- **Social Development:** MDBs funded programs like Sarva Shiksha Abhiyan and NRHM, supporting education, health, and alignment with Sustainable Development Goals (SDGs).
- **Climate Action:** MDBs support India's climate goals. In 2023, World Bank committed \$1.5 billion for low-carbon energy and sustainable development projects.
- **Policy and Capacity Building:** MDBs offer policy advice, technical help, and capacity-building support for sound macroeconomic and sectoral reforms in India.

India's Contribution to MDBs

- **Shareholder and Capital Contributor:** India is a major shareholder in MDBs like the World Bank and ADB, providing financial resources and institutional support.
- **Founding Member:** India co-founded NDB and AIIB, reflecting its leadership in promoting multilateralism and regional development financing.
- **Policy Influence:** India actively shapes MDB strategies, advocating for Global South priorities in governance and resource allocation.
- **Advocacy for Reform:** India leads calls for inclusive MDB reform, pushing for fair representation and broader mandates on climate and debt.
- **Knowledge Sharing:** India partners with MDBs on projects and shares development expertise to promote South-South cooperation among developing nations.

To meet the needs of emerging and developing economies, MDBs must become bigger (more capital), bolder (more ambitious), and better (more efficient and inclusive). Without decisive action, MDBs will fall short of the role the world now demands of them.

India GCC Relations

Context: At the first India-GCC Joint Ministerial Meeting in Riyadh in 2024, both sides stressed the need to strengthen cooperation in trade, investment, energy, infrastructure, and healthcare.

About the Gulf Cooperation Council (GCC)

- The GCC is a **regional organisation formed in 1981 by six countries:** Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE).
- The GCC was created **in response to regional instability** and aimed to coordinate efforts in politics, security, and the economy.
- It has made progress in building a common market, a proposed monetary union, and several joint infrastructure projects.

Overview of GCC

- **Trade and Investment:** The GCC is a major trading partner for India. In 2023–24, India-GCC trade reached **US\$161.82 billion**, about 14.2% of India's total trade. While India imports large quantities of oil and gas, it also exports various goods and services. India received US\$24.66 billion in FDI from GCC countries between April 2000 and June 2024, with major investors like ARAMCO, ADNOC, and EMAAR.
- **Indian Expatriate Community:** The GCC hosts 8.5 million Indians. They contribute significantly to India's economy by sending remittances-amounting to around US\$120 billion in 2023.
- **Indian Businesses in the GCC:** Indian companies like TCS, Wipro, L&T, Shapoorji-Pallonji, and Lulu Group have a strong presence in the region, contributing to sectors such as retail, IT, construction, and engineering.
- **India-GCC Free Trade Agreement (FTA):** India and the GCC signed a framework agreement for an FTA in 2004, but talks were stalled due to political changes in the region. However, discussions have resumed since 2022, especially after the success of the India-UAE CEPA. Both sides remain committed to finalising the FTA.
- **Defence and Security Cooperation:** India and the GCC have deepened defence ties, focusing on: Counterterrorism, Maritime security, Joint military exercises, Training and defence trade. India is also exploring joint defence manufacturing, particularly with the UAE and Saudi Arabia.

Challenges in the India-GCC Relationship

- **Geopolitical Divergences within the GCC:** GCC countries vary in foreign policy approaches. Qatar and Oman maintain cordial ties with Iran, while Bahrain accuses Iran of destabilizing the region. The UAE and Bahrain normalized relations with Israel via the Abraham Accords, but not all GCC members share this stance, leading to diplomatic inconsistencies.
- **Regional Political Instability:** Frequent political and security tensions among GCC members hinder collective decision-making. The Qatar crisis (2017–2021), which led to a diplomatic blockade, significantly disrupted regional unity. These internal divisions pose challenges for India's engagement with the GCC as a cohesive entity.
- **Slow Progress on Trade Agreements:** Although a framework for a Free Trade Agreement (FTA) was signed in 2004, only two rounds of talks were held (2006-2008), and progress has stalled. Regional issues and shifting priorities have delayed deeper economic engagement.
- **Dependence on Oil and Gas:** India heavily relies on GCC for oil and gas, making it vulnerable to price and supply shocks from regional instability. Despite efforts to diversify energy sources, dependence remains significant.

First India-GCC Ministerial Meeting

- The first **India-GCC Joint Ministerial Meeting for Strategic Dialogue** was held in Riyadh on September 9, 2024.
- **Co-chaired by India's EAM S. Jaishankar and Qatar's Prime Minister and Foreign Minister**, the meeting aimed **to boost economic, energy, infrastructure, and healthcare cooperation.**
- A major outcome was the decision to launch a **Joint Action Plan (2024–2028)** covering diverse areas such as: **Health, Trade, Security, Agriculture and food security, Transportation, Energy, Culture, Economic and People-to-People Ties**

- **Limited Economic Diversification:** Trade between India and GCC is mostly concentrated in energy and remittances, with little progress in sectors like technology, education, and research. Indian businesses face market access and regulatory challenges in the Gulf.
- **Labour and Expatriate Issues:** With over 8.5 million Indians living in the GCC, concerns persist around labour rights, wages, and legal protection. The Kafala (sponsorship) system in several Gulf countries has been criticized for enabling worker exploitation.
- **Strategic Competition:** GCC countries are strengthening ties with global powers like China and the U.S. India must navigate these dynamics while regional conflicts (e.g., Iran tensions, Gaza war) threaten its interests and diaspora safety.

Despite existing challenges, India-GCC relations hold immense potential for deeper strategic and economic engagement. A proactive, multi-sectoral, and people-centric approach will allow India and the GCC to transform their long-standing relationship into a more resilient and forward-looking strategic partnership.

BIMSTEC

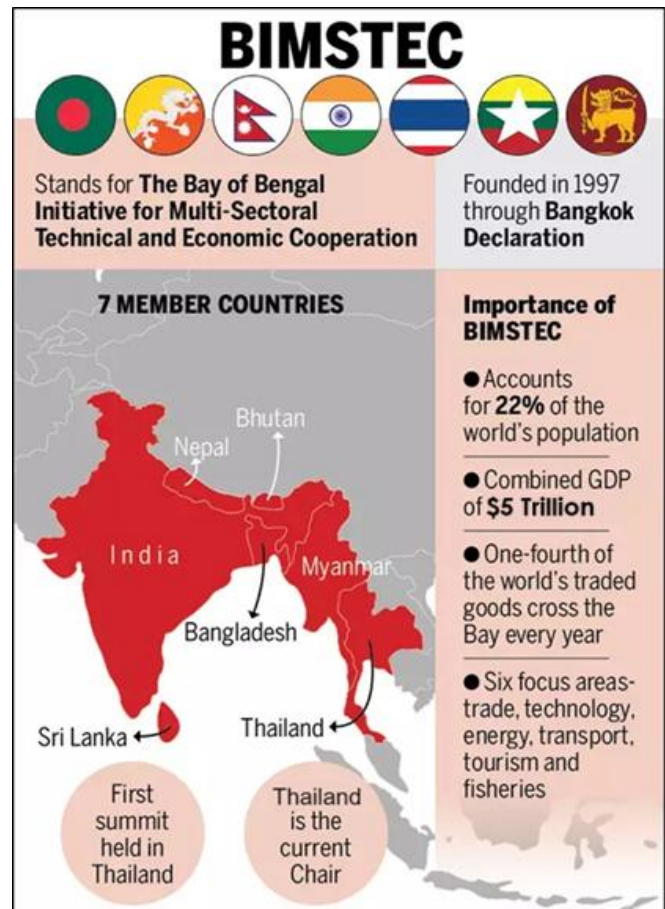
Context: PM Modi attended the 6th BIMSTEC Summit in Bangkok and launched a 21-point action plan to boost regional connectivity, trade, and security.

About Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation

- BIMSTEC is a regional organization comprising seven-member states: Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.
- Established in 1997, its goal is to foster multifaceted technical and economic cooperation among the Bay of Bengal countries.
- This region, with a population of around 1.5 billion and a combined GDP exceeding USD 3.8 trillion, benefits significantly from the initiative.
- **Formation:** BIMSTEC was founded in 1997 with the Bangkok Declaration, originally known as 'BIST-EC' (Bangladesh, India, Sri Lanka, and Thailand Economic Cooperation) with four-member states.
- **Expansion:** Myanmar joined in 1997, prompting a name change to 'BIMST-EC.' The inclusion of Nepal and Bhutan in 2004 led to the final renaming as the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).

Significance of BIMSTEC

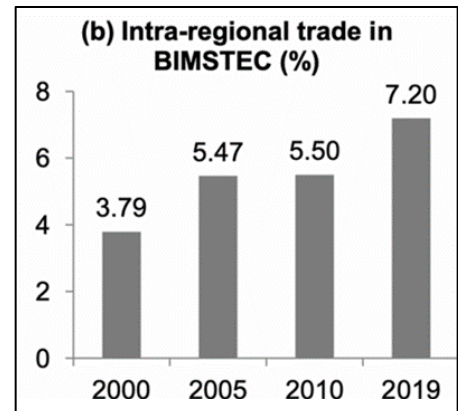
- **Economic Potential:** BIMSTEC covers around 1.8 billion people (22% of the global population) with a combined GDP of USD 5 trillion. A quarter of global trade passes through the Bay of Bengal annually.
- **Connecting South and Southeast Asia:** BIMSTEC links the Great Himalayas to the Bay of Bengal, bridging South and Southeast Asia. BIMSTEC acts as a bridge between South Asia and SouthEast Asia, having members from both the parts.
- **Significance for India:** BIMSTEC supports India's 'Neighborhood First' and 'Act East' policies, offering links to Southeast Asia and reducing China's regional influence. It also boosts development in India's Northeast via Bangladesh and Myanmar.



- **Countering China's Influence:** With SAARC largely inactive, BIMSTEC offers India an alternative platform to counter China's Belt and Road Initiative and re-engage with regional partners more effectively.
- **Sectoral Cooperation:** BIMSTEC fosters economic growth and social progress through collaboration in trade, energy, transport, technology, tourism, agriculture, public health, poverty reduction, cultural exchange, and counter-terrorism.

Challenges to BIMSTEC

- **Inconsistent Meetings:** BIMSTEC planned to hold summits every two years and ministerial meetings annually, but only four summits have taken place in the first 20 years since its inception in 1997. This lack of regular high-level engagement has slowed momentum.
- **Issues with FTA:** Despite signing a framework agreement for a Free Trade Area in 2004, negotiations on a BIMSTEC FTA remain incomplete even after 20 rounds of talks. To date, only two of the seven necessary constituent agreements have been finalized. As a result, intra-regional trade remains disappointingly low, with the volume around \$70 billion, accounting for just 5-7% of global trade.
- **Inadequate Institutionalization and Funding:** BIMSTEC has a very lean budget of around \$200,000. Initiatives for a BIMSTEC Development Fund to finance projects have not materialized.
- **Challenges in Maritime Trade and Fisheries:** The Bay of Bengal, a vital fishing area that produces 6 million tonnes of fish annually (7% of the world's total), is facing severe challenges. The region is a hotspot for Illegal, Unreported, and Unregulated (IUU) fishing in the Asia-Pacific, with losses estimated at up to US\$23 billion annually, according to the FAO.
- **Low Trade among members and with India:** Despite its position as one of the top 10 economies of the world based on GDP estimates, India's trade volume with other BIMSTEC nations remains abysmally below 5% in both imports and exports,
- **Bilateral Tensions Between Members:** Bangladesh faces a major refugee crisis from Myanmar due to the persecution of Rohingyas. There are also border conflicts between Myanmar and Thailand. These bilateral issues impact BIMSTEC cooperation.



BIMSTEC needs to strengthen its institutional mechanisms, be more inclusive, and establish a dispute-resolution system based on deliberation and consensus. The organization has the direction and drive to become a key player in the Bay of Bengal, but it requires more deliberations, prompt decisions, and effective delivery of its initiatives.

QUAD

Context: Prime Minister Modi attended the 6th Quad Leaders' Summit on 21 September 2024 in Wilmington, hosted by U.S. President Joe Biden, with leaders of Australia and Japan.

About the Quad

- The Quadrilateral Security Dialogue (Quad) is a strategic group of four democratic countries- India, the United States, Japan, and Australia.
- Its main aim is to ensure a free, open, and rules-based Indo-Pacific region.

Evolution of Quad

- **2007:** The Quad was first proposed by Japanese Prime Minister Shinzo Abe during an informal ASEAN leaders' meeting.



- **2012:** The concept of the 'Democratic Security Diamond,' including the US, Japan, India, and Australia, was introduced by Japan.
- **2017:** Facing increasing threats from China, the Quad was revitalized with a focus on establishing a rule-based international order. The first Quad talks were held in Manila before the ASEAN Summit.
- **2020:** The Malabar naval exercises expanded to include Australia, marking the first joint military drills of the Quad nations in over a decade.
- **2021:** Quad leaders held a virtual meeting and released the joint statement, 'The Spirit of the Quad'.

Significance of QUAD for India

- **Strategic Importance:** It is a platform to discuss and address the common challenges faced by the Indo-Pacific region, such as the rise of China and its increasing assertiveness in the region through 'String of pearls' strategy.
- **Economic:** The member countries have launched several initiatives like the Asia-Africa Growth Corridor, the Blue Dot Network, and the Supply Chain Resilience Initiative to promote economic development in the region. India is mostly at the receiving end of investments by QUAD countries. In May 2022, Quad countries decided to allocate \$50 Billion for infrastructure in the Indo-Pacific region.
- **Security and Defense:** The QUAD provides India with a platform to enhance its security cooperation with like-minded countries. This includes intelligence sharing, maritime domain awareness, and capacity building. The Malabar Naval Exercises aims to boost military coordination and combat skills amid rising tensions exacerbated by China's assertiveness in the South China Sea and IOR.
- **Regional Stability:** QUAD is significant for India in promoting regional stability in the Indo-Pacific region. It is based on the principles of a free, open, and inclusive Indo-Pacific and aims to promote a rules-based international order, ensuring that Chinese rise remains peaceful.
- **China-plus-one Spillover:** Following the disruptions in the supply chain during the pandemic, Japan and the US want to shift their manufacturing companies out of China in order to diversify their risks, which could be capitalized on by India as well.
- **Technology and Cybersecurity:** By fostering research and development in key areas like 5G, AI, and cybersecurity, QUAD seeks to ensure a resilient digital environment. This is particularly relevant for India, given its aspirations for digital transformation and the potential vulnerabilities in cyberspace.

Initiatives of Quad	Focus
Quad Maritime Security Working Group	Maritime security, domain awareness, naval interoperability.
Quad Health Security Partnership	Vaccine production and distribution: India (production), US (financing), Australia & Japan (aid).
Quad Indo-Pacific Oceans Research Alliance	Data exchange on ocean climate impacts, sea level rise, and marine ecosystems.
Indo-Pacific Partnership for Maritime Domain Awareness	Combat illegal fishing, respond to climate change, and enforce laws near shores.
QUAD Fellowship	Scholarships and funding for STEM master's and PhD degrees.
Quad Investors Network (QUIN)	Investments in clean energy, semiconductors, critical minerals, and quantum technologies.
Quad Working Group on Counter-Terrorism	Address new terrorism threats, radicalization, and extremism.
Quad Climate Working Group	Climate change adaptation and capacity building in the Indo-Pacific.
Critical and Emerging Technologies	Collaboration on essential technologies for global digital economies.

Challenges in QUAD

- **Imbalanced Cooperation:** The members do not have the same levels of financial resources, strategic awareness, and military capabilities in the Indian Ocean. This creates an imbalance in cooperation, which might create problems in the future.

- **Domestic Political Constraints:** Internal political and economic priorities can limit regional coordination. For example, China is Australia's largest trading partner, accounting for about one-third of its exports and 26% of its total goods and services trade in 2023–24, which may constrain Australia's strategic alignment with other partners in the region.
- **Lack of Formal Structure:** Unlike other formal alliances, the QUAD is not a treaty-based organization and lacks a formal structure. This limits its ability to coordinate actions effectively and respond swiftly to regional crises.
- **Issues with Delivery:** The Quad faces criticism for its delivery shortcomings. The Quad Vaccine Partnership committed to providing 1.2 billion doses to the Indo-Pacific region by the end of 2022. However, it delivered nearly 800 million doses globally, falling short of the target.
- **Differing Perceptions of QUAD:** The U.S. sees QUAD as an aggressive grouping primarily aimed against China and its expansion in the Indian Ocean Region. India, on the other hand views QUAD as a platform for peaceful, multi-sectoral cooperation, focusing on collaborative opportunities rather than confrontation.

The QUAD's vision of a free and open Indo-Pacific aligns with India's aspirations for regional stability, security, and economic growth. By actively participating in the QUAD, India can enhance its defence capabilities, counter China's influence, and leverage economic opportunities.

India and the World

Weaponization of Trade

Context: The External Affairs Minister recently voiced concern about the rising trend of using trade as a tool for strategic pressure - a phenomenon often referred to as the "weaponization of trade."

What is Trade Weaponization?

- It refers to the **strategic use of trade policies**, tools, and restrictions by a country to achieve its geopolitical or economic objectives, **often to punish, pressure, or influence another country's behavior**. In this context, **trade is no longer seen as just a means of economic cooperation, but as a tool of statecraft or coercion**.

Tools of Trade Weaponization:

- **Trade Sanctions:** Banning critical exports/imports to pressure other nations. Example: US sanctions on Huawei and semiconductor restrictions from Taiwan.
- **Tariff Wars:** Imposing high tariffs to target rival economies. Example: US–China trade war (2018–20) with mutual tariff hikes.
- **Export Controls:** Restricting sensitive technologies to deny strategic advantage. Example: USA's Ban on advanced AI chips exports to China.
- **Blocking FDI:** Preventing investments in key sectors for national security. Example: Western opposition to Chinese investments in the telecom sector.
- **Supply Chain Disruption:** Using control over vital supply chains as leverage. Example: China's restrictions on seven medium and heavy rare earth elements to the USA.

Global Implications:

- **Erosion of WTO norms:** These unilateral actions weaken the rules-based multilateral trading system. With the WTO dispute settlement body dysfunctional, enforcement has become lax.
- **U.S. Responsibility:** Although the United States played a leading role in developing and perfecting these WTO mechanisms, its recent actions, such as imposing unilateral tariffs and prioritizing domestic interests, have undermined its credibility in upholding global trade norms.
- **Normalization of Trade Coercion:** Many countries now justify such actions by citing others. This "if-they-can-do-it-so-can-we" mindset risks fragmenting global trade.
- **Shift from Dollar:** Nations now explore non-dollar payment systems to avoid U.S. financial sanctions, challenging the dominance of the U.S. dollar.

India's Perspective:

- **Strategic Autonomy:** India asserts that trade should not be used as coercion and defends the right of nations to make independent policy decisions.
- **Support for Multilateralism:** India backs WTO reforms, especially restoring its dispute resolution mechanism, and opposes unilateral sanctions.
- **Supply Chain Resilience:** Through initiatives like **Quad, SCRI, and the Mineral Security Partnership (MSP)**, India is reducing dependency on single-source supply chains (notably China).
- **Cautious Protectionism:** India uses WTO-compliant measures like anti-dumping duties (mainly against Chinese goods) to protect domestic industries from unfair trade.
- **Opposition to Coercion:** India, in coordination with platforms like the G20, strongly resists economic coercion and consistently raises the issue in international fora.
- **Balanced Trade Policy:** India promotes economic openness while safeguarding national security through diversified trade and investment strategies.

India's stance, rooted in **strategic autonomy, multilateralism, and balanced trade policy**, offers a principled alternative. By advocating for fair trade, resilient supply chains, and institutional reforms, India seeks to ensure that global trade remains a force for mutual growth rather than geopolitical conflict.

India's Shift of Approach in Trade Negotiations

Context: India is adopting a more cautious and strategic approach in its trade negotiations. It has paused talks for Free Trade Agreements (FTAs) with smaller countries like Oman and Peru.

Why This Shift in Approach?

- India has noticed that some previous trade agreements have helped the partner countries more than India. This is evident in the **rising trade deficits** (imports are higher than exports) with some major trading partners.
- There is also concern that Indian investments and industries are being negatively impacted due to these imbalances.

Widening Trade Deficit with FTA Partners

Trade Deficit with ASEAN	Trade Deficit with the UAE
• ASEAN is an important trading region for India, making up about 11% of India's total trade. • After signing the ASEAN-India Trade in Goods Agreement (AITIGA), trade increased sharply. However, the benefits have been skewed in favour of ASEAN. • Between 2009 and 2023, imports from ASEAN to India rose by 234.4%, while India's exports to ASEAN rose by only 130.4%. • Consequently, India's trade deficit grew from \$7.5 billion in 2011 to around \$44 billion in 2023.	• India signed the Comprehensive Economic Partnership Agreement (CEPA) with the UAE in May 2022. • Within eight months, India's trade gap with the UAE widened by over \$5 billion. • In FY25, India's trade deficit with the UAE more than doubled to \$27 billion, up from \$12.4 billion in the previous fiscal year.

India's New Strategies to Tackle Trade Imbalances

- **Drafting a New Standard Operating Procedure (SOP):** The Commerce Ministry is creating a new SOP to guide future trade negotiations. This SOP includes:
 - Modern topics like labour laws, environmental standards, and resource planning;
 - Clear team structures and negotiation protocols
 - Inputs from key ministries like the Ministry of External Affairs (MEA) and Department of Economic Affairs (DEA).
- **Stronger Rules to Prevent Unfair Trade:** There are concerns that Chinese products are entering India via ASEAN countries. India is:
 - Tightening rules of origin (to confirm where goods are truly made)

- Imposing anti-dumping duties on goods like steel from countries such as Vietnam
- Monitoring and investigating supply chain rerouting by Chinese firms through countries like Mexico and Vietnam.
- **Focus on Larger and Strategic Markets:** India is now prioritising trade deals with: Big markets like the European Union and the UK; Geopolitically significant countries like the Maldives.
- **Reviewing Existing FTAs:** India is reassessing the ASEAN agreement, especially due to post-COVID trade deficits. The review aims to address tariff imbalances that have hurt Indian exports.

Challenges Faced by India in Trade Negotiations

- **Lack of Experienced Negotiators:** India has set an ambitious target of achieving \$2 trillion in exports by 2030. However, it faces a major challenge due to the limited number of trained negotiators. Currently, India has around 150 trade officers managing key international trade discussions, compared to over 800 in the United States.
- **Withdrawal from RCEP:** India opted out of the Regional Comprehensive Economic Partnership (RCEP), led by China. This was due to fears of a flood of cheap imports from China. Meanwhile, China–ASEAN trade flourished, making it tougher for India to compete in the region.
- **Trade Rerouting from China:** There is a growing trend of Chinese goods being rerouted into India through ASEAN countries, bypassing direct import restrictions.
- **Global Trade Challenges:** India also faces **broader issues such as:** A global economic slowdown; The rise of tariffs and non-tariff barriers; EU's Carbon Border Adjustment Mechanism; EU Deforestation Rules, which may affect exports from countries that don't meet new environmental standards.

By focusing on **balanced partnerships, stronger negotiation strategies, and preventing unfair trade practices**, India aims to create **more equitable trade relationships** in the future.

China +1 Strategy

Context: According to a NITI Aayog Report, India has so far seen “limited success” in capturing the China Plus One strategy.

What is China Plus One?

- China Plus One is a **global business strategy where companies diversify their manufacturing and supply operations by adding at least one country outside of China**. This helps reduce overdependence on China for production.
- This approach allows businesses to maintain a presence in China while simultaneously investing in alternative locations such as India, Vietnam, Thailand, Malaysia, Indonesia, and others

Key Reasons for the Strategy:

- **Overconcentration in China:** China's share in global manufacturing is approximately 28-31%. For 30+ years, global companies invested heavily in China due to its low costs and large market. This created a risky overdependence.
- **Geopolitical Tensions:** US-China trade wars and increasing distrust pushed companies to explore safer alternatives.
- **Rising Costs in China:** Increasing labor costs in China have reduced its cost advantage due to shrinking working age population. Businesses are now turning to more affordable markets to stay competitive.
- **New Markets and Talent:** Emerging economies like India, the Philippines, and Vietnam offer competitive advantages through affordable skilled labour and growing tech capabilities.
- **Strict Regulations:** New data privacy laws in China (like the 2021 Personal Information Protection Law) raised compliance costs and discouraged foreign tech firms.
- **COVID-19 Disruptions:** China's Zero-Covid policy caused lockdowns, factory shutdowns, and global supply chain delays, exposing the dangers of single-source reliance.
- **Global Response:** Launched in April 2021 by India, Japan, and Australia, Supply Chain Resilience Initiative (SCRI) aims to reduce overdependence on China by strengthening and diversifying global supply chains.

Opportunities for India

- **Emerging Manufacturing Hub:** India has emerged as the most favoured destination for companies planning to relocate manufacturing or invest in new facilities in Asia, with 28 companies showing interest, compared to 23 for Vietnam.
- **Policy Support:** Government initiatives such as Make in India and the Production-Linked Incentive (PLI) schemes with a total outlay of ~₹1.97 lakh crore, provide tax breaks, financial incentives, and infrastructure support to attract foreign investment.
- **Skilled and Affordable Workforce:** India has a large, skilled workforce with competitive wages which are 47% lower than China's (according to a 2023 Deloitte study) making it a cost-effective manufacturing base without sacrificing quality.
- **Infrastructure Development:** Ongoing investments of ₹11.11 lakh crore (3.4% of India's GDP) in highways, ports, industrial corridors, and Special Economic Zones (SEZs) are improving logistics and boosting India's export capabilities.
- **Digital Growth:** Rapid digitalization and increased tech adoption are enhancing manufacturing efficiency and global integration. India's digital economy accounts for 11.74% of the GDP
- **Sectoral Momentum:** Key industries like textiles, metals, chemicals, pharma, and semiconductors are poised for growth. By the end of FY25, India is expected to contribute 17-18% of global Apple iPhone production volume and 14% of its value.

Challenges and Limitations

- **Slower Export Growth:** India's export growth rate (CAGR 6.3%) trails behind leading competitors such as Vietnam and Thailand (CAGR 12.4%), reflecting challenges in scaling up manufacturing and export capabilities.
- **High Tariff Rates:** India has some of the highest tariff rates among China Plus One destinations, averaging 14.7% for non-agricultural products. This discourages Western investors and limits export competitiveness
- **Skill Mismatch:** There is a gap between the skills provided by India's education system and those required by modern manufacturing industries, with only 42.6% of graduates employable.
- **Limited Integration into Global Value Chains:** India's low participation in global supply chains, especially in high-tech and labor-intensive sectors, reduces its appeal to global firms. A key reason is its reluctance to join major trade blocs like RCEP and CPTPP.

What is RCEP? (Regional Comprehensive Economic Partnership)

- RCEP is the world's largest free trade agreement, signed in November 2020.
- It includes 15 countries: 10 ASEAN nations + 5 of their major trading partners (China, Japan, South Korea, Australia, and New Zealand).
- The goal of RCEP is to make trade easier among member countries by reducing tariffs, simplifying rules, and encouraging economic cooperation.
- It covers goods, services, investment, intellectual property, e-commerce, and more.
- India was part of RCEP negotiations from the beginning in 2012. It participated in talks for over 7 years, as RCEP offered a chance to access large markets and become part of major supply chains. However, India finally opted out of the agreement in 2019.

Benefits of Joining RCEP		Reasons for India's Withdrawal
Market Access	Access to large Asia-Pacific markets; boosts MSME exports and trade volumes.	Fear of widening trade deficits, especially with China and ASEAN countries.
Supply Chain Integration	Strengthens India's role in global supply chains Supports the "China Plus One" strategy by attracting firms diversifying from China.	Limited current integration into global value chains India wasn't ready to compete in key sectors.

Investment Boost	Improves investor confidence and encourages FDI in manufacturing and infrastructure through stable trade rules.	Concern over cheap Chinese goods flooding Indian markets, harming domestic industries.
Trade Competitiveness	Reduces tariffs and non-tariff barriers, making Indian products more competitive in key markets like Japan, Korea, and Australia.	Lack of sufficient safeguards for local industries, especially dairy, steel, and textiles.
Strategic Influence	Enhances India's say in regional trade norms and economic integration.	Risk of losing control over trade policy and being forced into unfavorable rules.
Technology Access	Encourages innovation through IP rights and partnerships with advanced RCEP members like Japan and South Korea.	Concerns over data protection, technology dependence, and limited readiness for regulatory alignment.
Domestic Industry Concerns	Tariff reductions would attract global value chains and modernize local industries.	Fears of harm to small businesses and farmers due to sudden tariff elimination (e.g., from 35% to 0% in dairy).
Rules of Origin Issues	Could simplify sourcing from multiple RCEP members, improving flexibility in manufacturing.	Worried that lax rules could allow Chinese goods to enter India duty-free via third countries, weakening trade protections.

- **Business Perception:** Despite its resources and policies, India has struggled to attract firms shifting from China. Countries like Vietnam (0.35) and Thailand (0.24) rank higher than India (0.07) on the Manufacturing Attractiveness Index, reflecting stronger investor appeal.
- **Regulatory and Infrastructure Hurdles:** Complex regulations, slower processes, and gaps in infrastructure continue to limit India's competitiveness.

Way Forward

India must offer **targeted incentives**, **improve ease of doing business**, and develop **sector-specific industrial clusters**. Investing in **skill development**, modern infrastructure, and trade agreements is essential. Promoting R&D through public-private partnerships can boost innovation. With the right steps, India can capitalize on the China Plus One opportunity and become a manufacturing hub.

CARICOM and India

Context: During his visit to Guyana, Prime Minister Modi co-chaired the Second India-CARICOM Summit alongside the Prime Minister of Grenada (the current Chair of CARICOM) and other CARICOM leaders.

What is CARICOM?

- CARICOM stands for Caribbean Community. It is a regional organization made up of countries in the Caribbean that work together for economic integration, cooperation, and development.
- Established in 1973 (through the Treaty of Chaguaramas), it has 15 full member countries and 5 associate members. (Full members include nations like Jamaica, Trinidad and Tobago, Barbados, Guyana, and others)

Seven Pillars to Strengthen India-CARICOM Relations (as outlined by the PM Modi)

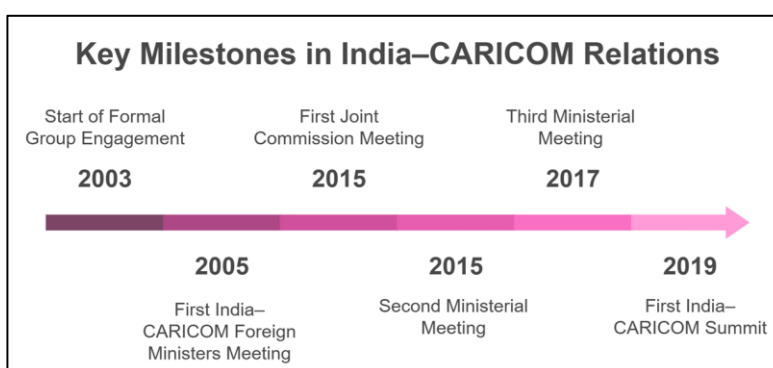
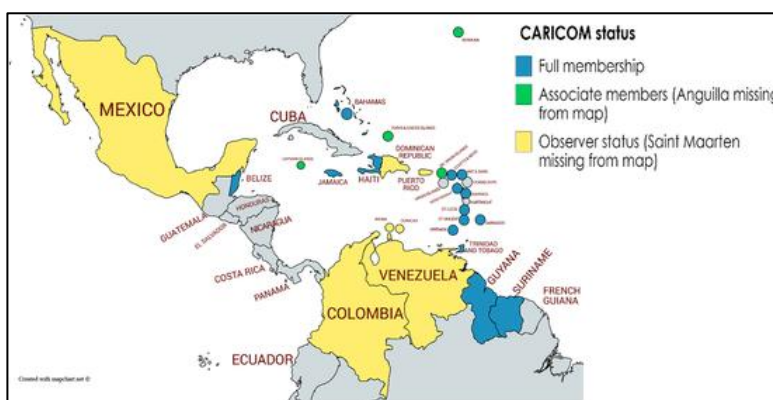
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- **Capacity Building:** 1000 additional ITEC training slots announced for the next 5 years.
 - **Agriculture & Food Security:** Sharing of India's tech-driven farming methods like drones and digital farming.
 - **Renewable Energy & Climate Change:** Focus on collaboration through the International Solar Alliance and Mission LiFE.
 - **Innovation, Technology & Trade:** Offer of India's Digital Public Infrastructure to improve public services
 - **Cricket & Culture:** Proposal for Indian culture days and training for young women cricketers in CARICOM.
 - **Ocean Economy & Maritime Security:** Cooperation in maritime mapping and hydrography in the Caribbean.
 - **Medicine & Healthcare:** Support for affordable healthcare, generic medicines, and Yoga promotion.

India's Diplomatic Engagement with CARICOM

- The High Commissioner of India in Georgetown, Guyana, also serves as India's Ambassador to CARICOM.
- While India already had ties with individual Caribbean nations, it began strengthening relations with CARICOM as a group in the early 2000s.

Significance of CARICOM for India

- **Support in International Forums:** Many CARICOM countries back India's global aspirations, such as: Permanent membership in the UN Security Council (UNSC).
- **Gateway to Latin America:** CARICOM acts as a strategic entry point for India to expand its: Trade, diplomatic ties, and development cooperation with Latin American countries.
- **Climate Action & Energy Cooperation:** Several CARICOM members, like Suriname, have joined India-led global initiatives: International Solar Alliance (ISA), Coalition for Disaster Resilient Infrastructure (CDRI).
- **South-South Cooperation:** CARICOM actively participates in India-led efforts like the Voice of Global South Summit (2024), reflecting strong cooperation between developing countries, helping them share knowledge and solutions.
- **Defence & Technology Partnerships:** India's HAL delivered Dornier 228 aircraft to Guyana. Such exports deepen defence and technical cooperation with the Caribbean.
- **Indian Diaspora and Cultural Bonds:** CARICOM countries like Trinidad and Tobago are home to a large Indian-origin population. Estimates suggest over 2.5 million people in the Caribbean are of Indian origin.
- **Disaster Resilience Cooperation:** In 2019, India committed US\$150 million in concessional financing for climate and renewable energy projects and US\$14 million in grant assistance for community development projects in CARICOM.



Key Challenges in India-CARICOM Relations

- **Distance and Poor Connectivity:** Long distance between India and the Caribbean increases transport costs and delays. Few direct flights limit tourism, trade, and cultural exchange.
- **Economic Differences:** CARICOM relies more on tourism, while India aspires to diversify its industrial and services base. Also, high tariffs on Indian goods (e.g., medicines) hurt trade potential.
- **Low Trade and Investment:** Differences in economies and trade rules result in low business and investment levels. India's total export to CARICOM in FY24 countries was- \$627 million USD only.
- **Different Climate Risks:** Caribbean islands face hurricanes and rising seas. India faces droughts and floods. Issues like Sargassum seaweed affect Caribbean tourism but are less relevant to India.
- **Global Competition:** China and the U.S. have strong presence in the Caribbean. India struggles to match their influence and investment levels.
- **Limited Capacity in CARICOM:** Many CARICOM countries lack resources and staff to carry out large projects, especially in tech and disaster response.

Despite these challenges, both sides recognize the potential for a stronger partnership, especially in multilateral forums and South-South cooperation, with recent summits outlining a strategic, seven-pillar framework for future engagement

Indo-Pacific

Context: Recently the “Quad-at-sea Ship Observation Mission” was unveiled. It brings together navies from India, the U.S., Australia, and Japan, highlighting growing efforts to improve interoperability and maritime safety across the Indo-Pacific.

What is the Indo-Pacific?

- The Indo-Pacific is a **broad geographical region that includes the Indian Ocean, the Pacific Ocean, and the countries that surround them.** It covers important maritime routes and chokepoints like the Strait of Malacca, South China Sea, Taiwan Strait, and Bab-el-Mandeb, which are essential for global trade, oil transportation, and strategic stability.
- However, the definition of Indo-Pacific varies:
 - India views the region as stretching "**from the shores of Africa to the Americas,**" highlighting its inclusive approach (PM Modi at Shangri-La Dialogue, 2018).
 - The United States defines it as the region from **Stretching from the US's Pacific coastline to the Indian Ocean.**
 - Australia includes the region from the **eastern Indian Ocean to the Pacific.**
 - Japan's Free and Open Indo-Pacific (FOIP) includes the **Indian Ocean, ASEAN nations, and Pacific coastlines of the Americas.**

India's Indo-Pacific Approach rests on four pillars:

1. **Collaborating with countries on shared concerns through issue-based partnerships,** involving participation in forums, 'mini-laterals', and security dialogues with key partners like the US, Japan, Australia, and France.
2. **Avoiding "alliances of containment"** and not compelling others to choose sides in disputes.
3. **Embracing evolution rather than revolution in regional order,** supporting new principles based on international law and sovereignty.
4. **Recognizing regional institutions like ASEAN, Quad, IORA, and BIMSTEC** as important underpinnings of future order.

What is the Significance of the Indo-Pacific for India?

- **Economic Significance:** The region contributes about 62% of global GDP and handles around 50% of world trade. Approximately 90% of India's trade and 80% of its energy imports pass through this region, making maritime stability crucial for India's growth.
- **Strategic Importance:** India's central location in the Indian Ocean gives it a unique advantage to influence regional developments. The Indo-Pacific also serves as a counterbalance to China's assertive behavior in maritime zones.
- **Diplomatic Engagement: India promotes inclusive regional cooperation through:**
 - **Act East Policy** for engaging Southeast Asia and beyond.
 - **SAGAR** (Security and Growth for All in the Region) doctrine to promote maritime security and development.
 - Active participation in **Quad, ASEAN** for regional stability and economic integration.
- **Non-traditional Security Role:** The region allows India to collaborate on **climate action, disaster response, cybersecurity, and anti-piracy efforts.**

What are the Challenges for India in the Indo-Pacific?

- **China's Assertiveness:** China's increasing military and economic influence, especially in the South China Sea and Indian Ocean Region, threatens regional balance and challenges India's maritime space.

- **Continental Security Burden:** India continues to deal with land-based threats, including an active border dispute with China and ongoing tensions with Pakistan. These continental issues divert attention and resources from maritime priorities.
- **Limited Naval Capacity:** While India's navy is growing (250 ships), it still lags behind China's (788 ships) in terms of power projection, technology, and infrastructure in the wider Indo-Pacific.
- **Strategic Balancing:** India needs to maintain strategic autonomy while strengthening ties with powers like the US, Japan, and Australia. Aligning without becoming dependent remains a delicate challenge.
- **Diverse National Interests:** India prioritizes securing its interests in the Indian Ocean, focusing on energy security and maritime trade routes, while the US, Japan, and Australia often emphasize the Pacific region over the Indian Ocean

The Indo-Pacific framework is a defining element of India's foreign policy, driven by changing geopolitics, particularly concerning China. It represents a proactive shift, emphasizing a rules-based order, economic integration, and maritime security. India employs strategic flexibility and issue-based collaboration.

Trump's Reciprocal Tariffs

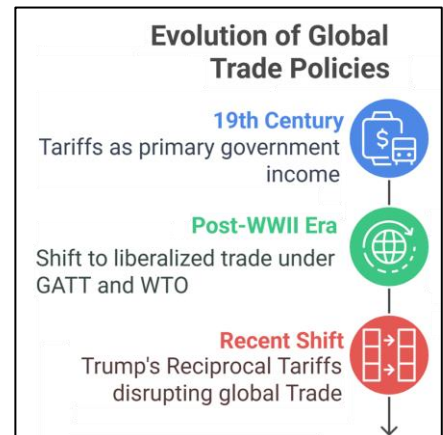
Context: On April 2, U.S. President Donald Trump declared the day as America's "Liberation Day," marking it with the announcement of reciprocal tariffs targeting major trading partners.

What Are Reciprocal Tariffs?

- Reciprocal tariffs refer to trade duties that one country imposes in response to similar actions taken by another. It follows a "tit-for-tat" strategy, where one country matches the other's tariff to protect its own economic interests.

Key Global Economic Impacts

- **Decline in Global Trade:** Agrifood trade (meat, dairy, oilseeds) may shrink by 3.3% without retaliation and 4.7% with retaliation. Oilseeds could see the largest drop-up to 8%. Industrial goods trade may fall by 7.9–10.2%, affecting jobs and production globally.
- **U.S.-China Trade Disruption:** Under full retaliation, U.S. exports to China could fall by 80%, nearly collapsing trade between the two. China redirects its exports through Mexico and Southeast Asia, complicating global supply chains.
- **Shift in Global Market Shares:** Countries like Brazil and Argentina gain in exports of soybeans, beef, and corn as the U.S. loses its foothold in China. This results in permanent changes in who supplies what to the global market.
- **GDP and Economic Growth Losses:** Global GDP may fall by 0.3–0.4%. U.S. GDP could drop -1.0% without retaliation and -1.2% with retaliation. Canada and Mexico might initially gain but later face slowdowns in full trade war scenarios.
- **Mixed Effects on Developing Regions:** Sub-Saharan Africa and parts of Asia see mild GDP changes but become more vulnerable to debt and financial instability due to shrinking trade.



Key Implications for India

- **GDP and Economic Growth:** A potential loss of \$31 billion highlights the seriousness of global trade tensions. The slowdown comes mainly from reduced exports, increased costs, and lower investor confidence. With the U.S. being a major trade and investment partner, any slowdown there can spill over into India's economy.
- **Trade Diversification:** Indian exporters may find new opportunities as global firms reduce reliance on China. India can attract investment in manufacturing, especially in electronics and pharmaceuticals.
- **Investment and Capital Flows:** A U.S. slowdown or recession may affect foreign direct investment (FDI) and portfolio flows into India. Global investors may become cautious, affecting stock markets and the rupee.

- **Electronics Sector:** In FY 2023-24, India exported \$10 billion worth of electronics to the US, accounting for 35% of its total electronics exports. New tariffs will reduce demand and hurt growth, especially for exporters like Dixon and other contract manufacturers.
- **Gems and Jewellery:** A 26% duty will now apply to cut and polished diamonds, which make up 57% of India's jewellery exports to the U.S. This could severely hurt exporters and jobs in states like Gujarat and Maharashtra.
- **Textiles and Apparel:** Though India exports \$9.6 billion in textiles to the U.S., the tariffs on Chinese (34%) and Vietnamese (46%) goods may make Indian textiles more competitive.

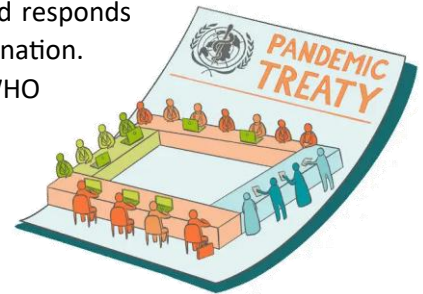
India should diversify its export markets, reduce reliance on the U.S., and strengthen domestic manufacturing in key sectors like electronics, textiles, and pharmaceuticals. Enhancing trade diplomacy, improving infrastructure, and ensuring policy stability will help attract investment and keep Indian exports competitive amid global tariff shifts.

WHO Global Pandemic Treaty

Context: After over three years of intense negotiations, WHO member states on May 20 adopted a legally binding treaty aimed at strengthening global response to future pandemics.

WHO Pandemic Agreement

- WHO Pandemic Agreement aims to ensure the world is better prepared for and responds more equitably to future pandemics, by promoting global cooperation and coordination.
- This legally binding treaty is the second of its kind under Article 19 of the WHO Constitution, following the 2003 Framework Convention on Tobacco Control.



Key Features:

- **Global Coordination Framework:** Establishes principles and tools for international collaboration in pandemic prevention, preparedness, and response.
- **Equitable Access to Health Products:** Ensures timely and fair access to vaccines, therapeutics, and diagnostics-especially for developing nations.
- **Pathogen Access and Benefit Sharing (PABS):** A new system to be negotiated that ensures fair sharing of pandemic-related materials and benefits among countries.
- **Respect for National Sovereignty:** Clearly states that WHO cannot override domestic laws or mandate specific actions like lockdowns or travel bans.
- **Financial and Logistical Mechanisms:** Proposes creation of a Coordinating Financial Mechanism and a Global Supply Chain and Logistics Network to improve access and delivery of pandemic-related health supplies.
- **Manufacturer Commitments:** Pharmaceutical companies in the PABS system must provide WHO with 20% of real-time production of vaccines, therapeutics, and diagnostics during emergencies.

Need for a Global Pandemic Treaty

- **Unequal Vaccine Distribution During COVID-19:** During the Omicron surge in late 2021, vaccine-producing nations stockpiled doses, leaving low-income countries with little to no access-exposing severe global inequities in pandemic response.
- **Preventable Loss of Lives:** A 2022 Nature study estimated that over one million lives could have been saved with equitable vaccine access. By then, COVID-19 had claimed over seven million lives worldwide.
- **Systemic Failures in Global Response:** A 2021 report by the Independent Panel for Pandemic Preparedness and Response cited poor decisions, inequality, and lack of global coordination as key reasons the pandemic became a humanitarian crisis.
- **Call for Coordinated Global Action:** In response, WHO member states began negotiating a pandemic treaty in December 2021. After 13 rounds of talks over 3.5 years, a draft agreement was finalized to improve preparedness, equity, and coordination.

Criticism of the Global Pandemic Treaty

- **Limited Authority of WHO:** The treaty does not grant WHO legal authority over national governments. Clause 24 clearly states WHO cannot enforce or alter any country's laws, including mandates on travel, lockdowns, or vaccinations.
- **No Enforcement Mechanism:** There is no global mechanism to ensure compliance. In future crises, countries may again act in self-interest-such as vaccine hoarding-without facing penalties, reducing the treaty's effectiveness.
- **Pharmaceutical Industry Concerns:** Industry leaders warn that vague rules on intellectual property and benefit-sharing may reduce incentives to invest in pandemic-related research. Legal uncertainty could hurt innovation and disrupt public-private collaboration.
- **Lack of Clarity in Key Provisions:** The Pathogen Access and Benefit Sharing (PABS) system is central to the treaty but lacks detailed guidelines, making implementation uncertain and possibly ineffective.
- **Absence of the United States:** The U.S. exited the WHO under Donald Trump's renewed presidency. As a key player in global health, its absence significantly diminishes the treaty's global reach and potential impact.

While the treaty is ambitious in scope, concerns over its limited enforceability, unclear provisions, and the absence of major players like the United States underscore the challenges ahead. Its success will ultimately depend on sustained political will, transparent implementation, and global solidarity to ensure that no country is left behind in the next health emergency.

Indian Defence Exports

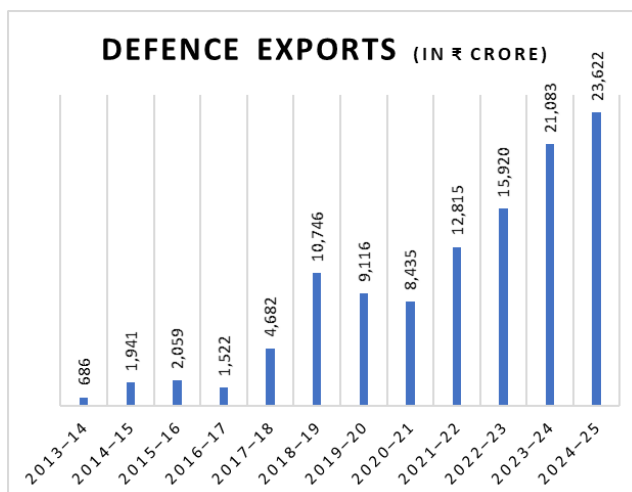
Context: The 12.04% growth in 2023–24 highlights the increasing global acceptance of Indian products and their growing integration into the global supply chain.

Significance of Rising Defence Exports

- **Strategic Influence:** Defence exports help India build alliances and enhance its geopolitical presence, strengthening its global standing.
- **Economic Impact:** In FY 2024–25, defence exports hit a record ₹23,622 crore (US\$2.76 billion), up from ₹686 crores in FY 2013–14, boosting revenue, forex reserves, and sector competitiveness.
- **Tech & Industrial Growth:** Export-led growth fuels innovation and global partnerships. The Nifty India Defence index rose over 30% in 2025- till June. reflecting strong investor confidence.
- **Domestic Benefits:** Export growth drives manufacturing, job creation, and a stronger defence industrial base. E.g. Defence Industrial Corridor in Uttar Pradesh has attracted investment commitments worth ₹30,000 crores, with the potential to generate around 50,000 jobs. As of now, ₹9,462 crores has been actually invested, expected to create 13,737 direct jobs.
- **Future Goals:** India aims to achieve ₹50,000 crores in annual defence exports by 2029, advancing its vision of becoming a global defence manufacturing hub.

Key Challenges to India's Defence Exports

- **Insufficient Domestic Production:** India's defence production has not grown fast enough to meet the increasing demand of its own armed forces. Despite a target of US\$26 billion by 2025, current production is inadequate (US\$ 15.34 billion in FY24). 'Make in India' (launched in 2014–15) has yet to significantly boost the share of domestic capital acquisition.
- **Slow Growth in DPSUs:** In FY 2024–25, DPSUs recorded a 42.85% growth in exports, but their total production still trails the private sector. Major export efforts by DPSUs have failed-for instance, HAL's Tejas



lost to South Korea's aircraft in Malaysia; GRSE missed a tender in the Philippines.

- **Lack of Technological Depth:** India still depends heavily on importing key parts and raw materials. Over 58% of India's defence procurement relies on licensed manufacturing (producing foreign-designed systems locally).
- **Delayed Implementation of Reforms:** Many policy reforms announced by the government are not fully implemented. Delays between policy, contract signing, and actual delivery slow down progress. Bureaucratic hurdles and procedural delays continue to be a major bottleneck.

Key Initiatives Propelling India's Defence Exports

- **Make in India and Atmanirbhar Bharat:** Promotes local defence manufacturing, reduces imports, boosts innovation, and strengthens India's position as a global defence supplier.
- **Defence Production and Export Promotion Policy (DPEPP) 2020:** Aims for \$5 billion exports by 2024–25 by easing procedures, offering incentives, and supporting defence manufacturers and exporters.
- **Increased Foreign Direct Investment (FDI) Cap:** FDI limit raised to 74% encourages global firms to invest, transfer technology, and form export-oriented joint ventures in India.
- **Defence Corridors:** Two defence corridors in Uttar Pradesh and Tamil Nadu offer infrastructure, policy support, and cluster-based development to attract investments.

For lasting success and self-reliance, key challenges must be addressed. Domestic production must grow to meet defence needs and cut imports. Stronger R&D is vital for indigenisation and core technologies. Faster, transparent procurement will boost efficiency and delivery. With ongoing reforms and focused efforts, India can emerge as a global hub for reliable, affordable defence solutions.

Indian Diaspora

Indian Diaspora

Context: The 18th Pravasi Bharatiya Divas (PBD) Convention was held in Bhubaneswar, Odisha, from 8–10 January 2025—the first PBD hosted in Eastern India.

About Indian Diaspora

- The term Indian Diaspora (term *diaspora* derived from Greek word diaspeiro, which means dispersion) is used to address the Indian citizens who have migrated to other parts of the world due to economic or political reasons.

Classification

- **Non-Resident Indians (NRIs):** These are Indian citizens who reside outside India for more than 182 days in a financial year. They retain their Indian citizenship but live abroad.
- **Overseas Citizens of India (OCIs):** This category includes foreign nationals of Indian origin who were either Indian citizens or have parents, grandparents, or great-grandparents who were Indian citizens. OCIs are granted a lifelong visa to visit India but do not hold full citizenship rights.
- **Persons of Indian Origin (PIOs):** PIOs are foreign citizens who have Indian ancestry. This category was merged with the OCI category in 2015, meaning that former PIO cardholders were encouraged to convert their cards to OCI status.

Factors Behind India's Large Diaspora

- **Historical Reasons:**
 - In the 19th–early 20th century, Indians were sent as Girmitiyas (indentured labourers) to British colonies in the East Pacific and Caribbean to work on plantations.
 - In the 1970s–80s, the oil boom attracted Indian workers to Gulf countries for better job prospects and income.
- **Economic Factors:** Job scarcity in India pushed many to seek employment abroad. As per the World Migration Report 2024 (IOM), India was the top origin country for international migrants, with 40% of the world's 115 million migrants in 2020 born in Asia.

- **Educational Aspirations:** Families aspire for better futures via foreign education. Indian students studying abroad are expected to rise from 1 million (2019) to 2 million by 2025 (Indian Student Mobility Report 2023).
- **Golden Visa Trends:** Wealthy Indians are opting for golden visas offered by countries like the US, UK, Canada, and Australia, granting them full residency rights. In 2022, Indians made up 9.4% of global golden passport applicants.
- **Better Lifestyle:** High taxes, remittance restrictions, and desire for improved quality of life-like better healthcare, education, clean air, and infrastructure-prompt High Net Worth Individuals to migrate.

Significance of the Indian Diaspora

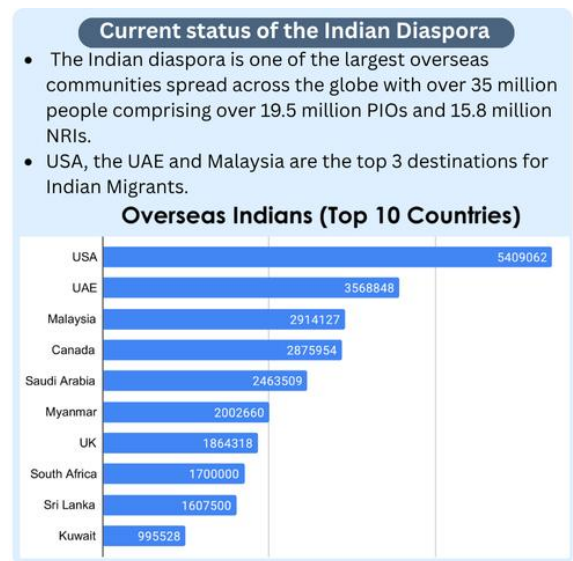
- **Economic Contributions:** The Indian diaspora boosts the Indian economy through Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), and remittances. In 2024, India received an estimated \$129.1 billion worth of remittances, making it the top global recipient. These funds are the second-largest source of external finance after service exports.
- **Cultural Influence:** Overseas Indians promote Indian culture, language, festivals, and traditions in their host countries. Events like International Yoga Day (June 21) are celebrated globally, enhancing India's soft power.
- **Technology and Knowledge Transfer:** Many diaspora members work in research, tech, and innovation. They often collaborate with Indian firms or institutions. For example, Microsoft CEO Satya Nadella announced the ADVANTA(I)GE INDIA initiative to train 2 million Indians in AI by 2025.
- **Political Impact:** Diaspora communities lobby for policies favourable to India. Leaders like Rishi Sunak and Sundar Pichai strengthen India's global image and diplomatic influence.
- **Diplomatic Relations:** The diaspora acts as cultural ambassadors, aiding India's soft diplomacy. During the Indo-US Nuclear Deal, Indian-Americans successfully lobbied U.S. lawmakers, influencing foreign policy decisions.

Challenges Faced by the Indian Diaspora

- **Regional Conflicts:** Indians in conflict zones (e.g., Yemen, Israel–Palestine) face risks due to political instability in West Asia.
- **Job Losses:** Factors like the global slowdown, shale gas boom, and competition from countries like the Philippines and Nepal affect employment-especially for low- and semi-skilled Indian workers.
- **Labour Exploitation:** Migrants often face harsh conditions due to language barriers and lack of legal protection. The Kafala system in Gulf countries is a major concern.
- **Discrimination and Racism:** Diaspora members face racial violence and exclusion. For example, Indians in South Africa have reported increasing marginalisation.
- **Immigration Barriers:** Strict immigration policies (e.g., H-1B visa restrictions in the U.S. during Trump era) create uncertainty and insecurity for Indian workers and students.
- **Demand for Dual Citizenship:** Many diaspora members seek dual citizenship to maintain ties with India while enjoying rights in their host country-an issue still unresolved in India.
- **Cultural Integration:** Differences in values and practices sometimes lead to friction and misunderstanding between Indian communities and host societies.

Government Initiatives to engage with the Indian Diaspora

- **Pravasi Bharatiya Divas (PBD):** A biannual event by the Ministry of External Affairs to celebrate the Indian Diaspora and connect them with their roots.
- **Pravasi Bharatiya Samman Award:** The highest honor for NRIs, PIOs, or their organizations, initiated in 2003.



- **Know India Program:** Familiarizes young Indian Diaspora (aged 18-30) with their heritage and contemporary India.
- **Swarna Pravasi Yojana:** Enhances the employability of Indian workers abroad through training.
- **Indian Community Welfare Fund (ICWF):** Provides financial aid to distressed Indian nationals overseas.
- **Madad Portal:** An online grievance redressal system for emigrants.
- **e-Migrate System:** Regulates the Emigration Check Process for less educated workers seeking overseas employment.

The Indian diaspora contributes to India's economic growth and global standing, but faces challenges like cultural identity, assimilation, job security, and discrimination. A clear policy document should guide community engagement, introduce rehabilitation and skill upgradation schemes for jobless migrants, and centralize migrant databases for welfare implementation.

Dunkey Route

Context: Over 100 Indians were deported after attempting the risky "donkey route" to enter the US illegally.

What is the "Donkey Route"?

- The "donkey route" also called "Dunki" is a **risky, illegal path migrants take to enter the US or Europe in search of better jobs and living conditions**. 'Dunki', a regional pronunciation of donkey, is said to have originated from a Punjabi idiom that means "hopping from one place to another".
- Migrants are often misled by agents who promise legal entry but send them through multiple countries and dangerous terrains, charging huge fees and exposing them to arrest, exploitation, or even death.
- There are about **7,25,000 illegal immigrants from India living in the US**. Indians are the third-largest group of undocumented immigrants in the US, according to a 2024 Pew Research report.



Reasons for Increased Use of the Donkey (Dunki) Route

- **Economic and Social Factors**
 - **Unemployment and Lack of Jobs:** States like Punjab, Haryana, and Gujarat face high joblessness, pushing youth abroad. Youth Unemployment Rate in Punjab was about 14.9% in 2024, above the national average.
 - **Better Pay and Life Abroad:** Even qualified individuals often struggle to find suitable employment in India, but can earn significantly more overseas, making migration highly attractive.
 - **Social Pressure to Migrate:** Communities like Patels in Gujarat, Sikhs in Punjab, view migration as a status symbol, driving families to take loans or sell assets.
- **Legal and Procedural Barriers**
 - **Few Legal Avenues:** Visa rules for countries like the US, UK, and Canada are slow, uncertain, strict, and costly.
 - **Lack of Valid Documents:** Many lack the proper visas or permits, making legal migration impossible.
- **Operational Factors**
 - **Human Trafficking Networks:** Agents run well-organized, costly smuggling operations, luring migrants with false promises.
 - **Easy Entry into Transit Countries:** Some Latin American countries, such as Ecuador, Bolivia, and Guyana, offer visas on arrival or easy tourist visas for Indians, making them popular transit points for the Dunki route.
 - **Multiple Risky Routes:** Migrants use a variety of routes, including through Central America, Russia, Turkey, and Southeast Asia, often involving dangerous overland treks and the use of fake documents.

- **Cultural and Historical Context**

- **Long History of Migration:** Regions like Punjab have a longstanding tradition of international migration, with many households having at least one member abroad, reinforcing the aspiration to migrate.
- **Perceived Success Stories:** Stories of successful migrants who have settled abroad encourage others to attempt similar journeys, despite the risks.

Government Initiatives to Address the Dunki (Donkey) Route

- **Monitoring & Data Collection:** The Ministry of External Affairs (MEA) tracks Indian workers holding Emigration Check Required (ECR) passports through the e-Migrate portal for 18 ECR countries.
- **Crackdown on Fraudulent Agents:** The government has blacklisted 3,094 unregistered agents as of October 2024, many of whom operate from Punjab.
- **Awareness Campaigns:** MEA conducts awareness drives across the country through the e-Migrate portal, social media, and public sessions to warn citizens about illegal migration.
- **Support for Legal Migration:** The government promotes legal pathways by signing **Migration and Mobility Partnership Agreements (MMPAs)**, **Labour Manpower Agreements (LMAs)**, and MoUs with various countries.
- **Pre-Departure Support:** Initiatives like Pravasi Bharatiya Bima Yojana (PBBY) and Pre-Departure Orientation Training (PDOT) prepare migrants for safe and informed travel abroad.
- **UN Convention Ratification:** India has ratified the United Nations Convention on Transnational Organised Crime (UNTOC) to strengthen global action against human trafficking and smuggling networks.

Curbing the Dunki route requires addressing the aspirations, desperation, and misinformation that drive illegal migration. By combining better domestic opportunities, safe migration alternatives, and coordinated global efforts, India can ensure that its citizens pursue prosperity without risking their lives and dignity.

ECONOMY

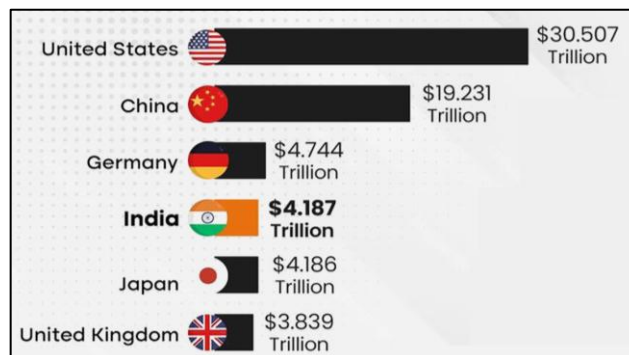
Economic Growth and Development

India 4th Largest Economy

Context: The NITI Aayog CEO recently stated that India has become the fourth-largest economy in the world. This claim is based on the latest World Economic Outlook report by the International Monetary Fund (IMF), which projects India to become the 4th largest economy by 2025, behind only the United States, China, and Germany.

Key Highlights

- India's nominal GDP is projected to rise to \$4,187.017 billion, surpassing Japan's estimated \$4,186.431 billion.
- India remains the world's fastest-growing major economy, and is the only country expected to record over 6% growth for the next two years.
- By 2028, India's GDP is expected to reach \$5,584.476 billion, overtaking Germany to become the third-largest economy globally.



Factors Driving India's Economic Growth

- **Structural Reforms & Strategic Investments:** Reforms like GST, Insolvency Code, and PLI improved tax compliance and industrial output. Policy continuity and digital push support long-term economic growth.
- **Prudent Fiscal & Monetary Policy:** Stable fiscal and monetary policies ensured macroeconomic stability. RBI began rate cuts in 2025, while inflation remains within the 4–6% target.
- **Services & Technology Sector:** The services sector contributes over 50% to GDP. Digital economy growth, UPI surge, and IT exports drive foreign investment and innovation.
- **Rising Domestic Consumption:** Private consumption rose by 6.9% in Q3 FY25. Rural FMCG sales and rising urban incomes reflect strong domestic demand across sectors.
- **Manufacturing, Construction & Infrastructure:** Electronics exports touched \$29.1Bn in FY24. Capital expenditure in infrastructure has grown rapidly, led by schemes like Gati Shakti and NIP.
- **Geopolitics & Supply Chain Shifts:** India benefits from China+1 strategy amid global realignment. Sectors like pharma, semiconductors, and electronics gain from US tariff exemptions, boosting investment.

Challenges faced by Indian Economy

- **Low Per Capita GDP:** Despite being the 4th largest economy, India's GDP per capita remains low, only \$2,800 (ranked 143rd) compared to Japan's \$33,900 (ranked 34th), reflecting limited individual prosperity.
- **Widening Trade Deficit:** Sluggish global demand and tariff tensions have dampened exports, particularly in IT and manufacturing. Meanwhile, a rising import bill has expanded India's trade deficit to USD 78.12 billion in FY24.
- **Persistent Income Inequality:** Economic growth hasn't translated into equal gains. A large section of the population still lacks access to quality jobs, education, and basic services. India's income inequality in 2023 (Gini: 0.410) remained higher than in 1955 (0.371).
- **Weak Private Investment:** Despite healthy corporate finances, private investment remains sluggish. In FY24, its share in gross fixed capital formation fell to 32.4%, an 11-year low, down from 40% in FY16. This hampers industrial growth and job creation.
- **High Public Debt:** India's debt-to-GDP ratio, currently at 83%, raises concerns over fiscal sustainability and limits space for large-scale social and climate investments.

- **Global Economic Headwinds:** Geopolitical tensions, trade disruptions, and interest rate hikes in major economies could hurt India's export-driven sectors and investor confidence.

Way Forward

- To become a true economic superpower, India's growth must be inclusive- extending beyond metros, formal sectors, and high-income groups.
- Focus areas include skill development, job creation, financial inclusion, and technological innovation to empower all sections of society.

Strengthening MSMEs, promoting inclusive policies, and enabling banks and financial institutions to act as engines of growth are crucial for long-term transformation.

Informal Sector in India

Context: MoSPI released the 2023-24 Annual Survey of Unincorporated Sector Enterprises for October 2023 to September 2024.

Meaning of the Informal Sector of the Economy:

- In India, the terms informal sector and unorganised sector are used interchangeably.
- The informal sector includes all **unincorporated private enterprises owned by individuals or households**, typically with fewer than 10 workers, and operated on a proprietary or partnership basis.
- It also **covers domestic workers, contributing family workers, casual day laborers**, and even some workers in the formal sector **who lack social security benefits**
- This sector contributes over 44% to India's Gross Value Added (GVA) and provides jobs to nearly 75% of the non-agricultural workforce.

Present Status of India's Informal Sector

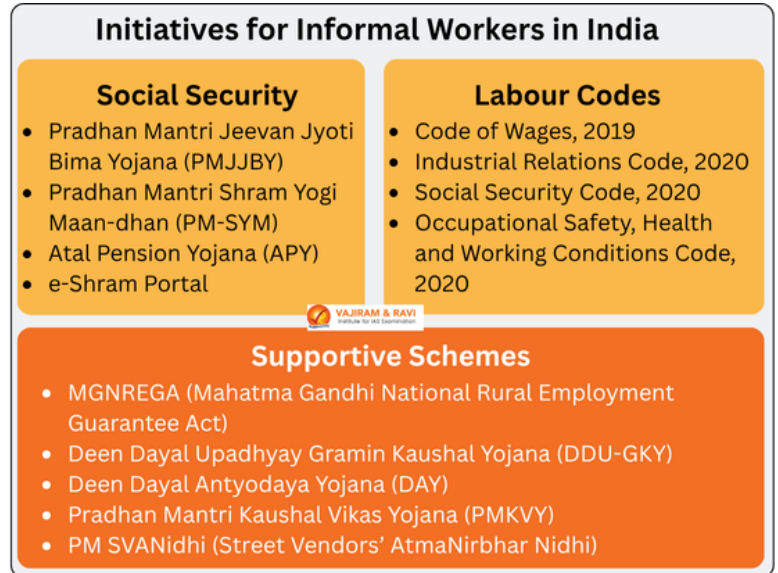
- **Employment Distribution:** About 50% of informal workers are in agriculture; 15-20% in construction and manufacturing. Gig and domestic work are rising but remain largely unregulated.
- **Wages and Inequality:** Only 10% earn over ₹10,000/month. Women earn ~35% less than men. Income gaps persist across caste and regions.
- **Social Security Gaps:** Less than 20% have access to pensions, insurance, or maternity benefits. Existing schemes suffer from low coverage and implementation issues.
- **Migrant Vulnerabilities:** More than 100 million migrants face poor housing, lack of benefit portability, and insecure jobs, especially in industrial states.
- **Gig Economy Growth:** Platform jobs are increasing in delivery and transport but lack regulation, social security, and bargaining power.



Challenges of the Informal Sector in India

- **Lack of Social Security:** Most informal workers do not have access to pensions, health insurance, maternity benefits, or paid leave. Over 76% lack coverage under any scheme.
- **Low Budgetary Support:** India spends just 1.3% of its GDP on public social protection (excluding health), with even less reaching informal workers. This underfunding limits the coverage and impact of welfare schemes.
- **Low and Unequal Wages:** Many are paid below the legal minimum wage. Women and marginalized groups face wage discrimination. Income remains unstable due to informal contracts and lack of enforcement.

- **Poor and Unsafe Working Conditions:** Long hours, no job safety, and lack of protective gear, especially in construction, mining, and brick kilns. India reports the highest workplace deaths globally, at around 48,000 per year.
- **Job Insecurity & Precarious Employment:** Seasonal work (e.g., farming, street vending) and daily wage jobs offer no employment guarantee. Sudden income loss during crises like COVID-19 highlights the sector's fragility.
- **Limited Legal Protection:** Many informal jobs (like domestic work) are not covered under key labour laws, leaving workers open to exploitation. Implementation of Labour Codes (2020) remains weak.
- **Lack of Collective Bargaining Power:** Informal workers often can't unionize or negotiate better conditions. They lack institutional representation and voice in policy making.
- **Health and Occupational Hazards:** Workers like waste pickers and recyclers face serious health risks without basic healthcare or safety equipment. Child labour is still prevalent in many informal industries.
- **Institutional Barriers and Harassment:** Lack of official recognition or registration exposes informal workers (especially street vendors) to eviction, fines, and exploitation by local authorities.



A multi-pronged strategy focused on universal coverage, legal reforms, skill enhancement, and targeted welfare, is essential to uplift this workforce and align their contribution with India's broader growth and development goals.

Consumption-led Economic Growth

Context: India's growth has been largely driven by consumption. The HCES 2023-24 reveals key shifts in consumption patterns, food spending, and regional inequality.

What is Consumption-led Growth?

- It is an economic model where **household spending on goods and services becomes the key driver of GDP growth**, as opposed to investment or exports.
- Private consumption consistently accounts for around **60% of India's GDP**, making it a critical engine of growth. In India, a young population, rapid urbanisation, expanding digital access, and growing middle-class aspirations have supported such a model.

Key Features and Trends

- **High Share of Consumption in GDP:** In 2023, private consumption made up 60.3% of India's GDP, compared to just 39.1% in China. Personal Final Consumption Expenditure (PFCE) has closely tracked GDP growth, especially from 2012-13 to 2022-23, with both moving in tandem.
- **Demographic Driver:** India's large and youthful population (over 55% below age 30) provides a demographic dividend, supporting sustained consumption growth.
- **Digital - Urban Economy:** Rising incomes, urbanisation, digitalisation, and aspirational lifestyles are fueling demand for a wide range of goods and services, from FMCG and consumer durables to e-commerce and entertainment.

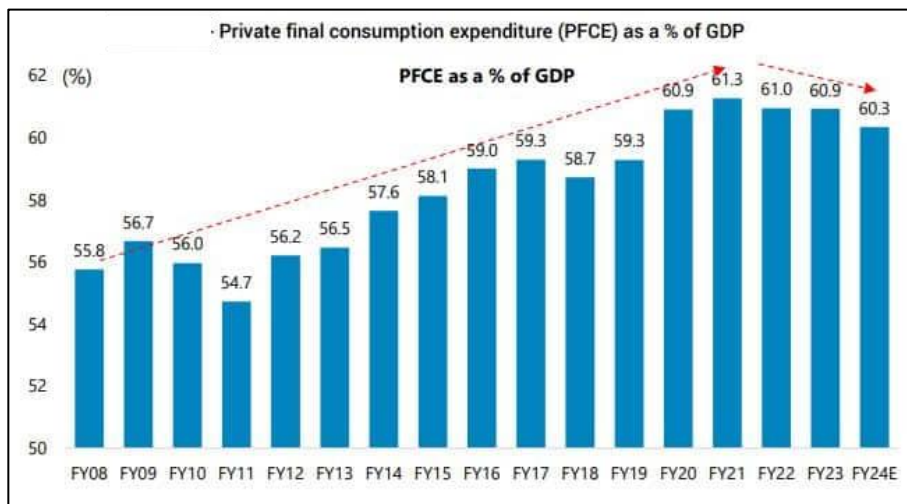
• **Government Policies:**

Schemes like PM-KISAN, free LPG/electricity, and food security boost rural consumption. GST reform simplified indirect taxation but may have impacted small businesses and consumption.

• **Urban-rural expenditure gap:**

The difference in average monthly consumption expenditure between rural and urban households narrowed to 69.7% in 2023-24 from 71.2% in 2022-23. The

gap has consistently reduced over the last decade, indicating stronger growth in rural consumption spending.



Merits of Consumption-led Growth	Limitations and Risks
• Immediate Demand Boost: Consumption-driven growth provides a quick boost to aggregate demand, supporting production and job creation in the short term. • Resilience during Crises: Domestic demand helped cushion global shocks, especially during the 2008 recession and COVID-19. • Poverty Reduction: Improved consumption, especially in food and housing, is linked to falling poverty rates. • Services Sector Boost: Rising consumption has created jobs in services like retail, hospitality, logistics, and fintech.	• Lower Multiplier Effect: Consumption-led growth has a lower economic multiplier compared to investment-driven growth, which stimulates long-term capacity expansion and productivity. • Low Investment-to-GDP Ratio: Excessive focus on consumption reduces room for capital formation and productivity enhancement. • Rising Inequality: Urban, educated elites consume more, while rural and low-income groups face stagnating consumption. • Household Debt: Growing use of personal loans and EMIs may lead to financial stress and reduced future consumption. • Trade Deficit: High reliance on imports to meet domestic demand can widen the trade deficit, draining domestic resources.

Policy Recommendations

- **Skill Harmonisation:** Align skilling programmes with global and domestic job market needs. Prevent underemployment and enhance job quality to sustain consumption.
- **Balanced Growth Strategy:** Encourage investment and exports alongside consumption. Improve ease of doing business, especially for MSMEs and startups.
- **Strengthening Rural Demand:** Expand rural infrastructure and MGNREGA-like programs. Promote agri-value chains and non-farm rural employment.
- **Financial Prudence:** Monitor household debt levels. Promote financial literacy to prevent over-leverage.
- **Digital Inclusion:** Expand digital infrastructure and literacy to enable broader participation in the consumption economy.

To ensure sustainable and inclusive development, consumption led growth must be balanced with investment-led and export-driven strategies. Policymakers must focus on improving rural demand, reducing inequality, increasing productive employment, and ensuring that rising consumption is underpinned by rising income and productivity, not just credit.

Circular Economy

Context: India launched the Cities Coalition for Circularity (C-3), a global alliance promoting city-level collaboration and circular economy practices like reuse, repair, and recycling.

What is Circular Economy?

- A circular economy is an economic system **focused on minimizing waste** and making the most of resources by **keeping products, materials, and resources in use for as long as possible**.
- It involves practices like sharing, leasing, reusing, repairing, refurbishing, and recycling, so that the life cycle of products is extended and waste is reduced to a minimum.
- Unlike the traditional linear economy (take-make-consume-dispose), the circular model avoids overuse of natural resources and reduces environmental impact by creating continuous value from existing materials.

Significance of Circular Economy

- **Economic Benefits and Job Creation:** Circular practices could create 700,000 jobs by 2030 and save \$380-630 billion annually through better design, innovation, and efficient resource use.
- **Supply Chain Resilience and Innovation:** Reusing materials strengthens supply chains, reduces reliance on scarce raw materials, and enhances resilience against shortages and price fluctuations, especially in tech sectors.
- **Consumer and Societal Benefits:** Consumers gain durable, cost-saving products; society benefits from resource security, making development sustainable beyond the outdated take-make-dispose economic model.
- **Climate and Global Resource Impact:** Only 8.6% of materials are reused today; doubling this by 2032 is vital to limiting global warming to 1.5°C and preventing resource exhaustion.
- **Environmental Protection and Resource Efficiency:** Circular economy reduces habitat loss, slows resource use, and may cut global greenhouse gas emissions by 39% and raw material use by 32%, aiding climate action.

Challenges

- **Corporate Strategy and Policy Barriers:** Lack of clear circular economy strategies within companies limits their ability to adopt sustainable practices and integrate circular models into core operations.
- **Financial Barriers:** High upfront investment and unproven profitability make firms hesitant to adopt circular projects, limiting the shift from traditional business models.
- **Technological Barriers:** Many companies lack access to advanced technologies required for circular practices, which hinders innovation and slows circular economy implementation.
- **Product Material and Design Barriers:** Some materials can't be reused without losing quality. Designing products for reuse or recycling is complex and technically challenging.
- **Transformation Process Barriers:** Circular economy often lacks priority in company agendas, and its complexity requires expertise that many organizations currently do not have.
- **Cooperation Barriers:** Circular projects need strong partnerships, but unequal commitment or unclear benefits often make cooperation between companies and consumers difficult.
- **Supply Chain Barriers:** Lack of integration, trust, and transparency across supply chains hinders reverse logistics and material reuse essential for a circular system.
- **Regulatory Barriers:** Current policies support linear models; missing regulations, incentives, and clear standards obstruct a smoother transition to circular practices.



- **Social and Consumer Barriers:** Consumers often prefer traditional products, distrust reused goods, and resist product-as-a-service models, making adoption of circular habits difficult.
- **Limited Infrastructure:** Developing nations often lack the necessary infrastructure for waste collection, recycling, and reverse logistics.

Global Initiatives for Circular Economy

- **Cities Coalition for Circularity (C-3):** Launched by India, aimed at fostering city-to-city collaboration, knowledge-sharing, and private sector partnerships.
- **Platform for Accelerating the Circular Economy (PACE):** A global public-private partnership that accelerates the transition to a circular economy.
- **Global Alliance on Circular Economy and Resource Efficiency (GACERE):** Aims to advance a global, just transition to a circular economy and more sustainable resource management.

National Initiatives for Circular Economy

- **Swachh Bharat Mission:** Encourages waste segregation, recycling, and cleaner cities.
- **Smart Cities Mission:** Integrates sustainability into urban planning and infrastructure.
- **Extended Producer Responsibility (EPR):** Makes producers responsible for managing the entire lifecycle of their products, including disposal.
- **GOBAR-Dhan Scheme:** Operational in 67.8% of districts, it supports waste-to-energy conversion using organic and cattle waste.

To advance the circular economy, India must reform regulations, invest in recycling infrastructure, promote innovation, and support MSMEs. Public awareness, industry collaboration, and global partnerships like C-3 are vital. A national strategy with measurable goals will help shift from a linear to a sustainable circular model.

Pradhan Mantri MUDRA Yojana

Context: Pradhan Mantri MUDRA Yojana (PMMY) the flagship programme for funding the unfunded micro enterprises and small businesses completed 10 years.

About Pradhan Mantri MUDRA Yojana (PMMY)

- Launched in 2015, PMMY provides collateral-free loans to non-corporate, non-farm small and micro-entrepreneurs for income-generating activities.
- Loans are disbursed through banks, NBFCs, microfinance institutions, and other recognized lending bodies.
- Any individual with a viable business plan for a small enterprise can apply under this scheme.
- Initially, loans were offered for activities in manufacturing, services, trading, and agriculture-allied sectors, across three categories:
 - **Shishu:** Loans up to ₹50,000
 - **Kishor:** Loans above ₹50,000 and up to ₹5 lakh
 - **Tarun:** Loans above ₹5 lakh and up to ₹10 lakh
 - **Tarun Plus:** Loans from ₹10 lakh to ₹20 lakh. *This is available to entrepreneurs who have successfully repaid earlier loans under the Tarun category*
- All PMMY loans up to ₹20 lakh are covered under the Credit Guarantee Fund for Micro Units (CGFMU), ensuring credit protection for lenders.

Achievements under Pradhan Mantri MUDRA Yojana (PMMY)

1. Lending Growth and Scale-Up

- **52 crore loans** worth ₹32.61 lakh crore have been sanctioned since 2015.
- **₹27.25 lakh crore** was the **MSME** lending in FY24, up from ₹8.51 lakh crore in FY14; it's expected to cross ₹30 lakh crore in FY25.
- **20% is the MSME credit** share in total bank credit in FY24, rising from 15.8% in FY14.



- **₹3.23 lakh crore is the highest disbursal among states, recorded by Tamil Nadu** (as of Feb 2025), followed by Uttar Pradesh, Karnataka, West Bengal, and Bihar.
- **44.7%** is the share of **Kishor loans** in FY25.
- **3x increase in average loan size:** from ₹38,000 in FY16 to ₹1.02 lakh in FY25.

2. Women Empowerment through PMMY

- **68%** of Mudra beneficiaries are women.
- **₹62,679** is the average per-woman loan disbursed in FY25.
- **₹95,269** is the average per-woman deposit.

3. Social Inclusion

- **50%** of Mudra accounts are held by **SC, ST, and OBC entrepreneurs**.
- **11%** of loan holders **belong to minority communities**.

Issues and Challenges in PMMY (*Insights from NITI Aayog-KPMG Impact Assessment Report*)

- **Regional Disparities:** Only ~4% of the total PMMY accounts and sanctioned amounts (2015-2022) went to the Northeast region. This share has declined year after year since FY 2018, showing limited regional outreach.
- **Rising NPAs among Mudra Accounts:** NPA accounts grew at a CAGR of 22.51% and NPA amounts at 36.61% between FY17 and FY22, indicating increasing repayment stress.
- **Sectoral NPA Variation:** Public sector banks reported the highest NPAs at 22.6%, while NBFCs had the lowest at just 1.3%, highlighting performance gaps among lenders.
- **Loan Category-wise NPAs:** Kishor loans had the highest share of NPAs, whereas Shishu loans had the lowest, reflecting lower risk in micro-loans.
- **Guarantee Coverage Limitations:** A 15% ceiling on CGFMU payouts restricts the amount covered in case of defaults, reducing incentives for banks to lend freely.
- **Complicated Claim Process:** The claim settlement process under CGFMU is complex, with issues like difficult XML formats, high error rates, and slow upload speeds.
- **High Transaction Costs:** High guarantee fees and refinancing rates increase the cost burden for lending institutions, affecting credit affordability.
- **Lack of Collateral Security:** Absence of collateral increases security risks for lenders, especially in higher loan categories.
- **Weak Institutional Framework:** There is no centralized database to collect and monitor PMMY-related data, limiting transparency and coordination.
- **Low Inclusion in Weaker Sections:** Credit penetration remains poor among weaker sections and in underdeveloped areas, defeating the scheme's inclusive aims.
- **Absence of Digital Grievance Redressal:** There is no robust digital platform to resolve queries related to guarantee covers, operational delays, or technical guidelines.

Strengthening digital infrastructure, improving awareness, and enhancing accountability mechanisms will be key to ensuring that PMMY continues to empower small entrepreneurs and drive inclusive growth in the years to come.

Financial Inclusion

Context: India recently marked 10 years of the Pradhan Mantri Jan Dhan Yojana (PMJDY), a flagship initiative launched to advance financial inclusion across the country.

What is Financial Inclusion?

Financial inclusion refers to the process of ensuring that individuals and businesses have access to affordable and appropriate financial products and services, such as savings, credit, insurance, and payment systems, that are delivered in a responsible and sustainable manner.

Foundations of Financial Inclusion



Access

Ensuring financial services are available to all, especially marginalized groups.



Usage

Promoting regular and effective use of financial products.



Affordability

Providing services at reasonable costs for low-income individuals.



Quality and Safety

Delivering services responsibly with consumer protection.

Significance of Financial Inclusion

- **Poverty Reduction and Economic Growth:** About 1.4 billion adults remain unbanked globally. Financial inclusion enables access to credit and savings, supporting small businesses, reducing poverty, and boosting employment, which contributes to higher GDP and inclusive economic growth.
- **Empowerment of Marginalized Groups, Especially Women:** With 56% of women unbanked globally, financial inclusion empowers them to manage money, start businesses, and gain independence. Models like Grameen Bank and M-Pesa show its positive impact on women's participation.
- **Resilience:** Savings and credit services help individuals and businesses withstand financial shocks. Insurance protects against health and disaster risks. Growing access to these services enhances stability and recovery during crises, especially in vulnerable regions.
- **Social and Economic Equality:** Financial inclusion bridges gaps across gender, income, and geography. It reduces inequality, promotes fair wealth distribution, and empowers underserved communities. Yet, account ownership gaps by gender (7%) and region (15%) remain significant.

Current State of Financial Inclusion in India

- **Bank Account Ownership:** As per the World Bank's Global Findex Database (2021), 78% of Indian adults have a bank account. However, actual usage of these accounts and access to formal credit remain limited.
- **Digital Payments:** UPI transactions grew at a CAGR of 129%, from 92 crore in FY 2017-18 to **13,116 crore in FY 2023-24**, highlighting rapid digital adoption.
- **Gender Disparity:** A MOSPI statement said that the report highlights that women own 39.2% of all bank accounts and contribute to 39.7% of total deposits, pointing to a persistent gender gap in financial access and empowerment.
- **Informal Banking:** Many low-income and rural populations still rely on informal financial sources such as moneylenders and community savings groups, which are often expensive and unreliable.
- **Financial Inclusion Index (FI-Index):** The Financial Inclusion-Index rose to 64.2 in March 2024, up from 60.1 in March 2023, showing improvement across dimensions of access, usage, and quality of financial services.

Challenges to Financial Inclusion in India

- **Demand-Side Barriers:** Low-income levels, limited asset ownership, and high transaction costs often discourage people from accessing formal financial services. A widespread lack of awareness about available products and their benefits further deepens exclusion.
- **Supply-Side Constraints:** Financial institutions frequently hesitate to serve low-income or non-profitable customers with irregular incomes. This results in limited outreach to rural and vulnerable populations, reinforcing existing financial disparities.
- **Digital Divide:** Limited access to smartphones and internet excludes the poor and rural populations, with the richest 60% four times more likely to use digital payments.
- **Low Financial Literacy:** A large rural population lacks financial literacy, leading to poor use of services. About 20% of PMJDY accounts are dormant and 8.4% have zero balance, indicating underutilization.
- **Gender and Socio-Cultural Barriers:** Women often face greater challenges in accessing financial services due to lower literacy levels, cultural norms, and restricted mobility. These barriers contribute to a persistent gender gap in financial inclusion.
- **Regulatory Hurdles:** Stringent Know-Your-Customer (KYC) norms, while important for security, can be difficult for low-income individuals to comply with due to lack of proper identification or documentation, limiting their access to formal banking.
- **High Cost of Financial Services:** For economically weaker sections, high interest rates, service fees, and transaction costs make formal financial services unaffordable, leading to continued reliance on informal sources.
- **Cybersecurity Risks:** Growing digitization has increased vulnerability to cyber fraud, deterring user trust. Over ₹2,000 crores was lost in 2.92 lakh cyber fraud cases in FY24, affecting especially first-time digital users.

Financial Inclusion Initiatives in India

- **Pradhan Mantri Jan Dhan Yojana (PMJDY):** Launched in 2014 to provide zero-balance bank accounts, overdraft, and insurance, opening over 53 crore accounts for inclusive financial access.
- **Pradhan Mantri Mudra Yojana (PMMY):** Provides collateral-free loans to micro and small enterprises; over ₹23 lakh crores disbursed, boosting entrepreneurship and job creation.
- **Unified Payments Interface (UPI):** A smartphone-based real-time digital payment system that processes over 14 billion monthly transactions.
- **Banking Correspondents Model:** Deploys agents in remote, unbanked areas to offer basic banking services like deposits, withdrawals, and loans, promoting rural financial inclusion.
- **Kisan Credit Card (KCC):** Introduced in 1998 to offer hassle-free, collateral-free credit to farmers for short- and medium-term agricultural needs through simplified banking access.
- **Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY):** Offers low-cost term life insurance to PMJDY account holders, promoting financial protection among the poor and underserved.
- **Digital Literacy Programs:** Under Digital India, these programs train citizens- especially in rural areas, to use digital platforms for accessing financial and government services.
- **National Strategy for Financial Inclusion (NSFI) 2019-2024:** Led by RBI, NSFI aims to build a robust, inclusive financial system ensuring credit access, digital literacy, and consumer protection by 2024.

Moving forward, bridging these gaps requires a collaborative approach: enhancing digital infrastructure, strengthening financial education, leveraging fintech innovations, and tailoring services for underserved groups. A truly inclusive financial ecosystem will not only ensure economic equity but also lay the foundation for sustainable national development.

Employment and Skill Development

Paradox of Stagnant Rural Wages

Context: India's economy has seen strong growth, averaging 7.8% in the past three years, with agriculture growing steadily at around 3.6%-4.2%.

- However, Average real rural wage growth from 2019-20 to 2023-24 was -0.4%, and only 0.2% for agricultural wages.

Reasons for the Paradox

- **Supply-Side Pressure from Rising Female LFPR:** Female Labour Force Participation Rate (LFPR) rose sharply, especially in rural India- from 26.4% in 2018-19 to 47.6% in 2023-24. This increase, while positive socially, has increased the supply of rural labour, leading to wage suppression due to more people competing for limited jobs.
- **Agriculture-Dominated Employment:** Majority of new female workforce entrants are working in agriculture, not higher-paying non-farm sectors. Share of women in agriculture rose from 71.1% to 76.9%, indicating a shift from home to farm, not to factories/offices.
- **Capital-Intensive Economic Growth:** GDP growth has been driven by capital-heavy sectors (e.g., infrastructure, steel, cement), which generate fewer jobs per unit of output. This results in profits rising, but wages not keeping pace, especially for rural, low-skilled workers.
- **Low Demand for Non-Agricultural Labour:** Real wages in non-farm rural occupations have declined, showing weak demand for labour in services and small-scale industries.
- **Deep Crisis in the Informal Sector:** As per ASUSE surveys, Real wage growth in rural unincorporated enterprises fell from 6.6% (2010-2015) to just 0.1% (2015-2023). Even after ignoring COVID-affected years, post-2015 growth is below 2%. This highlights a crisis in informal employment, affecting the majority of rural workers.

Effects and Impacts

- **Widening Rural–Urban Inequality:** In 2023–24, average monthly per capita expenditure was ₹4,122 in rural areas compared to ₹6,996 in urban areas, highlighting growing inequality.
- **Weakened Rural Demand:** Falling purchasing power in rural areas is hurting consumption-driven sectors like FMCG, two-wheelers, and household durables. FMCG companies reported a decline in rural sales in FY24 (e.g., Hindustan Unilever saw a 4% drop, Dabur a 6.4% fall in Q3).
- **Rising Social Stress and Underemployment:** More people, especially women, are working longer hours for lower pay, leading to disguised unemployment and social strain.
- **Slower Poverty Reduction:** Although extreme poverty has declined across India, the pace is slower in rural areas. In rural India, extreme poverty fell from 18.4% in 2011–12 to 2.8% in 2022–23. In urban areas, it dropped more sharply from 10.7% to 1.1% in the same period.

Government Initiatives and Their Role

- **Welfare Schemes:** Ujjwala Yojana (clean cooking gas), Swachh Bharat Abhiyan (toilets), Har Ghar Jal (tap water), Saubhagya (electricity), etc. helped women save time on household chores and join the labour force.
- **Direct Income Support:** **PM-KISAN** (₹6,000/year to 11 crore farmers), Cash Transfer schemes for women (Ladki Bahin Yojana), etc. act as an income support to rural population.
- **Food Security:** **PM-GKAY**, **NFSA** ensure free or subsidised food grains to around 81 crore people. They help maintain basic consumption levels, even when wages are stagnant.
- **Employment and Skill Schemes:** **MGNREGA** (Guaranteed rural jobs) **Skill India** and **NRLM** aim to Up-skill rural workers and Encourage non-farm employment.

Government schemes have mitigated some distress, but a lasting solution lies in: Reviving the informal sector, creating quality jobs, and Ensuring that economic growth leads to wage growth for rural and low-income workers.

Increasing Female Labour Force Participation

Context: The Indian government is set to unveil a comprehensive national policy aimed at increasing female labour force participation, with a focus on creating an enabling environment through a robust care economy framework.

About the Care Economy

- The care economy refers to the **sector of economic activity that involves the provision of care and support services**, particularly those related to health, education, childcare, eldercare, and similar areas.
- It includes both paid and unpaid care work, which are essential for human well-being, development, and labour force participation.

Female Workforce Participation in India

- According to the Periodic Labour Force Survey (PLFS) 2023-24, the Female Labour Force Participation Rate (FLFPR) in India stands at approximately 41.7%, a significant rise from previous years (e.g., ~23% in 2017-18).
- Despite this rise, India still lags behind global and regional peers. For instance: Global: ~50%, US: ~56%, China: ~60%, Bangladesh: ~42%,

Why It Matters

- **Economic Growth:** According to the IMF, closing the gender gap in labour force participation could increase India's GDP by 27%.
- **Poverty Reduction:** When women have access to income-generating opportunities, it can lift households out of poverty, improve living standards, and lead to better overall well-being. Studies based on time-series data (1990–2016) show a unidirectional causality from female labour force participation to poverty reduction.
- **Inclusive Growth and Gender Equality:** Rising female labour force participation (FLFP) is key to inclusive growth, helping distribute the benefits of development more equitably across society. It directly supports SDG 5 (Gender Equality) and contributes to goals like No Poverty (SDG 1) and Decent Work and Economic Growth (SDG 8).

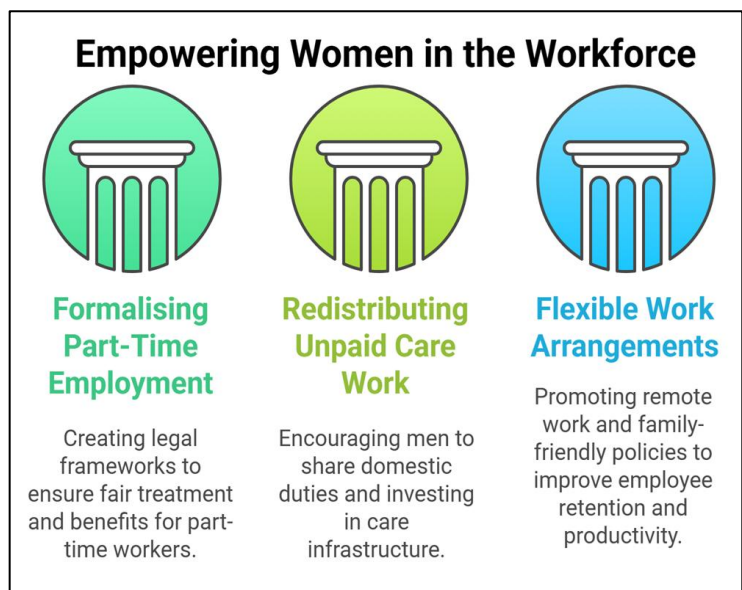
- **Better Health and Education Outcomes for Families:** Studies consistently show that maternal employment is positively related to children's school enrollment, especially among disadvantaged groups
- **Social Empowerment:** Work provides women with financial independence, social mobility, and a voice in decision-making. In India, 98% of salaried and self-employed women actively participate in long-term family decision-making, and 47% make independent financial decisions, reflecting growing financial autonomy
- **Demographic Dividend:** India's young population can be a strength only if both men and women are employed productively. Projections indicate that if women comprise over half of the new workforce by 2030, India could achieve a GDP growth rate of 8%.

Barriers to Women's Economic Participation

- **Disproportionate caregiving time:** Among individuals aged 6 and above, 26.2% of females spend over two hours per day on caregiving, compared to only 12.4% of males, reflecting an unequal burden on women.
- **Lack of Formal Part-Time Work:** India lacks formal, regulated part-time work options, forcing women who need flexibility into informal, insecure jobs without benefits or job security. In advanced economies, legislated part-time employment supports women's workforce participation, but such provisions are largely absent in India.
- **Domestic and Childcare Responsibilities:** 43.04% of women report child care and homemaking responsibilities as primary barriers, highlighting the need for better work-life balance policies.
- **Cultural and Societal Norms:** Patriarchal expectations limit women's mobility and career choices. Workforce participation drops sharply in households with children under 14, as women are expected to prioritize caregiving.
- **Limited Access to Quality Jobs and Skills:** Educated urban women face high unemployment due to lack of quality job opportunities, unsafe workplaces, poor childcare support, and inadequate public transport. As per NCRB, the victim count for workplace sexual harassment against women has increased from 402 in 2018 to 422 in 2022.
- **Decline in Access to Childcare Facilities:** In 2013, the National Creche Scheme supported nearly 25,000 crèches benefiting over 6 lakh children. By February 2023, this number had fallen drastically to just 3,900 crèches with less than 84,000 beneficiaries.
- **Structural and Policy Gaps:** Existing schemes focus on self-help groups and micro-enterprises but lack support for women moving into formal or large-scale employment. Gaps persist in skill training, affordable childcare, and flexible work options. As of June 2024, India has only 2,163 operational government-run crèches

Key Government Initiatives to Promote Women's Economic Participation

- **PM Mudra Yojana:** Offers collateral-free loans (now up to ₹20 lakh) with focus on women entrepreneurs.
- **Stand-Up India:** Provides ₹10 lakh-₹1 crore loans to SC/ST/women for starting businesses; ₹61,000+ crore sanctioned by 2025.
- **Skill India & PMKVY:** Offer women-focused training with added support in key sectors like healthcare, apparel, electronics.
- **Mahila Shakti Kendra:** Empowers rural women through community-based skill and digital literacy programs.
- **Maternity Benefit Act (2017):** Extended paid leave to 26 weeks and introduced remote work options.



- **New Labour Codes (2019-20):** Ensure safety, equity, and social security for working women.
- **Working Women Hostel Scheme:** Provides safe and affordable housing for employed women.
- **Beti Bachao, Beti Padhao:** Promotes girl child education and addresses gender bias.
- **Ujjwala Yojana:** Gives free LPG to BPL women, saving time and improving health.
- **One-Stop Centres & Helplines:** Provide safety and support to women facing violence.
- **MGNREGA Reservation:** Guarantees one-third of rural jobs for women.

India's goal of becoming a developed nation by 2047 is closely tied to the inclusion of its female workforce. A multi-dimensional, gender-sensitive approach backed by political will, policy innovation, and cultural change, is essential to unlock the full potential of half the population. The time to act is now.

Changing Employment in India

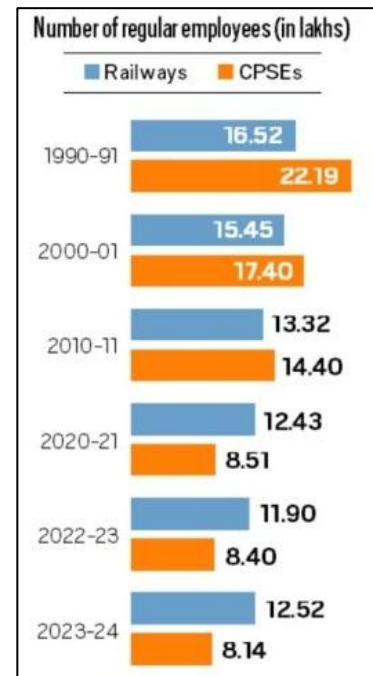
Context: Since the economic reforms of 1991, India has witnessed a significant shift in organised employment from a public sector-led job market to one increasingly dominated by the private sector.

Historical Background: Dominance of Public Sector

- After Independence, India's middle class was primarily shaped by government jobs in public administration and state-owned enterprises.
- In 1995, public sector employment stood at 194.7 lakh, while the organised private sector employed only 80.6 lakh workers.
- By 2012, this pattern had begun to change. Public sector jobs declined to 176.1 lakh, whereas private sector employment rose to 119.7 lakh.

Major Trends in Organised Employment: Shift towards Private

- **Shrinking Public Sector Employment:** Indian Railways, one of the largest government employers, saw its regular workforce fall from 16.5 lakh (1990-91) to 11.9 lakh (2022-23). Similarly, employment in various Central and State public sector enterprises has steadily declined over the years.
- **Rise of the IT Sector:** The Information Technology industry became a symbol of India's new private-sector-led middle class. In 2004-05, TCS and Infosys had 45,714 and 36,750 employees respectively. In 2024, their workforces expanded to 6 lakh (TCS) and 3.23 lakh (Infosys), driven by global outsourcing demand and digital transformation.
- **Transformation in the Banking Sector:** In 1991-92, public sector banks accounted for 87% of the total workforce in scheduled commercial banks. By the end of 2023-24, Private sector banks employed 8.74 lakh people, compared to less than 7.5 lakh in public sector banks.



Reasons for Changing Employment Patterns in India

- **Economic Liberalization and Policy Reforms:** The 1991 reforms liberalized the economy, ending the License Raj and allowing private companies and foreign investments to flourish. This reduced the government's economic role and boosted private sector growth in industries like IT, banking, and telecom.
- **Disinvestment and Shrinking Public Sector:** The government reduced its stake in public sector enterprises through disinvestment. This led to workforce downsizing in major PSUs, including Indian Railways.
- **Rise of Private Sector and New Industries:** The IT and services sectors became major job creators, with companies like TCS and Infosys expanding rapidly. Private banks also overtook public ones in employment, offering better pay and faster growth, attracting a new generation of workers.
- **Stagnation in Public Sector Jobs:** Public sector jobs have declined or remained static, despite high demand for their job security. With only about 1.4 crore government jobs available, many youth find the slow promotions and rigid work culture less appealing.

- **Growth of Entrepreneurship and Self-Employment:** Market reforms encouraged startups and self-employment. Many from the middle class now prefer running businesses or freelance work, moving away from traditional salaried employment.

Challenges and Concerns

- **Quality and Security of Jobs:** Many private sector and gig economy jobs are informal, low-paid, and lack job security or benefits. With 7.7 million gig workers in 2023, over 77% earned under ₹2.5 lakh/year, making urban survival difficult.
- **Stagnation in Manufacturing and Structural Shift:** India has failed to shift surplus farm labour into high-productivity sectors like manufacturing. Manufacturing's job share dropped to 11.4% (2023-24), while construction rose, which is less secure. Farm employment also increased again, reversing past progress.
- **Widening Inequality and Upward Mobility Limits:** High-paying jobs are mostly available to the highly educated in sectors like IT and finance. Low-skilled workers remain in informal, low-income roles, widening socio-economic gaps.
- **Gender Disparities:** Female workforce participation remains low and is declining. Of 7.4 lakh new payroll members, only about 2 lakh were women, reflecting limited gains for women in the expanding private sector.
- **Regional Imbalances:** Job growth is concentrated in a few major cities, while rural and backward areas lag behind. This fuels migration and increases regional inequality.
- **Policy and Implementation Gaps:** Labour reforms exist but face weak implementation and coordination. Most informal workers remain outside formal legal protections, limiting the impact of new labour codes.

Moving forward, India must focus on creating high-quality jobs across sectors, ensuring balanced regional growth, and strengthening social protections to make the employment landscape more equitable and sustainable.

Women Entrepreneurship

Context: The MSDE and NITI Aayog have launched Swavalambini, a women entrepreneurship programme, in Assam, Meghalaya, and Mizoram.

Significance of Women Entrepreneurs in India

- **Economic Growth and Job Creation:** Women lead 22% of enterprises and employ over 27 million people in India. Boosting women's participation could create 30 million businesses and 170 million jobs, raising GDP growth by 1.5 percentage points.
- **Human Capital Utilization:** Female LFPR stands at 41% compared to 60% for men (PLFS 2023), indicating untapped potential.
- **Innovation and Diversity:** Women bring innovative thinking and diverse perspectives, enhancing creativity and decision-making in business.
- **Community Development and Poverty Alleviation:** Women-led enterprises uplift rural communities by generating income and jobs. Example: Lijjat Papad, a women's cooperative, empowers over 43,000 women through employment and financial independence.
- **Role in Sustainable Development:** Women entrepreneurs promote inclusive growth and sustainability by leading diverse businesses to reach global markets. This supports SDG 5.5, which aims for equal leadership opportunities for women in all sectors.
- **Women Empowerment and Social Change:** Entrepreneurship offers women financial independence and leadership skills, challenging gender norms. They promote equality, and help close the gender gap in business, especially with low female labor participation.

Challenges Faced by Women Entrepreneurs in India

- **Limited Access to Funding:** Only 76% of women-led MSMEs have accessed formal credit, compared to 84% for male-owned enterprises, reflecting a significant gender gap in financial access.
- **Underrepresentation and Scale:** Women own only about 20-22% of MSMEs in India, despite making up over 50% of the artisan workforce.

- **Family Responsibilities:** Marriage-related migration (responsible for 87% of women's relocation) often disrupts established professional networks, slowing business growth and career progression due to the effort required to rebuild these connections.
- **Startup Ecosystem:** As of October 2024, over 73000 startups with at least one woman director were registered under the Startup India Initiative (nearly half of all startups). Yet, only 5.9% of startups are solely founded by women, while men lead 55.5%.
- **Underrepresentation in Policy-Making:** Women are inadequately represented in policy-making bodies, resulting in a lack of supportive measures tailored to their unique needs.
- **Safety Concerns:** Safety issues and inadequate law enforcement restrict women's mobility, limiting their ability to manage and expand business operations independently

Govt Initiatives for Women Entrepreneurs

- **Pradhan Mantri Mudra Yojana (PMMY):** Provides micro-financing up to ₹10 lakh to non-corporate, non-farm small and micro enterprises, with a specific focus on supporting women entrepreneurs.
- **Women Entrepreneurship Platform (WEP):** Launched by NITI Aayog in 2017, it serves as a unified aggregator of information and services, offering access to incubation, mentoring, funding, compliance support, and networking. Over 26,500 women have benefitted.
- **Stand Up India Scheme:** Facilitates bank loans between ₹10 lakh and ₹1 crore for women and SC/ST entrepreneurs to set up greenfield enterprises.
- **Trade Related Entrepreneurship Assistance and Development (TREAD) Scheme:** Provides credit, training, and information to women entrepreneurs, in non-farm sectors.
- **Mahila Udyam Nidhi Scheme:** Offers financial support up to ₹10 lakh for women to set up new small-scale ventures or rehabilitate sick ones, with a flexible repayment period.

Women entrepreneurship is vital for inclusive growth and social change. Women-led enterprises boost jobs, innovation, and community welfare. With the right policies and support, India can overcome structural barriers, empower women, and advance toward gender equality and sustainable development.

Skill Development in India

Context: The Union Cabinet has approved the continuation and restructuring of the Skill India Programme (SIP) till 2026 with a budget of ₹8,800 crore for 2022-23 to 2025-26.

What Skill Development Means?

- Skill Development involves acquiring or enhancing skills, knowledge, and attitudes through training programs, courses, and on-the-job learning to boost individual and workforce performance. It includes technical, vocational, and soft skills development.

Importance of Skill Development

- **Employability:** Skill development improves job readiness by equipping individuals with technical and soft skills. NSDC notes it can raise employment chances by 15-25%.
- **Economic Growth:** A skilled workforce boosts productivity and innovation. Skill training could raise India's GDP by 3-5% by 2035.
- **Poverty Reduction:** Skills help marginalized groups access stable jobs, raise incomes, and promote social inclusion.
- **Global Competitiveness:** Countries like Korea (with 96% vocational training) show how a skilled workforce attracts investment and strengthens global market position.
- **Adaptability to Change:** Lifelong skill learning helps individuals stay relevant amid technological and economic changes.

India's Skilling Landscape

- **Employability:** Only 51.25% of India's youth is considered employable (Economic Survey 2023-24).
- **Future Skills Gap:** By 2030, talent shortage may exceed 85 million globally (FICCI-KPMG).

Vocational Training Access (Ages 15–29)

India	World
• Formal training: 2%	• Korea: 96%
• Non-formal training: 8%	• Germany: 75%
	• Japan: 68–70%

- **Innovation and Entrepreneurship:** Skilled people create jobs and drive innovation, fostering economic and local growth.
- **Health and Well-being:** Gaining skills boosts confidence, improves decision-making, and enhances overall life quality.

Issues and Challenges in Development of Skills in India

- **Mismatch between Training and Job Market:** According to India Skills Report 2025, India's national employability rate stands at 54.81%, highlighting the challenge of balancing training with job market demands.
- **Limited Access to Training:** According to a report by the World Economic Forum, only 10% of the rural workforce in India has received formal skills training.
- **Lack of Industry Linkages:** The Skill Development ecosystem in India lacks adequate industry linkages, which results in inadequate feedback on skill requirements and inadequate design of training programs. According to the National Sample Survey Office (NSSO), only 5% of the enterprises in India have participated in Skill Development programs.
- **Poor Quality of Training:** The International Labour Organization (ILO) has found that the quality of training provided by Skill Development programs in India is subpar, with only 30% to 40% of those completing their training finding employment or becoming self-employed upon completion.
- **Overburdened Responsibility:** Phase III of the Pradhan Mantri Kaushal Vikas Yojana aimed to skill over 8 lakh individuals in 2020-21. However, it heavily relies on District Skills Development Committees chaired by District Collectors, who are often unable to prioritize this role amidst their other responsibilities.
- **Social and Traditional Biases:** The belief that manual labour is inferior creates barriers to accepting and promoting skill-based work. There is a societal bias towards traditional degrees rather than focussing on vocational training and skill enhancement.

Government Initiatives

Restructured Skill India Programme (SIP)

It aims to build a future-ready workforce with tech-driven, demand-based training.

Key Schemes under SIP:

- **PM Kaushal Vikas Yojana 4.0 (PMKVY 4.0):** Short-term training & upskilling; 400+ new courses in AI, 5G, cybersecurity, etc.
- **PM National Apprenticeship Promotion Scheme (PM-NAPS):** Promotes on-the-job training through apprenticeships to increase employability.
- **Jan Shikshan Sansthan (JSS):** Community-based skill training for non-literate and rural youth, especially in semi-urban areas.
- **National Education Policy 2020:** Recognizes Skill Development's role in economic growth. Emphasizes integrating vocational education from 6th grade, promoting internships.
- **SANKALP (Skill Acquisition and Knowledge Awareness for Livelihood Promotion):** Supported by the World Bank, aims to strengthen institutional mechanisms for skill development, enhance market relevance, and promote inclusion of marginalized communities.
- **National Skill Development Mission:** Aims to coordinate skill training efforts across sectors and states, to achieve scalable and standardized skill development through structured governance.
- **Indian Skill Development Services (ISDS):** Group 'A' service created by the Ministry of Skill Development to attract administrators and institutionalise the Skill Development environment.

India aims to enhance employability and sustainable economic growth by integrating vocational training, fostering entrepreneurship, and leveraging technological advancements. This approach prepares the workforce for future job market challenges and opportunities, ensuring skill development remains a cornerstone of India's development agenda.

Union Budget 2025-26

Context: The Union Minister of Finance and Corporate Affairs presented the Union Budget 2025-26 in Parliament.

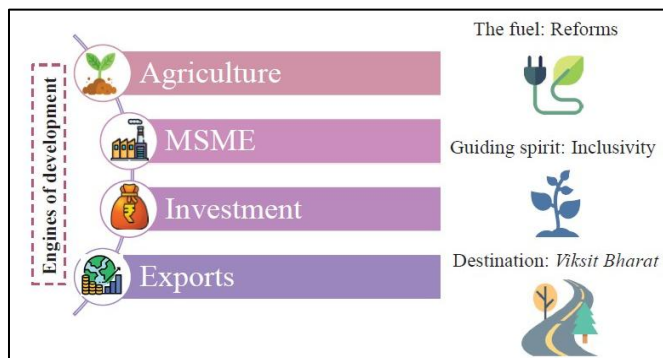
Principles of Viksit Bharat

- Zero poverty
- 100% access to good-quality school education
- Affordable and comprehensive healthcare
- 100% skilled labour force with meaningful employment
- 70% women participation in economic activities
- India as the "food basket of the world"

Reforms to Boost Growth and Competitiveness

The Budget aims to initiate transformative reforms in:

- Taxation
- Power Sector
- Urban Development
- Mining
- Financial Sector
- Regulatory Environment



1. Agriculture: The 1st Engine of Development

Several initiatives were announced to boost agricultural growth and improve farmers' incomes.

Initiative	Key Features
Prime Minister Dhan-Dhaanya Krishi Yojana	• Launched in partnership with states- Covers 100 low-productivity districts with moderate crop intensity and below-average credit parameters • Inspired by the success of the Aspirational Districts Programme
Mission for Aatmanirbharta in Pulses	• 6-year mission focusing on Tur, Urad, and Masoor • Focus on climate-resilient seeds, higher protein content, improved productivity, better storage, and assured prices • NAFED & NCCF to procure pulses from registered farmers for 4 years
Comprehensive Programme for Fruits & Vegetables	• Promotes production, supply efficiency, processing, and fair prices • Institutional mechanisms to include FPOs and cooperatives • Implemented in partnership with states
Makhana Board in Bihar	• To support production, processing, value addition, and marketing of Makhana • Provides hand holding, training, and access to government schemes
National Mission on High-Yielding Seeds	• Strengthens seed R&D ecosystem • Develops high-yield, pest-resistant, and climate-resilient seeds • Ensures commercial availability of 100+ seed varieties released since July 2024
Mission for Cotton Productivity	• 5-year mission to improve cotton productivity and sustainability • Promotes extra-long staple cotton varieties • Provides Science & Tech support to farmers • Enhances global competitiveness of textile sector (80% MSME-based) • Aligned with 5F principle: Farmer, Fibre, Factory, Fashion, Foreign

Enhanced Kisan Credit Card (KCC) Loan Limit	- KCC loan limit increased from ₹3 lakh to ₹5 lakh - Applies to fishers, farmers, processors, and other stakeholders under Modified Interest Subvention Scheme
Urea Plant in Assam	- New urea plant with 12.7 lakh metric tonnes annual capacity at Namrup, Assam - Aims to boost urea production and reduce import dependence - Complements three reopened dormant plants in Eastern India

2. MSMEs: The 2nd Engine of Development

The Budget defines MSMEs as one of the powerful engines for the story of development. The proposed development measures support MSMEs to accelerate growth and secure inclusive development.

Initiative	Key Features
MSMEs as Growth Drivers	- MSMEs employ 7.5 crore people and contribute 36% to manufacturing and 45% to exports. - Over 1 crore registered MSMEs in India.
Revised Classification Criteria	- Investment and turnover limits for MSMEs to be enhanced by 2.5 and 2 times respectively. - Aims to enable scale, technology upgrade, and better capital access.
Enhanced Credit Guarantee Cover	Micro & Small Enterprises: Credit cover raised from ₹5 crore to ₹10 crore, enabling ₹1.5 lakh crore additional credit in 5 years. Startups: Limit increased from ₹10 crore to ₹20 crore with reduced 1% guarantee fee in 27 priority sectors. Exporter MSMEs: Term loan guarantee for up to ₹20 crore for well-run units.
Credit Cards for Micro Enterprises	- New ₹5 lakh credit card for micro units registered on Udyam portal. 10 lakh cards to be issued in the first year.
Fund of Funds for Startups	- Existing Alternate Investment Funds (AIFs) already received ₹91,000 crore in commitments with ₹10,000 crore government backing. - A new Fund of Funds to be launched with additional ₹10,000 crore government contribution.
First-Time Entrepreneurs Scheme	- Loans up to ₹2 crore for 5 lakh women, SC, and ST entrepreneurs over 5 years. - Includes online training for entrepreneurship and management.
Focus Product Scheme for Footwear & Leather	- Supports design, component manufacturing, and machinery for both leather and non-leather footwear. - Expected to create 22 lakh jobs, ₹4 lakh crore turnover, and ₹1.1 lakh crore exports.
Support to Toy Sector	- National Action Plan to promote India as a global toy hub. - Focus on clusters, skills, and eco-friendly 'Made in India' toys.
Food Processing Support	- National Institute of Food Technology, Entrepreneurship and Management to be set up in Bihar. - Will promote food processing in the Eastern region.
National Manufacturing Mission	- To cover small, medium, and large industries under Make in India. - Will offer policy support and implementation roadmap for Centre and states. - Focus areas: ease of doing business, skilled workforce, MSME dynamism, technology availability, and product quality.

- Will support clean tech manufacturing: solar PVs, EV parts, wind turbines, batteries, and more.

3. Investment: The 3rd Engine of Development

Investment is the 3rd engine of development which includes: Investing in people, Investing in economy, Investing in innovation

I. Investing in People

- **Atal Tinkering Labs:** 50,000 labs in govt schools to promote scientific temper and innovation among students.
- **Broadband Connectivity:** Connectivity for all govt secondary schools and PHCs in rural areas under Bharatnet.
- **Bharatiya Bhasha Pustak Scheme:** Digital Indian language books for school and higher education.
- **National Centres of Excellence for Skilling:** 5 centres with global partnerships to equip youth for global manufacturing.
- **Centre of Excellence in AI:** To be set up for education with ₹500 crore outlay.
- **Expansion in IITs:** New infrastructure in 5 IITs (post-2014) for 6,500 more students.
- **Expansion in Medical Education:** 10,000 new seats in 1 year; 75,000 in 5 years.
- **Saksham Anganwadi and Poshan 2.0:** Enhanced nutrition support for over 8 crore children, 1 crore pregnant women and lactating mothers
- **Day Care Cancer Centres:** 200 centres to be set up in district hospitals within 3 years.
- **Urban Livelihood Scheme:** To enhance incomes and livelihoods of urban workers.
- **Revamped PM SVANidhi:** Enhanced loans, UPI-linked credit cards (₹30,000), capacity building.
- **Social Security for Gig Workers:** ID and registration via e-Shram; healthcare under PM-JAY for 1 crore workers.

II. Investing in Economy

- **PPP in Infrastructure:** 3-year PPP project pipelines from ministries and states.
- **Support to States:** ₹1.5 lakh crore interest-free loans for capital expenditure and reforms.
- **Asset Monetization Plan 2025-30:** Rs 10 lakh crore reinvestment planned.
- **Jal Jeevan Mission:** Extended to 2028 with ₹67,000 crore outlay for rural tap water access.
- **Urban Challenge Fund:** ₹1 lakh crore fund to support cities, with ₹10,000 crore for 2025-26.
- **Nuclear Energy Mission:** ₹20,000 crore for SMRs; 100 GW target by 2047; private sector involvement.
- **Shipbuilding Support:** New clusters, ₹6,100 crore for existing yard modernization, 10-year rent holiday.
- **Maritime Development Fund:** ₹25,000 crore fund; 49% govt share; aims ₹1.5 lakh crore investment by 2030.
- **Revamped UDAN - Regional Connectivity Scheme:** To enhance regional connectivity to 120 new destinations.
- **Western Koshi Canal Project:** Benefitting a large number of farmers cultivating over 50,000 hectares of land in the Mithilanchal region of Bihar.

III. Investing in Innovation

- **Research, Development & Innovation:** ₹20,000 crore allocated to boost private-sector-led innovation in key areas announced in July 2024 Budget.
- **Deep Tech Fund of Funds:** A fund being explored to support next-generation tech startups and ensure India's strategic tech independence.
- **PM Research Fellowship:** 10,000 fellowships in IITs and IISc proposed over 5 years to promote advanced research with higher financial aid.
- **Second Gene Bank:** New gene bank to conserve 10 lakh plant germplasm lines for food and nutrition security; the first was set up in 1996.
- **National Geospatial Mission:** ₹100 crore mission to create a geospatial database to modernize land records, urban planning, and infrastructure using AI and quantum tech.
- **Gyan Bharatam Mission:** Digitisation of over 1 crore ancient manuscripts to preserve India's traditional knowledge through collaboration with museums, libraries, and academic institutions.

4. Exports: The 4th Engine of Development

- **Export Promotion Mission:** ₹2,250 crore allocated to boost exports through credit access, MSME support, and sector-wise targets, led jointly by key ministries.
- **BharatTradeNet (BTN):** A digital platform to simplify trade documentation and financing, aligned with global best practices.
- **Global Supply Chain Integration:** Support to build domestic capacity in key sectors, with facilitation groups of officials and industry experts.
- **Export Infrastructure:** Upgrading air cargo, storage, and customs processes, especially for perishable and high-value goods.
- **Industry 4.0 & Youth Skilling:** Skilling programs and support for electronics manufacturing to prepare youth for AI and automation jobs.
- **National Framework for GCCs:** A framework to help states attract Global Capability Centres in Tier-2 cities through skilling and infrastructure reforms.

5. Reforms as the Fuel for Growth

The Budget views reforms as the fuel powering India's development engines, aiming to enhance efficiency, simplify processes, and attract investment.

A. Key Reforms Implemented

- Measures like faceless assessment, faster refunds, and Vivad se Vishwas scheme have improved ease and transparency in tax compliance. Self-assessment now accounts for nearly 99% of all tax returns.

B. Financial Sector Reforms

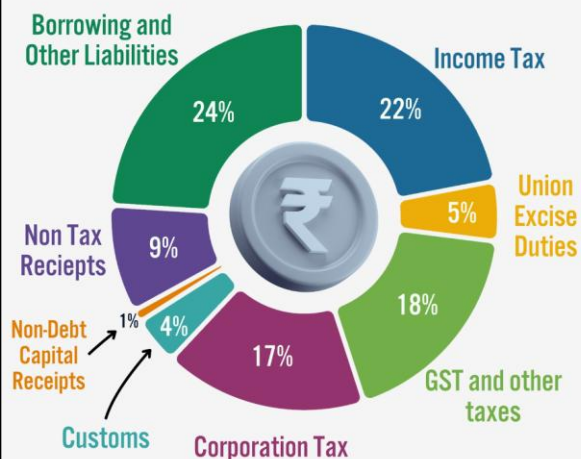
- **FDI in Insurance:** FDI cap increased from 74% to 100% (for companies investing entire premiums in India). Conditions for foreign investment to be simplified.
- **Pension Sector:** A new regulatory forum will coordinate pension reforms, standardize reporting, and promote pension awareness.
- **Grameen Credit Score:** Public Sector Banks to develop rural credit scoring for SHGs and rural borrowers to improve credit access and repayment discipline.
- **KYC Simplification:** Central KYC Registry to be revamped and rolled out in 2025 with a streamlined system for updates.
- **Company Mergers:** Faster approvals and simplified procedures for company mergers, expanding scope for fast-track processes.
- **Bilateral Investment Treaties (BIT):** New investor-friendly BIT model to be launched, aligned with global trends and national development goals.

C. Regulatory Reforms

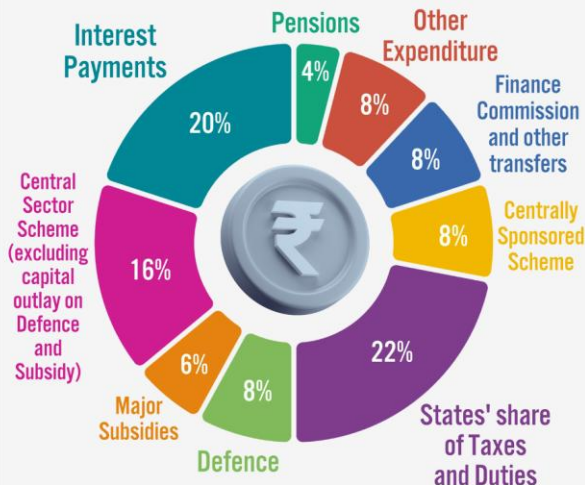
- **Modernisation of Old Laws:** Obsolete regulations will be updated to reflect 21st-century needs. Emphasis on light-touch, trust-based governance for productivity and employment.
- **High-Level Committee on Regulatory Reforms:** To review non-financial regulations and recommend ways to ease compliance within a year. Aimed at reducing inspection burdens and improving ease of doing business.
- **Investment Friendliness Index of States:** To be launched in 2025, encouraging states to adopt reforms via competitive federalism. Rankings will push states to emulate top performers.
- **FSDC Reform Evaluation Mechanism:** Under the Financial Stability and Development Council (FSDC), a mechanism will be set up to assess financial regulations' impact and improve policy responsiveness.
- **Jan Vishwas Bill 2.0:** Will decriminalize over 100 legal provisions, following the 2023 Act that decriminalized more than 180 clauses, promoting a pro-business environment.

Budget 2025-26

₹ COMES FROM



₹ GOES TO



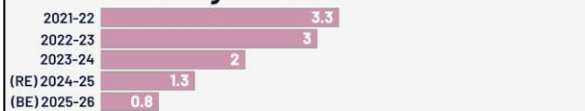
Fiscal Deficit



Revenue Deficit



Primary Deficit



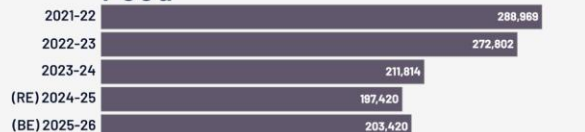
Percentage of GDP

*RE: Revised Estimates; BE: Budget Estimates

Fertilizer



Food



Petroleum



Subsidies (in ₹ crore)

*RE: Revised Estimates; BE: Budget Estimates

Money and Banking

Economic Capital Framework

Context: RBI approved a bumper surplus transfer of Rs 2.69 lakh crore to the Central Government for the accounting year 2024-25 under revised Economic Capital Framework (ECF).

About Economic Capital Framework (ECF)

- The ECF is a methodology used by the Reserve Bank of India (RBI) to determine the appropriate levels of risk provisions and profit distribution under Section 47 of the RBI Act 1934.
- According to this provision, the RBI must pay the central government the balance of its profits after making provisions for bad and doubtful debts, depreciation of assets, and contributions to staff.

- **Old ECF:** The initial ECF was developed in 2014-15 and became operational in 2015-16. To propose a suitable surplus distribution policy, the RBI constituted an Expert Committee in 2018, chaired by Dr. Bimal Jalan, to review the existing economic capital framework.
- **Revised ECF 2019:** On August 26, 2019, the RBI adopted a revised ECF based on the recommendations of the Bimal Jalan Committee. This revised framework is subject to review every five years.
- **Revised ECF 2025:** In May 2025, RBI approved a new revised ECF, which retains the core principles of the original framework but introduces operational flexibility to better manage emerging financial risks.

The Economic Capital Framework (ECF) is the RBI's method to decide how much of its profit it should keep for safety and how much it can give to the government.

Contingency Risk Buffer (CRB)

- A key component of the ECF is the Contingency Risk Buffer (CRB) which is a financial safeguard that helps the RBI address unexpected economic or financial crises.
- In 2018, the Bimal Jalan Committee recommended that the CRB be maintained between 5.5% and 6.5% of the RBI's balance sheet.
- The RBI updated its Contingent Risk Buffer (CRB) range to 4.5-7.5% of the balance sheet.
- For FY25, the CRB was raised to 7.5%, indicating a higher risk provisioning but still allowing a large surplus transfer.

How Changes in CRB Influence Surplus Transfer for the Government

- The surplus transferred to the government is calculated after setting aside the required CRB
- If the CRB is increased, the RBI will have to retain more reserves, reducing the dividend amount for the government.
- If the CRB is lowered, it could release more funds for surplus transfers.

Importance of Surplus Transfer for the Government

- **Reduce Fiscal Deficit:** The transfer creates a fiscal space of about 0.3% of GDP, helping to reduce government borrowing and maintain fiscal discipline. This supports the government's commitment to reduce the fiscal deficit to 4.5% by FY26.
- **Meeting Revenue Targets:** As a significant source of non-tax revenue, the surplus transfer allows the government to increase spending, promoting economic growth.
- **Reduce Government Borrowing:** It can reduce the government's gross borrowing, or enable higher capital expenditure. Lower borrowing also leads to softer government security (G-Sec) yields, reducing borrowing costs.
- **Keeping Interest Rates Low:** The decrease in government bond yields due to the surplus transfer lowers borrowing costs across the economy since sovereign debt yields serve as benchmarks for corporate borrowing rates.
- **Covering the Disinvestment Target:** With an ambitious divestment target of ₹47,000 crore for FY25, which is 42.4% increase over the revised estimate for FY25, the surplus provides a safety net for the government in case it misses this target, as it has in recent years.

Past debates on RBI surplus transfers have focused on the adequacy of its contingency fund and the bank's autonomy. However, the current surplus is key to the Central Government's budget planning, potentially boosting economic activity through increased public spending or targeted projects.

SURPLUS TRANSFERRED TO GOVERNMENT

Year	Dividend transfer (in ₹ crore)
2018-19	₹1,76,051 Cr
2019-20	₹57,128 Cr
2020-21	₹99,122 Cr
2021-22	₹30,307 Cr
2022-23	₹87,416 Cr
2023-24	₹2,10,874 Cr
2024-25	₹2,68,590 Cr

Source: RBI

Remittances to India

Context: Advanced Economies (US, UK, Canada, Singapore, and Australia) have now surpassed Gulf nations as the top source of remittances to India. (RBI Remittances Survey 2023-24).

Key Trends in Remittance Inflows to India (2023-24)

- In 2024, India received a record-high remittance inflow of \$129.1 billion – the largest amount ever received by any country in a single year. India's share in global remittances stood at 14.3%, marking the highest global share by any country since 2000.
- The United States (27.7%) emerged as the largest contributor, followed by the UAE, UK, Saudi Arabia, and Singapore.
- While GCC countries like the UAE and Saudi Arabia once dominated, their combined share has declined to 38%, whereas Advanced Economies now contribute over 50%.
- Maharashtra (20.5%) tops the list, followed by Kerala and Tamil Nadu.

Reasons Behind the Shift in India's Remittance Inflows

- **Changing Migration Patterns:** More Indians are moving to Advanced Economies (AEs) like the US, UK, Canada, Australia, and Singapore for professional and educational opportunities. GCC countries traditionally hosted low-skilled Indian workers, but this trend is reversing due to shrinking demand.
- **Stronger Job Markets in Advanced Economies:** Economic revival and fiscal stimulus packages in the US and Europe boosted job markets. White-collar jobs in STEM, healthcare, and finance offer better incomes than blue-collar jobs in the Gulf.
- **Automation:** Automation and economic diversification has resulted in reduced reliance on foreign labour in GCC countries. Programs like Saudi Arabia's Nitaqat give employment preference to locals.
- **COVID-19 Impact:** Job losses, salary cuts, and return migration further lowered inflows from Gulf nations.
- **Migration for Education:** Countries like the UK, Canada, and Australia have become top destinations for more than 5 lakh Indian students (2024). After graduation, students often take up jobs abroad and send money home to repay loans or support families.
- **Lower Cost of Remittance to India:** Digitalisation has made sending money cheaper and faster. India's transfer cost is lower than the global average but still above the SDG 10.c target of 3% for sending \$200.

Importance of Remittances for India

- **Significant Contribution to GDP:** Remittances account for 3-3.5% of India's GDP, making them a larger and stable source of external finance than foreign direct investment (FDI).
- **Economic Resilience and Stability:** Remittances provide a stable inflow of foreign exchange, acting as a buffer during global crises such as pandemics or wars. They help stabilize the external sector, especially when India's trade deficit widens, by bolstering foreign exchange reserves.
- **Support for Household Incomes:** Remittances are a vital source of income for millions of Indian families, helping to reduce poverty, improve living standards, and increase purchasing power.
- **Poverty Reduction and Social Development:** By increasing household incomes, remittances help lift families out of poverty and hunger, improve health and nutrition, and support better education and sanitation.
- **Regional Economic Impact:** Remittances account for 23.2% of Kerala's Net State Domestic Product (NSDP) as of 2023. They are equivalent to 1.7 times the state's total revenue receipts.
- **Macroeconomic Cushion:** Remittances are the second largest source of external financing after service exports, helping to fund imports, pay off external debt, and stabilize the rupee. They reduce country risk and improve the sustainability of government finances.

India's remittance model is shifting from low-skilled migration to Gulf countries to high-skilled migration to advanced economies. To sustain and grow this crucial source of foreign exchange, India must invest in skill

alignment, proactive migration diplomacy, and policies that maximise the long-term developmental benefits of migration.

Decline in Foreign Direct Investment (FDIs)

Context: According to the Reserve Bank of India (RBI), India's net foreign direct investment (FDI) declined sharply from USD 10.1 billion in 2023-24 to just USD 0.4 billion in 2024-25.

What is Foreign Direct Investment (FDI)?

- FDI refers to investment by a person residing outside India in either: An unlisted Indian company, or At least 10% of post-issue paid-up equity capital (on a fully diluted basis) of a listed Indian company.
- FDI is typically a long-term, non-debt capital flow.
- Net FDI refers to the total foreign investment coming into India (Gross FDI) after subtracting the amount repatriated by foreign firms and the outward investments made by Indian companies (OFDI).

FDI Routes in India

- **Automatic Route:** No prior government approval is needed. Investors only need to inform the RBI post-investment. Examples: Agriculture, Air Transport Services, Automobiles, Greenfield Biotechnology, etc.
- **Government Approval Route:** Prior approval from the relevant ministry is mandatory. Examples: Banking (public sector), Broadcasting content, Food product retail trading, Digital news media, etc.
- **FDI is prohibited in:** Atomic energy, Gambling and betting, Lotteries, Chit funds, Real estate business, Manufacture of tobacco products

Current Status of FDI in India:

- **FDI in India (Gross FDI)**
 - Gross FDI inflows reached USD 81 billion in 2024-25, up from USD 71.3 billion in 2023-24.
 - **Major sectors:** Manufacturing, Financial Services, Energy, and Communication, accounting for over 60% of total inflows.
 - **Top source countries:** Singapore, Mauritius, UAE, Netherlands, and the United States, contributing over 75% of total FDI.
- **Outward FDI by Indian Companies (OFDI)**
 - Outward FDI surged to USD 29.2 billion in 2024-25, a 75% increase over the previous year.
 - **Top destinations:** Singapore, USA, UAE, Mauritius, and the Netherlands.
 - **Major sectors:** Financial services, banking and insurance, manufacturing, retail and hospitality, together accounting for over 90% of OFDI growth.
- According to the Reserve Bank of India (RBI), net foreign direct investment (FDI) fell sharply by 96.5% to \$353 million in 2024-25, compared to \$10.1 billion in 2023-24.

What Led to the Sharp Decline in Net FDI?

- **Record Repatriation by Foreign Firms:** In 2024–25, repatriation and disinvestment by foreign companies reached \$51.5 billion, the highest in at least a decade, up from \$44.5 billion in 2023–24. This significantly reduced net FDI inflows.
- **Surge in Outward FDI by Indian Companies:** Indian firms invested \$29.2 billion abroad in 2024–25, a 75% increase from \$17 billion the previous year. This trend reflects growing interest in global expansion and integration into international supply chains.
- **Exit via IPOs:** A surge in high-profile Initial Public Offerings (IPOs) created profitable exit opportunities for long-term foreign investors, contributing to the rise in capital repatriation.
- **Global Economic Uncertainty:** Global headwinds, including high interest rates, geopolitical tensions, and especially new US tariff hikes in April 2025, created an uncertain environment and made investors more cautious.

Significance of FDI in India

- **Macroeconomic Growth:** FDI contributes to capital formation, industrial expansion, and infrastructure development. Example: In 2024, Foxconn announced a \$1.5 billion expansion in India to scale up iPhone production, reinforcing India's position in global supply chains.
- **Employment Opportunities:** Foreign investment plays a key role in job creation across sectors by factories, and service centres. Example: Samsung, with factories in Noida and Tamil Nadu, produces 90% of its phones and employs around 45,000 people in India.
- **Advanced Technology & Innovation:** FDI facilitates the transfer of global best practices, R&D expertise, and automation to India. Example: AWS (Amazon Web Services) aims to invest \$8.2 billion by 2030 to build AI and cloud infrastructure in Maharashtra.
- **Infrastructure Development:** Foreign capital funds large-scale infrastructure like industrial parks, roads, and ports. Example: Panattoni, a global logistics giant, is investing €100 million to build a 25-acre industrial park in Tamil Nadu, boosting regional development.
- **Enhanced Exports:** Foreign companies manufacture in India for global markets, helping reduce trade deficits and earning foreign exchange. Example: Foxconn's India expansion is aimed at increasing electronics exports as part of the "China+1" diversification strategy.
- **Encourages Competition & Efficiency:** FDI compels Indian companies to adopt global quality and service standards, improving productivity and consumer satisfaction. Example: Amazon's \$233 million logistics investment in 2025 is helping Indian MSMEs access global e-commerce markets and modern warehousing systems.

Major Barriers to FDI in India

- **Complex Regulatory Environment:** India's tax and transfer pricing laws remain complex, causing compliance issues and disputes. Example: Vodafone-Idea's tax case created uncertainty for investors.
- **Weak Infrastructure:** Gaps in transport, logistics, and power persist. High logistics costs (14–18% of GDP) raise business expenses and deter FDI.
- **Unfair Market Competition:** Predatory pricing by e-commerce giants affects fair competition. Regulators like CCI struggle to control anti-competitive behavior.
- **Regional Imbalance in FDI:** Most FDI flows to urban areas and a few states, while rural regions lag due to weak infrastructure and fewer opportunities.
- **Environmental and Sustainability Issues:** Despite stronger laws, poor enforcement of pollution and resource rules worries investors. Example: Vedanta's Niyamgiri mining plan was halted over environmental concerns.
- **Other Barriers:** Weak IPR protection, corruption, and economic risks like currency fluctuation and inflation increase investor caution and complicate foreign business operations.

Key Government Policies to Boost Foreign Investment in India

1. Flagship Industrial Promotion Schemes

- **Make in India:** Encourages manufacturing and innovation.
- **Startup India:** Supports startups with funding, tax benefits, and regulatory ease.
- **PM GatiShakti:** Focuses on infrastructure connectivity for faster project execution.
- **Production Linked Incentive (PLI) Scheme:** Offers financial incentives to key manufacturing sectors to attract global investment.
- **National Industrial Corridor Programme:** Develops industrial zones with modern infrastructure.

2. Investment Facilitation Platforms

- **National Single Window System (NSWS):** A unified portal for over 3,000 regulatory approvals from 32 Central Ministries and 28 States/UTs.
- **India Industrial Land Bank:** Provides digital access to over 4,000 industrial parks.
- **Project Monitoring Group (PMG):** Resolves investment-related issues through real-time tracking and coordination.

3. FDI Policy Reforms

- **100% FDI under Automatic Route** in most sectors (except a few strategic areas like defence, media).
- 90% of FDI inflows now come through the automatic route, removing the need for prior government approval.

4. Ease of Doing Business

- Over 42,000 compliances were reduced and 3,800 legal provisions decriminalized.
- Jan Vishwas Act, 2023: Decriminalized 183 provisions across 42 Acts to build a trust-based regulatory environment.
- India's Ease of Doing Business Rank improved from 142 (2014) to 63 (2019).

To sustain FDI momentum, India must address regulatory complexity, ensure regional balance, and enhance investor confidence through predictable and transparent governance, critical for long-term economic transformation.

Agriculture and Allied Sector

Shift in India's Cropping Pattern

Context: India's agricultural sector is undergoing a transformational shift in cropping patterns, with farmers gradually moving from traditional subsistence farming to more diversified and commercially viable crops.

What is a Cropping Pattern?

- Cropping pattern refers to **the arrangement, sequence, and distribution of different crops grown on a piece of land over a specific period, usually a year.**
- In India, cropping patterns are **shaped by climate, soil type, water availability, and government policies.** The agricultural year is divided into three main seasons:

Kharif Season (June-October)	Rabi Season (Oct-April)	Zaid Season (March-June)
• Starts with the arrival of the monsoon. • Main crops: Rice, maize, millets, pulses (like arhar and moong), and oilseeds (like soybean and groundnut). • Rice is the most important Kharif crop, especially in West Bengal, UP, and Punjab. • Kharif area: Over 378 lakh hectares; rice production in 2022-23 was 1357.55 lakh tonnes.	• Begins in winter and ends before summer. • Main crops: Wheat, barley, mustard, gram, and lentils. • Wheat is the most dominant Rabi crop. • Rabi area: Around 720.68 lakh hectares in 2022-23; wheat production reached 1105.54 lakh tonnes.	• A short season between Rabi and Kharif. • Grown mostly with irrigation. • Main crops: Watermelon, cucumber, pumpkin, bitter gourd, and fodder. • Area under Zaid crops (including rice) rose from 29.71 lakh hectares (2017-18) to 80.46 lakh hectares (2020-21).

Factors Influencing Shift in Cropping Patterns

- **Climatic Conditions:** India's diverse climate determine suitable crops. Climate change is reducing yields of crops like rice, wheat, and maize. Example: Wheat yields may drop by 40% by 2080 due to rising temperatures.
- **Water Scarcity:** Groundwater depletion in states like Punjab and Haryana has accelerated shifts toward less water-intensive crops such as oilseeds and maize
- **Technology and Innovation:** Use of high-yielding, climate-resilient varieties. Mechanisation and irrigation expansion are reshaping what can be grown where. For example, increased irrigation has led farmers in Haryana and Maharashtra to grow water-intensive crops like rice and sugarcane, which were not traditionally part of their cropping pattern.
- **Socio-Cultural Practices:** Cultural traditions and festivals influence crop choice. Small farmers prefer food crops; large landowners often grow cash crops. There is a rise in marginal landholdings (below 1 hectare): From 36 million (1971) to 93 million (2011).

- **Government Policies:** Policies like MSP, subsidies, credit, and insurance guide farmers' crop decisions. The National Food Security Mission (NFSM), launched in 2007–08, aimed to boost rice, wheat, and pulses production. As a result, pulses output increased by 35%– from 17.15 million tonnes in 2014–15 to 23.15 million tonnes in 2019–20.

Key Changes in Cropping Patterns

- **Higher Cropping Intensity:** More crops grown per year: from 111% in 1950-51 to 151% in 2019-20, largely due to the rising population.
- **Decline in Food Grains:** Area under food grains dropped by 11.6% (1970-2021); more area now used for oilseeds, fruits, and non-food crops.
- **Shift Toward Commercial Crops:** From 1970–71 to 2020–21, the area under cotton and sugarcane rose from 4.70% to 6.55% and 1.62% to 2.43%, respectively, while coarse cereals and groundnut declined. Even traditional rice-wheat states like Punjab and Haryana are seeing reduced cultivation of these staples, with high-value commercial crops gaining ground.

The shift towards diversified, market-oriented farming boosts income and productivity but risks food grain shortage and resource overuse. A balanced crop mix is key to ensuring food security, income growth, and sustainability.

Food Corporation of India

Context: The Cabinet Committee on Economic Affairs (CCEA) has approved infusion of equity of Rs. 10,700 crores for working capital in financial year 2024-25 in Food Corporation of India (FCI).

About Food Corporation of India

- The Food Corporation of India (FCI) is a statutory body and Public-Sector Undertaking (PSU) under the Ministry of Consumer Affairs, Food and Public Distribution.
- It was set up in 1965 following the enactment of the Food Corporation Act, 1964 with the objective of fulfilling various aspects of the National Food Policy at the time.

Functions and Objectives of FCI:

- **Procurement:** FCI buys crops like wheat, rice, and pulses from farmers at Minimum Support Prices (MSP) to ensure fair returns and protect poor farmers.
- **Buffer Stock Management:** FCI maintains reserve stocks of food grains to ensure constant supply and food security during crises.
- **Distribution:** FCI supplies food grains across India through the Targeted Public Distribution System (TPDS) and welfare schemes at subsidised rates.
- **Price Stabilisation:** FCI steps in to control food grain prices in the market, making them affordable for the poor and maintaining price stability.
- **Quality Control:** FCI ensures all food grains meet government quality standards, protecting nutrition and safety in public supply.
- **Decentralised Procurement:** Under this scheme, some states directly procure and distribute grains, improving efficiency and local management of food supplies.

Challenges faced by FCI

- **Missed Procurement Target:** The FCI missed its wheat procurement target for the second consecutive year for India's main rabi crop for the 2024-25 season at 26.6 million tonnes (mt) 28.7% – lower than its 37.3mt target. Thus the wheat buffer stocks at FCI are already at a 16-year low of 30.3 mt.
- **Manpower Shortage:** The FCI's Annual Report reveals that over 20,000 positions are currently vacant. Additionally, in the past 22 years, the FCI has abolished more than 31,000 sanctioned posts.
- **Transit Loss:** Transit losses occur when food grains are transported by rail or road between depots, due to spillages from multiple handlings and moisture loss. A parliamentary committee reported these losses at 0.28%, costing the FCI around Rs 300 crores annually.

- **Corruption:** From 2018-18, many cases have been registered against the FCI officials by the vigilance department. The cases stand at 817, 828, 691 and 406 respectively from 2017-18 to September 2020.
- **Limited Modern Infrastructure:** While silos offer better preservation of foodgrains, only 2 lakh metric tonnes (LMT) of silo capacity had been built by 2020, despite a target of 20 LMT under implementation. Due to inadequate safe storage, up to 16 million tonnes of foodgrains are lost annually.
- **Capacity Utilisation:** A Parliamentary Committee's report noted that even with regular checks and audits, the usage of rented covered and Cover and Plinth (CAP) storage was very high at 95% and 132% (as of June 1, 2020). Meanwhile, the usage of owned storage was much lower at 75% and 20%.

Way Forward: Recommendations of Shanta Kumar Committee

In August 2014, the Government set up a high-level committee to suggest restructuring or unbundling of FCI to improve its financial management and operational efficiency in procurement, storage and distribution of food grains.

- **Reduce NFSA Coverage:** Cut beneficiaries from 67% to 40% to better target subsidies.
- **Private Sector Role:** Involve private players in procurement and storage of food grains.
- **End MSP Bonuses:** Stop state-level MSP bonuses; shift to direct cash transfers to farmers and beneficiaries.
- **Targeted FCI Procurement:** FCI should procure mainly in weak-performing states; capable states can handle their own procurement.
- **Abolish Levy Rice:** End compulsory rice purchase from mills, allow open market sales.
- **Fertiliser Reform:** Deregulate fertilisers and give ₹7,000/hectare as direct subsidy to farmers.
- **Warehouse Receipt System:** Enable farmers deposit grains in registered warehouses and get 80% advance from banks based on MSP.
- **Buffer Stock Policy:** Adopt a clear policy for stock liquidation, sell surplus in the open market or export when needed.

Animal Husbandry

Context: The Department of Animal Husbandry and Dairying released the Basic Animal Husbandry Statistics (BAHS) 2024 on the National Milk Day (26th November).

Animal Husbandry in India

- Animal husbandry refers to the scientific care, breeding, and management of animals for useful products like milk, meat, eggs, wool, honey, and leather.
- It includes dairy farming, poultry farming, sheep and goat rearing, pig farming, fisheries, and beekeeping. In India, it is often practiced alongside agriculture, especially in small and marginal farms.
- The livestock sector includes all economic activities related to using animals for food, fibre, and labour. Thus, animal husbandry is a key part of the broader livestock sector.

Animal Products Production in India (2023-24)		
Product	Total Production	Top Producing States
Milk	239.30 million tonnes	Uttar Pradesh (16.21%), Rajasthan (14.51%), Madhya Pradesh (8.91%)
Eggs	142.77 billion eggs	Andhra Pradesh (17.85%), Tamil Nadu (15.64%), Telangana (12.88%)
Meat	10.25 million tonnes	West Bengal (12.62%), Uttar Pradesh (12.29%), Maharashtra (11.28%)
Wool	33.69 million kg	Rajasthan (47.53%), Jammu & Kashmir (23.06%), Gujarat (6.18%)

Role of Livestock Sector in Indian Economy

- **Contribution to GDP:** The Livestock Sector contributes to around 30.38% to the Agricultural GVA in 2022-23. In 2022-23, the livestock sector contributed 4.66% of the total GVA.
- **Employment Generation:** Estimates suggest livestock sector provides direct or indirect employment to about 8.8% of the workforce and sustains the livelihoods of around 20.5 million people in small farm households

- **Food and Nutrition:** Livestock provides essential food items like milk, meat, eggs, and wool, contributing to a balanced diet and nutritional security, especially for rural populations. India is the world's largest milk producer, contributing 22% of global output.
- **Income Source:** Livestock is a source of subsidiary income for many families in India especially the resource poor who maintain few heads of animals. Livestock contributed 16% to the income of small farm households and 14% for all rural households.
- **Supporting Crop Production:** 45% of the small farmers use bullocks for ploughing fields and transporting agricultural inputs and outputs, contributing to crop production. In a survey, 100% of the farmers were using the manure from draught bullocks in their fields.
- **Gender Role:** Women contribute over 75% of labor in livestock activities. In dairy-intensive states like Punjab and Haryana, women make up nearly 90% of the workforce.

Challenges faced by Animal Husbandry in India

- **Low Productivity:** The average annual milk yield of Indian cattle is 1777 kg per animal per year as against the world average of 2699 kg per animal per year during 2019.
- **Disease Outbreaks:** Frequent outbreaks of diseases like Foot and Mouth Diseases, Black Quarter infection, and Influenza continue to affect Livestock health and lower productivity. Annual losses due to animal diseases are estimated at ₹20,000 crores.
- **Greenhouse Gas Emissions:** India's huge population of ruminants contributes to greenhouse gas emissions, adding to global warming. Livestock sector contributed to around 64% of the total GHG emissions from Indian Agriculture.
- **Limited Artificial Insemination:** Limited Artificial Insemination services due to a deficiency in quality germplasm, infrastructure, and technical manpower, coupled with a poor conception rate following artificial insemination, have been major impediments.
- **Financial Neglect:** The Livestock Sector has not received the policy and financial attention it deserves, with only about 12% of the total public expenditure on agriculture and allied sectors allocated to it, despite its 30% contribution to agricultural GDP.
- **Insurance and Extension:** Only 6% of animals (excluding poultry) are provided insurance cover. Livestock extension has remained grossly neglected, with only about 5% of farm households accessing information on livestock technology.
- **Feed and Fodder Deficit:** India is deficit in dry fodder by 11%, green fodder by 35%, and concentrated feed by 28%. The common grazing lands too have been deteriorating quantitatively and qualitatively.
- **Slaughtering Facilities:** In India, slaughtering and processing facilities are inadequate and a lot of such facilities are in the unorganized sector. According to the Ministry of Food Processing Industries (MOFPI), about 70% of poultry processing is in the organised sector and 30% is in the unorganized sector.

Inadequate availability of credit, poor access to organized markets, limited availability of quality breeding bulls, deficiency of vaccines and vaccination set-up, and diversion of feed and fodder ingredients for industrial use are other major challenges faced by the sector.

Government Initiatives to Promote Livestock in India:

- **Rashtriya Gokul Mission:** Aims to develop and conserve indigenous bovine breeds, enhancing milk production and profitability for farmers.
- **National Livestock Mission:** Focuses on improving livestock production systems both quantitatively and qualitatively, alongside capacity building for all stakeholders.
- **National Artificial Insemination Programme:** Introduces novel methods for impregnation in female breeds and aims to prevent the spread of genital diseases, thereby improving breed efficiency.
- **National Cattle and Buffalo Breeding Project:** Prioritizes the genetic upgrading and conservation of important indigenous breeds.
- **Animal Husbandry Infrastructure Development Fund (AHIDF):** Under this program, the Central Government offers the borrower with a 3% interest subvention and a credit guarantee of up to 25% of the total borrowing.

India should invest in research and innovation, modernize infrastructure, and strengthen training programs for farmers. Promoting sustainable practices, improving market access, enhancing genetic improvement programs, securing feed and fodder, and bolstering disease control measures will advance the livestock sector. Consistent policy support and public-private partnerships are crucial for sustainable growth.

Natural Farming

Context: The Union Cabinet has approved the launch of the NMNF as a standalone Centrally Sponsored Scheme under the Ministry of Agriculture with total outlay of Rs 2481 crore till 2025-26.

About National Mission on Natural Farming (NMNF)

- NMNF is an upgraded version of the Bhartiya Prakritik Krishi Paddhati (BPKP), implemented from 2019 to 2024 under the Paramparagat Krishi Vikas Yojana (PKVY).
- Natural Farming (NF) was also promoted in a 5 km belt along the Ganga River under the Namami Gange scheme (FY 2022-23).

Key Features of NMNF

- **Target Area:**
 - Implement Natural Farming in 15,000 Gram Panchayat clusters.
 - Reach 1 crore farmers and cover 7.5 lakh hectares in 2 years.
- **Support Structures:**
 - Establish 10,000 Bio-input Resource Centres (BRCs) for supplying Jeevamrit, Beejamrit, etc.
 - Develop 2,000 Model Demonstration Farms (MDFs) at KVKs, Agricultural Universities, and on farmers' fields.
- **Capacity Building:** Train 18.75 lakh farmers in natural input preparation and practices. 30,000 Krishi Sakhis/CRPs will assist and guide farmers in each cluster.
- **Market Support & Branding:** Simple certification system and common branding to help farmers market their NF produce.
- **Monitoring:** Use real-time, geo-tagged monitoring through a dedicated online portal.

More Govt Initiatives to Promote Natural Farming

- **National Centre for Management of Agriculture Extension (MANAGE):** Acts as a knowledge partner for documenting best practices and success stories in Natural Farming.
- **National Centre for Organic and Natural Farming (NCONF):** Promotes chemical-free agriculture and works on certification systems for Natural Farming.

About Natural Farming (NF)

- Natural Farming is a **chemical-free, eco-friendly method of farming** that relies on local livestock, especially indigenous cows, and traditional Indian farming knowledge.
- It **promotes the use of on-farm natural inputs** like: Beejamrut (for seed treatment), Jeevamrut, Ghan Jeevamrut (liquid and solid bio-fertilizers), Neemastra, Dashparni Ark (natural pest repellents)
- **Farming Techniques:** (a) Multi-cropping, dry sowing before monsoon, and mulching, (b) Use of traditional seed varieties, (c) Integration of trees and biodiversity zones around farms.

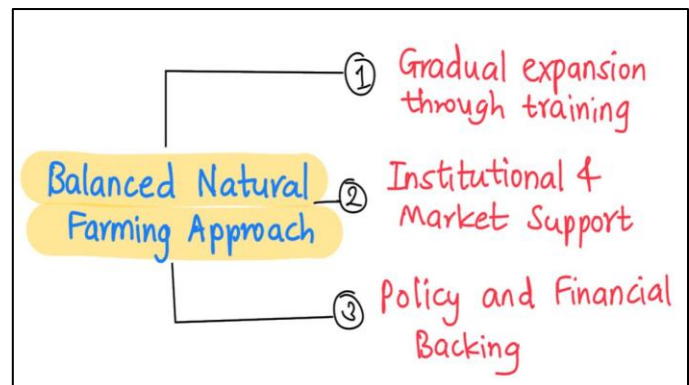
Need for Natural Farming

- **Post-Green Revolution Challenges:** While the Green Revolution boosted food production and moved India from a subsistence to a surplus farming system, it also caused overuse of chemicals and depletion of natural resources. 228 districts in 16 states recorded fertilizer usage above the national average (138 kg/ha), with some over 200 kg/ha.
- **Environmental and Health Concerns:** Indiscriminate use of fertilizers, pesticides, and hormones has led to contamination of food, water, and soil. For example, the Malwa region in Punjab is now known as the “cancer belt” due to high cancer rates linked to pesticide exposure.

- **Benefits for Farmers:** Farmers benefit from lower costs, reduced dependency on external inputs, stable yields, and better incomes, while also ensuring healthier food for consumers. Example: From 2020 to 2022, farmer incomes rose by 56.5% to 80% per year under Andhra Pradesh Community Managed Natural Farming (APCNF) program.
- **Alternative System for Sustainability:** Natural farming offers a solution that is sustainable, low-cost, non-polluting, and resource-conserving. It relies on recycling biomass, natural nutrient cycles, and on-farm inputs like cow dung, urine, and plant extracts. From 2020 to 2022, natural farming practices led to cost savings of 15.5% to 18% per year according to APCNF.
- **Public Investment Efficiency:** Natural farming not only benefits farmers and the environment but also offers a high return on public investment. Example: For every \$1 invested in natural farming, government finances benefit by \$6–\$8.
- **Water and Biodiversity Conservation:** The method encourages better soil health, leading to improved water retention and natural nutrient cycles. Example: Natural farming can result in water savings of up to 50%. It also leads to significant improvements in biodiversity. In APCNF, earthworm populations increased 7 times, avian species by 55%, and beneficial insect presence by 60%.

Challenges of Natural Farming in India

- **Yield Uncertainty:** NF often results in lower yields. ICAR-IIFSR reported a 59% drop in wheat and 32% in basmati rice yields, raising food security and income concerns.
- **Market and Economic Challenges:** Lack of certification, branding, and supply chains prevents farmers from earning premium prices. Transition costs are also high.
- **Input Supply Issues:** NF depends on cow dung, urine, and plant-based inputs. Limited livestock and poor input quality hinder widespread adoption.
- **Knowledge and Skill Gap:** Many farmers lack training. NF is labour-intensive and difficult to adopt without proper awareness and skill development.
- **Policy and Financial Support Deficits:** Government support is minimal. Only 0.8% of the agricultural budget goes to sustainable farming. Extension services and input standards are weak.
- **Climate and Pest Vulnerability:** NF farms are more exposed to droughts, floods, and pests like locusts, increasing the risk of crop failure.
- **Lessons from Sri Lanka:** Sri Lanka's abrupt shift to organic farming led to food shortages, inflation, and protests. It shows the risks of unplanned transitions.
- **Impact on Agro-Industry:** NF may disrupt the ₹18,000 crore agro-chemical sector, affecting businesses and jobs in the crop protection industry.



With strategic planning, scientific backing, and strong community engagement, Natural Farming can become a viable and resilient model that supports farmer welfare, food security, and environmental sustainability.

Agriculture Storage

Context: Under the pilot phase of the World's Largest Grain Storage Plan in the cooperative sector, godowns have been successfully built at Primary Agricultural Credit Societies (PACS) in 11 states.

Current Storage Capacity in India

- **Total Food Grain Production:** As of 2024, India produces approximately 330 million metric tonnes (MMT) of food grains annually.
- **Existing Storage Capacity:** The total storage capacity is about 145 MMT, resulting in a storage shortfall of more than 185 MMT.

- **Central Pool Storage:** As of February 2025, the Food Corporation of India (FCI) and state agencies together have a covered storage capacity of 80.69 million tonnes for central pool food grains, primarily wheat and rice.

Types of Food Storage Infrastructure in India

India uses both traditional and modern methods to store food grains:

- **Traditional Structures:** Kanaja, Kothi, Sanduka, Gummi, Earthen pots, Kacheri. Common in rural areas; low-cost; used by farmers to store grains at home.
- **Modern Structures:** Warehouses, Steel Silos, Godowns. Built using scientific methods; help preserve both quality and quantity of food grains.
- Nearly 60-70% of grains in India are still stored using traditional methods, which are not always reliable or safe in the long term.

Why is Agricultural Storage Infrastructure Important?

- **Reducing Post-Harvest Losses:** Studies by NABARD show significant loss of produce after harvest: Cereals: 4-6%, Pulses: ~6%, Fruits: 6-15%. Scientific storage can reduce these losses to just 1-2%, saving millions of tonnes of food annually.
- **Limited Storage Capacity:** India can only store about 47% of its annual grain production, while other countries often have surplus capacity (up to 131%) for their needs.
- **Preserving Quality and Extending Shelf Life:** Scientific, climate-controlled storage helps maintain quality and nutrition, especially for perishables. Cold-chain systems can double shelf life with every 10°C drop in temperature.
- **Food Security for Growing Population:** By 2047, India's population is expected to reach 1.64 billion. Improved storage ensures enough food is available year-round and prevents shortages.
- **Emergency Preparedness:** Good storage facilities can protect the country's food supply during natural disasters (like floods or droughts) or health crises (like COVID-19), ensuring that people don't go hungry.
- **Better Prices for Farmers:** With access to storage, farmers don't have to sell crops immediately at low prices. They can wait for better market conditions, reducing distress sales and improving income.
- **Job Creation in Rural Areas:** Building and managing godowns, warehouses, and silos creates local employment, helping the rural economy grow.

Government Initiatives

- **World's Largest Grain Storage Plan in Cooperative Sector:** Aims to build decentralized storage at 100,000+ PACS, supporting 130 million farmers by linking storage with procurement and processing.
- **Warehousing Development and Regulatory Authority (WDRA), 2007:** Established WDRA to regulate warehouse operations and implement the Negotiable Warehouse Receipt (NWR) system.
- **PM Kisan SAMPADA Yojana (PMKSY):** Focuses on creating modern infrastructure and supply chains from farm gate to retail, including cold chains and processing units.
- **Construction of Silos under PPP Mode:** FCI is constructing steel silos across the country to modernize storage and reduce losses due to theft and pilferage.
- **Private Entrepreneurs Guarantee (PEG) Scheme:** Encourages private sector participation in warehouse construction, with over 1,923 warehouses created for central pool storage.

Way Forward for Revamping India's Grain Storage System

Shanta Kumar Committee:

- **Scientific Storage:** Phase out Cover and Plinth (CAP) storage; promote container transport for faster, loss-free grain movement.
- **FCI Flexibility:** Allow FCI to operate freely in OMSS and export markets with a business focus.
- **Private Sector Role:** Modernize old FCI storage into silos through private participation.

Ashok Dalwai Committee:

- **Decentralized Planning:** States should plan storage as per local farming patterns.

- **Reduce Farmgate Loss:** Set up village-level pack-houses and transport links.
- **Agri-Logistics:** Build integrated systems for smooth storage and farm-to-market transfer.

Fisheries Sector

Context: The Ministry of Fisheries, Animal Husbandry and Dairying launched the country's first organic fisheries cluster in Sikkim under Pradhan Mantri Matsya Sampada Yojana (PMMSY).

Significance and Scope of Fisheries Sector in India

- **Marine Resources:** India is the second largest fish producing country (184.02 lakh tons (2023-24) with around 8% share in global fish production. Marine fisheries, which make up 30% of total production, involve capturing fish and seafood from the extensive coastline and Exclusive Economic Zone (EEZ).
- **Economic Contribution:** The fisheries sector contributes about 1.09% to India's Gross Value Added (GVA) and over 6.73% to the agricultural GVA.
- **Inland Fisheries:** Inland fisheries, including aquaculture and capture fisheries in freshwater bodies like rivers, lakes, ponds, and reservoirs, contribute approximately 70% of India's total fish production.
- **Export Potential:** Fishery exports reached an all-time high of USD 8.09 billion in 2022-23, growing 26.73% in quantity and 4.31% in value from the previous year.
- **Employment and Livelihood:** The sector supports the livelihoods of over 30 million people, predominantly from marginalized and vulnerable communities.
- **Leading States:** Andhra Pradesh is the largest fish producer in India, followed by West Bengal and Gujarat.

Fish Production in India	
Global Share	8%
Production Volume (2023-24)	184.02 lakh tons
Inland Fisheries (2014-24)	77.71 lakh tons
Marine Fisheries (2014-24)	10.52 lakh tons
Employment	30 million
Contribution to National GVA	1.09%
Contribution to Agri GVA	6.724%

Challenges in the Indian Fisheries Sector

- **Overfishing:** Unsustainable practices and destructive gear have depleted fish stocks and harmed ecosystems. In 1974, 90% of fish stocks were biologically sustainable; now only 66% are. Tuna catch rates in the Indian Ocean have dropped 50-90% over five decades.
- **Illegal, Unreported, and Unregulated (IUU) Fishing:** IUU fishing worsens overfishing and undermines sustainability through unlicensed fishing, banned gear, and catch limit violations. In 2025, 135 Indian fishermen were arrested by the Sri Lankan Navy in Palk Bay; 18 boats using bottom trawling were seized.
- **Climate Change Impacts:** Rising sea temperatures, ocean acidification, pollution, and habitat loss degrade marine life. Freshwater fish availability may drop from 1,820 m³/year in 2010 to 1,140 m³/year by 2050 due to fewer rainy days.
- **Inefficient Market Access:** Weak post-harvest practices, limited value addition, and poor linkages restrict market access. About 69% of inland fishery output is sold in traditional markets with minimal hygiene and processing.
- **Lack of Diversification:** Presently, a majority of India's fish exports are concentrated in shrimp; however, the value-added product share in this domain remains at a low 7%.
- **Limited Technology:** Small fishers often lack modern tools like GPS and fish finders. They rely on outdated methods like bagan nets, which catch juveniles and endangered species.
- **Gender Disparities:** Women dominate low-paying post-harvest roles, often unrecognised. They handle 73.6% of marketing and 75.7% of curing/processing tasks in India.

Government Initiatives for Fisheries Sector

- **Pradhan Mantri Matsya Sampada Yojana (PMMSY):** Launched in May 2020 under 'Atma Nirbhar Bharat', the scheme targets a 70-lakh ton increase in fish production and aims to double fishers' incomes by 2024-25. Key elements include vessel insurance, aquaculture support, and infrastructure upgrades.
- **Fisheries and Aquaculture Infrastructure Development Fund (FIDF):** Started in 2018-19, it addresses sectoral infrastructure gaps. It provides concessional finance via NABARD, NCDC, and banks to develop fishing harbors, cold chains, and other key logistics.
- **PM-Matsya Kisan Samridhi Sah-Yojana (PM-MKSSY):** Aims to formalize the sector through a National Fisheries Digital Platform, promote aquaculture insurance, improve value chains with grants, and upgrade fish safety and quality standards.

India's diverse aquatic ecosystems support a key fishing industry vital for the economy and food security. Ensuring sustainability requires stricter regulations, better technology, ecosystem restoration, and fisher empowerment to protect both resources and livelihoods.

Agriculture Infrastructure Fund

Context: Punjab has utilised 100% of the Rs 4,713 crore allocated to it by the Centre under the Agriculture Infrastructure Fund (AIF) scheme.

Agriculture Infrastructure Fund (AIF)

- AIF is a Central Sector Scheme launched in 2020, implemented across India.
- It provides medium to long-term debt financing for building post-harvest infrastructure and community farming assets. Support is provided through interest subvention and credit guarantee.
- Since August 2024, it also includes secondary-level processing such as making juices, jams, and pulp, promoting value addition.
- The scheme now also allows convergence with PM-KUSUM (Component-A) to promote clean energy use in agriculture infrastructure.

Need for the Agriculture Infrastructure Fund

- **Reducing Post-Harvest Losses:** India loses ₹1.52 lakh crore annually due to poor storage and logistics. AIF funds modern warehousing, cold storage, and processing to cut wastage and maintain crop quality.
- **Improving Farmers' Income:** With an average monthly income of agricultural households in India is ₹13,661 (2021-22), AIF helps farmers earn more by allowing them to store produce and sell at better prices.
- **Enhancing Market Access and Value Realization:** Improved infrastructure allows farmers to access larger and more lucrative markets directly, bypassing intermediaries and increasing their share of the final value.
- **Promoting Agri-Entrepreneurship and Private Investment:** The fund encourages startups, Farmer Producer Organizations (FPOs), cooperatives, and private players to invest in agri-logistics, food processing, and value addition.
- **Boosting Rural Employment:** Infrastructure development under the AIF creates new job opportunities in villages, both directly (construction, operation) and indirectly (logistics).
- **Modernizing Indian Agriculture:** The fund supports the adoption of new-age technologies (IoT, AI, smart logistics) and modern farming practices, making Indian agriculture more efficient, competitive, and sustainable.
- **Strengthening Food Security:** By improving storage and supply chain facilities, the AIF helps stabilize food supplies, reduce seasonal shortages, and enhance food security.
- **Facilitating Credit Access:** The AIF provides affordable, long-term loans with interest subvention and credit guarantees, making it easier for rural stakeholders to invest in critical infrastructure.

Impact of Agriculture Infrastructure Fund

- **Employment Generation:** As of January 26, 2025, AIF investments created over 9 lakh jobs, with 97% projects located in rural areas, enhancing rural livelihoods.

- **Employment Per Unit:** On average, 11 people are employed per unit during peak season. Rajasthan reported the highest average (27), while Maharashtra recorded the lowest (5).
- **Storage Capacity Expansion:** AIF-supported infrastructure added 550 LMT of storage capacity, including: 510.6 LMT dry storage, 39.4 LMT cold storage. This can annually save approx. 20.4 LMT of food grains and 3.9 LMT of horticultural produce.
- **Support to Agro-Processing & Mechanization:** Agro-processing centers helped increase farmers' income by up to 20% and reduced post-harvest losses. Custom Hiring Centers promoted farm mechanization and improved crop residue management.
- **Government Convergence:** 31% of AIF units availed additional government subsidies, benefiting from convergence with other schemes.
- **Credit-Driven Entrepreneurship:** For 85% of the units, access to AIF loans was the key enabler in starting their ventures.

By supporting value addition, modern technologies, and clean energy integration, AIF is not only improving farmer incomes and reducing post-harvest losses but also laying the foundation for a more resilient, efficient, and self-reliant agricultural economy.

Farmer Producer Organizations (FPOs)

Context: The target of forming 10,000 FPOs under the Central Sector Scheme was achieved. Launched in 2020, the scheme has an outlay of ₹6,865 crore till 2027-28.

What are Farmer Producer Organizations (FPOs)?

- FPOs are legal entities formed by farmers, registered under Part IXA of the Companies Act or the Co-operative Societies Act of respective states.
- They aim to collectivize small, marginal, and landless farmers to enable economies of scale in both production and marketing of agricultural and allied products.
- Around 30 lakh farmers are linked to FPOs in India, with 40% being women members.
- These FPOs are now engaged in agri-business activities worth thousands of crores, offering farmers better prices, inputs, and access to markets.

Key Functions and Benefits

- **Collective Marketing:** FPOs aggregate members' produce, enabling direct sales to buyers and reducing the role of intermediaries. This often results in higher prices for farmers' produce, up to 15-20% more than non-members.
- **Input Procurement:** They purchase seeds, fertilizers, and other inputs in bulk, reducing costs by up to 25% for members.
- **Value Addition:** FPOs can engage in processing, grading, and packaging, enabling members to earn more by selling value-added products.
- **Access to Credit and Services:** FPOs facilitate better access to institutional finance, government schemes, training, and modern technologies.
- **Capacity Building:** They provide training and support to improve members' business and agricultural skills.
- **Bargaining Power:** By acting collectively, FPOs increase farmers' negotiating strength in the marketplace.

Challenges faced by FPOs

- **Financial Constraints:** FPOs struggle to access credit, limiting their ability to invest in infrastructure, technology, and farming improvements. Weak finances and cash flow issues affect long-term viability.

Case Study: Bhangar Vegetable Producers' Company

- Formed by 1,750 marginal farmers in South 24 Parganas, West Bengal, the Bhangar Vegetable Producers' Company was established under the NVIUC with support from the State Horticulture Department and ADS. Located near Kolkata, it benefits from a strong urban market.
- **Impact:** Farmers saw yield rise from 7,500 kg to 9,500 kg and income increase from ₹22,000 to ₹85,000 post-intervention.

- **Inadequate Infrastructure:** Lack of storage, processing, and transport facilities hampers operations and market access. Poor post-harvest handling and absence of value addition reduce profits.
- **Professional Management Deficit:** A shortage of trained and experienced professionals in rural areas limits FPOs' ability to run operations with a business-oriented and growth-driven approach.
- **Market Access and Linkages:** FPOs face trouble building reliable market links and often depend on intermediaries, thus reducing margins.
- **Skill and Knowledge Gaps:** FPO Leaders and members lack business skills and technical know-how.
- **Low Awareness and Participation:** Many farmers, especially in remote areas, don't understand the benefits of FPOs, leading to poor engagement.
- **Quality Standards and Certification:** Obtaining certifications and meeting quality benchmarks can be expensive and technically challenging for small FPOs, limiting access to premium markets.
- **Social and Economic Challenges:** Low literacy, weak entrepreneurial culture, and established market players pose obstacles. Building trust and unity among diverse farmers is still difficult.

Major Government Initiatives for FPOs in India

- **Central Sector Scheme for Formation and Promotion of 10,000 FPOs:** Launched in 2020, the scheme aims to form and support 10,000 FPOs by 2027-28, with a ₹6,865 crore budget. It promotes collectivized farming, ensures better market access, and enhances farmers' income through financial, technical, and digital support.
- **Credit Guarantee Fund (CGF):** CGF provides loan cover to financial institutions, improving FPOs' access to credit and lowering borrowing risks.
- **Integration with e-NAM and ONDC:** FPOs are linked to e-NAM and ONDC platforms, enabling digital marketing, wider market access, and improved price realization.
- **Common Services Centres (CSCs):** Through a partnership with CSC SPV, 10,000 FPOs will offer digital and public services, boosting digital inclusion in rural India.

To ensure the long-term success and sustainability of Farmer Producer Organizations (FPOs), it is essential to integrate technology, strengthen capacity building, and establish transparent evaluation systems. A standardized scoring model will help stakeholders assess FPOs accurately, encouraging informed investment, policy support, and resource allocation to empower rural agribusiness and farmer livelihoods.

Agricultural Credit

Context: Kisan Credit Card (KCC) loan defaults rose by 42% in scheduled commercial banks (excluding RRBs), indicating growing stress in the agriculture sector.

What is Agricultural Credit?

- Agricultural credit refers to the financial assistance provided to farmers and individuals engaged in agricultural activities to meet their various farming needs.
- It is a type of loan or credit facility extended by financial institutions, such as banks, cooperative societies, or other lending agencies, to support agricultural operations and related activities.

Current Trends and Scenario of Agri Credit in India

- As per Economic Survey 2024-25, Ground-level agricultural credit has grown with loans to small and marginal farmers rising from ₹3.46 lakh crore in FY15 to ₹14.39 lakh crore in FY24.

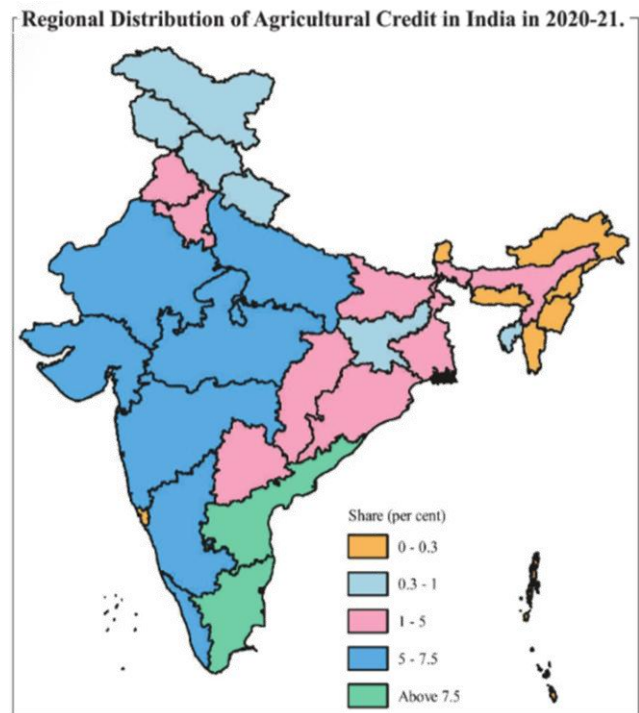
Features of Agricultural Credit in India

- **Institutional Credit:** As per Economic Survey 2024-25, institutional sources like banks and cooperatives now dominate agri-credit, with non-institutional credit dropping from 90% in 1950 to 23.4% in FY22.
- **Role of NABARD:** In 2022-23, NABARD disbursed ₹158,905 crore (short-term) and ₹107,015 crore (long-term) to boost rural credit through refinancing and development support.
- **Short-term and Long-term Credit:** Short-term loans cover seasonal needs like seeds and labor; long-term credit funds capital assets like tractors, irrigation systems, and land development.

- **Priority Sector Lending:** RBI mandates 40% of ANBC (Adjusted Net Bank Credit) to priority sectors, with 18% to agriculture, ensuring a steady flow of institutional credit to the farm sector.
- **Crop Insurance:** Crop insurance protects farmers from natural disasters, reduces credit risk, and improves access to loans by increasing their repayment capacity and creditworthiness.
- **Government Subsidies and Interest Subvention:** Farmers get 2% interest subvention on short-term loans up to ₹3 lakhs, reducing borrowing costs and encouraging credit uptake for farm investments.

Challenges

- **Insufficient Volume of Credit:** Studies show that over 60% of farmers do not have access to formal credit, and this leads them to depend on informal sources that charge interest rates as high as 30-40% annually.
- **Inadequate Loan Amount:** 40% of farmers in a NABARD study said sanctioned loans were insufficient for farm expenses, forcing diversion of funds to non-productive uses.
- **Neglect of Small Farmers:** Credit agencies often overlook small and marginal farmers, preferring wealthier ones due to better creditworthiness and lower lending risk.
- **Increasing Overdue:** Low repayment capacity has led to rising agricultural loan overdues, making credit institutions more cautious in extending fresh rural loans.
- **Inadequate Institutional Coverage:** Institutional credit, especially from cooperatives, still doesn't cover all rural farmers, failing to meet growing rural and agricultural credit needs.
- **Uneven Regional Distribution:** Economic Survey 2021 shows credit is concentrated in the Southern region; North-Eastern states receive a disproportionately low share of farm credit.



Importance of Agri-Credit

- **Capital for Investment:** Agri-credit helps farmers buy machinery, seeds, fertilizers, and pesticides, enabling crucial investments that boost productivity in capital-intensive agriculture.
- **Technology Adoption:** Agri-credit enables investment in AI tools, drones, and sensors, helping optimize inputs, improve crop health, and increase yields and farm efficiency.
- **Crop Diversification:** Credit support allows farmers to grow varied crops, reducing reliance on one crop, minimizing risks, and stabilizing income across agricultural seasons.
- **Infrastructure Development:** Farm credit aids development of irrigation, storage, and transport systems. For example, drip irrigation alone boosts yields by 2% to 29%.
- **Financial Inclusion:** By funding inputs like seeds and tools, agri-credit brings small farmers into the formal economy, reducing rural poverty and enabling commercial farming.
- **Market Linkages:** Credit-linked schemes help farmers access training, marketing infrastructure, and new buyers, ensuring fair prices and stronger ties to larger markets.

Government Initiatives to Boost Agri-Credit

- **Lead Bank Scheme:** National banks were assigned districts to promote socio-economic development through credit outreach.
- **Service Area Approach:** Rural bank branches adopt village clusters to improve financial inclusion and rural credit access.

- **Kisan Credit Card (KCC):** Offers farmers flexible credit up to ₹5 lakh with easy withdrawals and fewer formalities.
- **Agri Infrastructure Fund:** Provides ₹1 lakh crore in long-term loans for developing agricultural infrastructure across stakeholders.

To improve agri-credit access, targeted schemes must focus on small and marginal farmers, women, and remote areas with simplified, low-collateral loans. Financial literacy, alternative collateral options, fintech solutions, and microfinance support can together create a more inclusive, efficient credit system, empowering farmers and boosting sustainable agricultural growth.

Dairy Sector

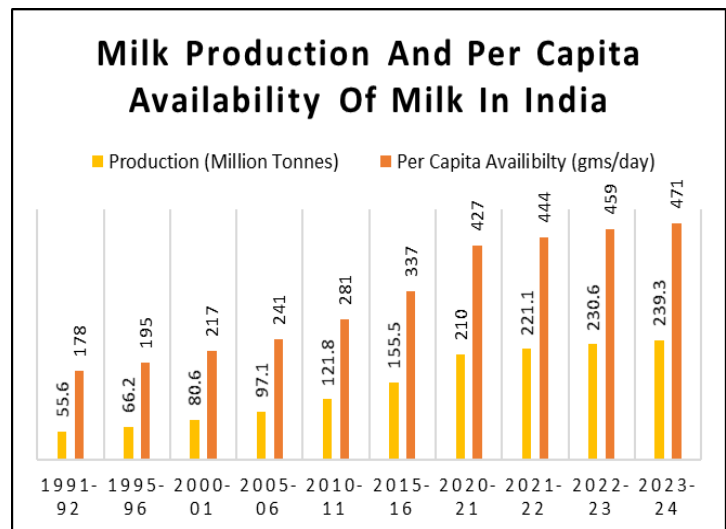
Context: The Union Cabinet approved the revamped National Programme for Dairy Development with a ₹2,790-crore outlay (2021-26) to modernize dairy infrastructure, boost milk processing, and quality control.

Dairy Sector of India

- India ranks first in global milk production, accounting for 25% of the world's output.
- Milk production in India has reached about 239 Million Tonnes in 2023-24.
- India's milk processing capacity is about 126 million liters per day, highest in the world.
- Per capita consumption of milk in the country was 107 grams in 1970, today, it has increased to 471 grams per capita, which is more than the world average of 300 grams.

Significance of Dairy Sector of India

- **Contribution to Economy:** Dairy is the single largest agricultural commodity contributing 5% of the national economy, the contribution of dairy sector to agriculture sector is 24%
- **Employment:** About 45 crore people from 9 crore rural households, especially marginal farmers and women, are directly associated with the dairy sector today.
- **Export:** According to APEDA 2023, India exported 63,738.47 metric tonnes of dairy products globally, with a total value of 272.64 million USD in the year 2023-24.
- **Income diversification:** Dairy farming provides a supplementary income source for small and marginal farmers, reducing their dependence on agriculture alone. A milch owning household earns about 38% of its income from agriculture and about 20% from dairying.
- **Protein Source:** Dairy products make up 12% of the daily protein consumption of Indians, according to an analysis of the 2011-12 National Sample Survey.
- **Safety Net:** Dairying provides a source of regular income, whereas income from agriculture is seasonal. This regular source of income has a huge impact on minimizing risks to income. There is some indication that areas where dairy is well developed have less incidence of farmer suicide.



Challenges faced by Dairy Sector of India

- **Low Productivity:** Currently, low productivity per animal hinders development of the dairy sector. Despite being the world's largest milk producer, India's productivity per animal is very low, at 1777 kg per year as against the world average of 2699 kg per year during 2019.
- **Shortage of Feed and Fodder:** There is a widening gap between the supply and demand of feed and fodder, which limits animal productivity. The area under cultivated fodder production in India is limited only to 4-5% of the total cultivable land.

- **Challenges with Dairy Cooperatives:** Although dairy cooperatives manage 40% of the country's marketable milk surplus, they are less favored by small and landless farmers due to purchasing more than 75% of the milk at lower price bands.
- **Insufficient Government Support:** As of August 2020, India required 2.02 lakh artificial insemination (AI) technicians but only had 1.16 lakh available. Despite dairy farmers being included in the Kisan Credit Card program, less than a quarter of loan applications from 1.5 crore farmers in 230 milk unions were forwarded to banks by October 2020.
- **Informal Channels:** Large share of milk (70-85%) of marketable surplus goes through informal channels where quality is a big concern. A study in Maharashtra found that a worrying 78% of the loose milk available in the market is adulterated.
- **Lack of Price Support:** Despite the significant economic value of milk production, comparable to wheat and rice combined, India lacks official periodic estimates for production costs and Minimum Support Prices (MSPs) for milk.

Government Initiatives to Boost Dairy Industry

- **National Programme for Dairy Development (NPDD):** Launched in 2014, it aims to build and strengthen infrastructure for producing high-quality milk and its procurement, processing, and marketing.
 - The Revised NPDD targets 10,000 new cooperatives, 2 Milk Producer Companies (MPCs), improved infrastructure, 3.2 lakh jobs, and better incomes, especially for women in dairy farming.
- **Rashtriya Gokul Mission:** It aims to enhance milk output and productivity, increasing farmers' income from dairying. It focuses on genetic improvement and conservation of indigenous cattle breeds, with farmers accessing technologies like sex-sorted semen, IVF, and genomic selection.
- **Dairy Entrepreneurship Development Scheme (DEDS):** It supports milk production, procurement, preservation, transportation, processing, and marketing, offering capital subsidies for projects.

To sustain growth, India must boost animal productivity, expand fodder supply, formalize milk markets, strengthen cooperatives, improve veterinary services, and ensure fair pricing and credit access.

Industries and Services

India's Semiconductor Push

Context: US announced a new partnership with India to explore semiconductor supply chain opportunities.

About Semiconductors

- Semiconductors are **materials used to make tiny electronic parts called chips or integrated circuits**. These chips are made up of very small electronic components such as transistors, diodes, capacitors, and resistors, all connected together in a compact design.
- Most chips today are made using **silicon**, which is why it's called the "silicon chip." These chips **contain millions or even billions of transistors**, which act like tiny switches. They turn on and off very quickly to process information like sound, images, videos, or data signals.
- Semiconductors are the **heart of modern electronic devices**. They are used in almost every area of life, including: Mobile phones and computers, Medical equipment, Communication systems, Transportation and automobiles, Military and defence technologies, Clean energy systems like solar panels and smart grids
- They help devices store, process, and transmit data, which makes them essential for the digital world we live in.

Significance of Indigenising the Semiconductor Ecosystem

- **Reduce Imports & Save Money:** India imports semiconductors worth \$25-30 billion from countries like China, South Korea etc. Making chips in India can cut costs and save foreign exchange.
- **Boost the Economy:** A local chip industry will create jobs, attract investments, and support Make in India. It could generate 1 million jobs by 2026.

- **Economic Opportunity:** The global semiconductor market is projected to be worth over \$1 trillion by 2030. India seeks to become a global hub for chip manufacturing, design, and packaging.
- **Ensure National Security:** Currently, the entire Indian defense ecosystem relies on imports, purchasing semiconductors worth \$1 billion annually for national security purposes. Domestic production reduces risks from foreign control or cyber threats.
- **Invest in Strategic Technologies:** Semiconductors are the backbone of modern technologies, from AI to 5G/6G networks. The Shakti Fab represents India's transformation from a consumer to a producer of cutting-edge technologies in the 21st century.

Challenges in Manufacturing Semiconductors in India

- **High Cost of Setting Up:** Semiconductor manufacturing is highly capital-intensive. A large amount of money is required for both research and development (R&D) and building manufacturing facilities (fabs). Based on the main cost factors and assumptions, we estimate that a factory finished in 2026 would cost between \$35 billion and \$43 billion over ten years.
- **Limited Access to Advanced Technology:** The global industry is dominated by a few players: Taiwan and South Korea account for 80% of chip production. Only ASML (Netherlands) makes EUV lithography machines, essential for advanced chips. India's access to such technology is limited.
- **Extremely Complex Manufacturing Process:** Making a semiconductor chip is a highly technical and detailed process. A single chip may require between 500 and 1,500 steps during production. The process needs: Pure silicon wafers, Specialty and general-use chemicals, Uninterrupted power supply, Large amounts of clean water, Highly controlled factory environments (clean rooms)
- **Shortage of Skilled Manpower:** India has many chip design engineers, but few are trained for factory-level semiconductor manufacturing. By 2027, the industry may face a shortage of 2.5–3 lakh skilled workers.
- **Low Investment in Original R&D:** India lacks strong research in chip design and development. With R&D investment below 1% of GDP, progress in advanced technologies remains slow.
- **Policy and Administrative Challenges:** Global investors and companies are concerned about: Bureaucratic delays and overlapping responsibilities between ministries. For example, the Ministry of Electronics and IT (MeitY) handles chip policy, but skill development is under a different ministry, creating a coordination gap.

India's Global Partnerships

- **India-US Partnership:** In September 2024, the US and India launched a new partnership to assess and strengthen India's semiconductor supply chain. Earlier, both nations signed an MoU on semiconductor supply chain and innovation (2023). Focus areas: ecosystem assessment, policy alignment, skill-building, and joint research.
- **India-Singapore Semiconductor Partnership (2024):** Singapore is home to 9 of the world's top 15 chip firms. India aims to learn from Singapore's well-established semiconductor value chain.
- **India-Taiwan Collaboration:** India's first commercial chip fabrication plant is being developed in Gujarat by Tata and Taiwan's PSMC, with a massive investment of ₹91,000 crore.

India's Domestic Policy on Semiconductors

India Semiconductor Mission (2021)

- This mission, launched by the government, is a key initiative under the **Ministry of Electronics and IT (MeitY)** to develop a full-fledged semiconductor ecosystem.

Key Goals

- Build domestic chip design and manufacturing capacity
- Encourage R&D, innovation, and job creation
- Promote collaboration between industry and academia
- Attract investments and boost skill development

Semicon India Programme

- Launched with an outlay of **₹76,000 crore**
- Offers **financial support to companies investing in chip design, fabs, and display units**
- Modified to compete with global incentive schemes
- Four major schemes under this programme:
 1. Semiconductor Fabs Scheme
 2. Display Fabs Scheme
 3. Compound Semiconductors and ATMP/OSAT Scheme
 4. Design Linked Incentive (DLI) Scheme

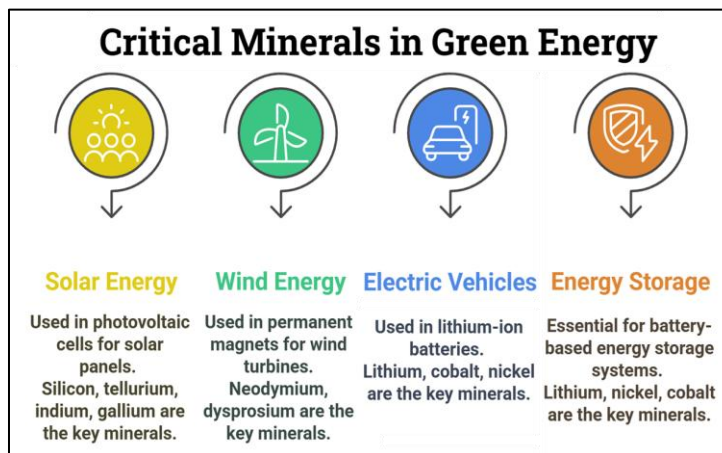
India's push for chip self-sufficiency is both an economic necessity and a strategic imperative. Through policy support, global partnerships, and investment in talent and infrastructure, India is laying the foundation for a resilient and future-ready semiconductor ecosystem.

Reliance of India on Critical Minerals Imports

Context: A recent report by the Institute for Energy Economics and Financial Analysis (IEEFA) highlights that India's demand for critical minerals is likely to more than double by 2030.

What are Critical Minerals?

- Critical minerals are those that are **essential for the economy but have a high risk of supply disruption**.
- They are used in a wide range of high-tech applications- such as semiconductors, electric vehicles (EVs), solar panels, wind turbines, and advanced defense equipment.
- Common critical minerals include lithium, cobalt, nickel, rare earth elements (REEs), graphite, tin, antimony, and beryllium.



India's Import Dependence

- India imports over 90% of its critical minerals requirement. Major supplier countries include China, Australia, Chile, and African nations.
- Lithium (used in EV batteries) is mostly imported from Chile and Argentina.
- Cobalt (another battery metal) is mainly imported from the Democratic Republic of Congo via China.
- Rare Earth Elements (REEs) essential for electronics and defense are heavily controlled by China, which accounts for over 60% of global production.

Why India's Reliance on Critical Mineral Imports Is a Strategic Concern?

- **Supply Chain Vulnerabilities:** India depends on China for over 75% of its electronic components, including key smartphone parts like circuit boards and cameras. In early 2024, China restricted exports of critical equipment to Foxconn in India, delaying iPhone production and exposing India's supply chain vulnerability.
- **National Security Threats:** India's defence sector relies heavily on imports, including over 50% of its titanium needs and key rare earths. Disruptions in supply can threaten critical infrastructure like satellites, radars, and missile systems.
- **Risk of Economic Coercion:** China's dominance in the global mineral supply chain increases India's exposure to potential economic coercion and strategic blackmail.
- **Price Volatility:** The price of key minerals like lithium has more than doubled in recent years (from US\$ 7,000/ton in 2015 to over US\$ 15,000/ton in 2024), impacting the cost-effectiveness of green energy and manufacturing projects.
- **Impact on 'Make in India' and Atmanirbhar Bharat:** Fluctuations in international supply and pricing can undermine domestic manufacturing ambitions and slow down self-reliance efforts.
- **Limited Domestic Processing Capacity:** India has 44.9 million tonnes of cobalt ore and 163.9 million tonnes of copper reserves, but lacks the processing capacity to utilise them, as per an IEEFA report.
- **Innovation Bottlenecks:** Lack of assured access to critical minerals hinders the growth of green technologies, 5G, AI, semiconductors, and other emerging sectors.
- **Human Rights Violations:** Cobalt and other minerals are often mined under unsafe conditions and with the use of child labour, particularly in countries like the Democratic Republic of Congo.
- **Environmental Degradation:** Mining operations, both abroad and domestically, pose serious threats to local ecosystems, biodiversity, and indigenous communities if not regulated properly.

Government Initiatives to Address the Issue

National Critical Mineral Mission (NCMM)

- Approved by the Union Cabinet in January 2025 with a total outlay of Rs 34,300 crore over 7 years.
 - "Whole-of-government" Approach involving ministries, PSUs, private firms, and research bodies.
 - NCCM aims to reduce India's dependence on imports of critical minerals and ensure self-reliance for high-tech industries, clean energy, and national defense.
- **KABIL (Khanij Bidesh India Ltd):** A joint venture by NALCO, HCL, and MECL to secure overseas mineral assets through investments and collaborations.
 - **National Mineral Policy 2019:** Recognizes the importance of ensuring mineral security and recommends exploration through public-private partnerships.
 - **Critical Minerals List (2023):** India released its own list of 30 critical minerals to prioritize strategic planning.
 - **Mines and Minerals (Development and Regulation) Amendment Act, 2023:** Allows private sector participation in exploration, especially for deep-seated minerals.
 - **Bilateral Engagements:** India has signed MOUs with Australia, Argentina, and Africa for joint exploration and processing of critical minerals.

India's journey toward becoming a global manufacturing hub and green economy hinges on reducing its dependence on critical mineral imports. A comprehensive strategy that includes exploration, international cooperation, recycling, and innovation is vital for safeguarding economic security and strategic autonomy in the 21st century.

MSMEs

Context: The Centre has approved the Mutual Credit Guarantee Scheme for MSMEs to offer loan guarantee coverage through NCGTC to Member Lending Institutions.

About MSMEs

- Micro, Small, and Medium Enterprises (MSMEs) are classified based on investment in plant, machinery, and annual turnover under the MSMED Act, 2006.
- Since independence, MSMEs have grown notably. Once known as Small-Scale Industries (SSI) in the 1960s-70s, the sector has expanded in scale and business variety.
- MSMEs in India cover both traditional and modern units, divided into eight groups: handlooms, handicrafts, coir, sericulture, khadi, village industries, SSIs, and powerlooms.

New MSME Classification Criteria

As per Union Budget 2025

Enterprise Category	Revised Investment Limit	Revised Turnover Limit
Micro	₹2.5 crore	₹10 crore
Small	₹25 crore	₹100 crore
Medium	₹125 crore	₹500 crore

Significance of MSMEs for India

- **Regional Dispersal of Industries:** Unlike large industries that cluster in metro cities, MSMEs are widely spread across India, helping reduce regional industrial imbalances. Around 51.25% of MSMEs are in rural areas and 48.75% in urban areas.
- **Equitable Development Opportunities:** MSMEs generate income and non-farm jobs, benefiting rural regions, artisans, and weaker social groups. Socially backward communities own 66.27% of MSMEs, with OBCs accounting for about 50%.
- **Women's Participation:** Women's workforce participation is rising, especially in MSMEs, which promote female entrepreneurship. As per Economic Survey 2025, 22% of MSMEs in India are women-owned, reflecting growing gender inclusion.

Data Bank

Estimated Number of MSMEs

• 6.34 Crores

Share of MSMEs in GDP

• 29.2%

Share of MSMEs in Export Sector

• 43.6%

Employment Provided by MSMEs

• 11.10 Crore jobs

Share of MSME in manufacturing output

• 36.2%

- **Completing the Economic Supply Chain:** MSMEs act as support units for large industries by meeting local supply demands. Many have developed around major plants, like Tata Motors, helping complete the industrial value chain efficiently.
- **Engines of Entrepreneurship:** MSMEs tap into local skills and innovation, needing less capital and facing lower risks. Their smaller size enables quick decisions and seizing new business opportunities with minimal red tape.
- **Inclusive Growth and Employment Generation:** As the second-largest employer after agriculture, MSMEs are labor-intensive and provide jobs to marginalized groups. They help reduce poverty, narrow income gaps, and improve education and health outcomes.

Challenges Faced by MSMEs

- **Limited Access to Capital:** The MSMEs in the country currently face a credit gap of \$530 billion, and only 14% of the 63 million small businesses in India have access to credit. Nearly 40% of MSME lending happens in the informal sector, leading to working capital shortages.
- **Infrastructural Bottlenecks:** Poor transport, unreliable power, and limited amenities hurt MSME productivity and growth. A study rated marketing and infrastructure issues (mean score 29.57) as the top challenge for emerging MSMEs.
- **Poor Marketing:** MSMEs struggle to enter supply chains dominated by big firms. They rely on middlemen who delay payments and offer low prices. According to a FICCI report, less than 6% advertise online, mainly depending on traditional methods, per FICCI data.
- **Compliance Challenges:** Tax, labor, and environmental rules burden MSMEs. Limited digitization and legal awareness worsen this. A single-location MSME may face 648 compliance tasks annually, with 34.8% carrying jail terms.
- **Slow Technology Adoption:** High costs, low skills, and poor infrastructure slow tech adoption. MSMEs' small size and tight margins disadvantage them. A 2020 CRISIL survey found 47% of micro and 53% of small firms use digital platforms.
- **Owned by Disadvantaged Sections:** MSMEs led by women, SCs, and STs face extra hurdles due to bias and exclusion. Nearly 76% of women-owned MSMEs still rely on informal capital.
- **Global Competition:** MSMEs face intense pressure from global giants like Amazon, which enjoy better resources and economies of scale, making it harder for small firms to stay competitive.
- **Low Bargaining Power:** Limited purchase volumes and storage capacity weaken MSMEs' ability to negotiate prices or maintain consistent quality, raising costs or reducing standards.
- **Single-Run Businesses:** Many MSMEs are run by one person lacking full management skills, limiting their ability to handle exports or scale operations.
- **Inferior Quality Products:** To stay cheap, MSMEs often compromise on quality. They lack funds for R&D and cannot meet industry benchmarks, affecting competitiveness.

Government Initiatives for MSMEs

- **Prime Minister Employment Generation Programme (PMEGP):** A flagship scheme providing financial assistance to set up new micro-enterprises in manufacturing and service sectors, implemented through the Khadi and Village Industries Commission (KVIC).
- **Credit Guarantee Scheme for Micro & Small Enterprises (CGTMSE):** Offers collateral-free loans up to ₹1 crore, reducing the risk for lenders and making credit more accessible to MSMEs.
- **Pradhan Mantri Mudra Yojana (PMMY):** Provides loans from ₹50,000 up to ₹10 lakh to micro-enterprises at different growth stages (Shishu, Kishor, Tarun), supporting startups and small businesses.
- **Public Procurement Policy for MSEs:** Mandates government departments and PSUs to procure a certain percentage of their requirements from registered MSEs, ensuring market access.
- **Zero Defect Zero Effect (ZED) Scheme:** Provides bronze, silver, and gold certifications for eco-friendly manufacturing based on 20 quality parameters like timely delivery.

MSMEs will play a pivotal role in making India a \$5 trillion economy over the next five years. Already a cornerstone of the economy, MSMEs contribute significantly to employment and income generation, accounting

for nearly 30% of GDP. With 63 million businesses, resolving the sector's biggest hurdle - access to formal credit, will allow MSMEs to reach their full potential and propel the Indian economy forward.

India's Textile Industry

Context: Bharat Tex 2025, India's largest global textile event, was recently held at Bharat Mandapam, New Delhi.

Overview of India's Textile Industry

- India ranks as the sixth-largest exporter of textiles in the world, contributing to 12% to exports.
- It contributes around 4.5% to global textile trade, with nearly 47% of India's textile and apparel exports going to the United States and the European Union.
- The industry is a major employment generator, offering direct jobs to over 45 million people and indirect livelihood support to over 100 million, especially women and rural workers.

India's Textile Export Challenges

- Lagging Behind Global Competitors:** India lags behind China, Vietnam, and Bangladesh due to higher production costs, fragmented supply chains, and limited trade deals. Vietnam, for example, exported \$40 billion worth of apparel in 2023, aided by integrated fibre-to-fashion systems and FTAs with key markets.
- Fragmented Supply Chain and High Logistics Costs:** India's cotton and textile chains span multiple states, increasing transport and coordination costs. In contrast, China and Vietnam use vertically integrated systems that enable efficient, large-scale, and low-cost production.
- High Raw Material Costs in MMF Segment:** India's man-made fibre sector struggles with high input costs. Quality Control Orders (QCOs) limit polyester and viscose imports, forcing use of pricier domestic materials. Compared to China, polyester is 33-36% and viscose 14-16% more expensive in India.
- Low Export Competitiveness:** India's exports are less competitive due to high costs, inefficient supply chains, and lack of trade concessions. Meanwhile, Markets like Bangladesh benefit from LDC status and tariff-free access in major global markets.
- Sluggish Industry Growth:** Although the textile industry employs over 4.5 crore people and contributes 2.3% to India's GDP and 12% to total exports. Between FY20 and FY24, the textile sector contracted by 1.8% annually, and export performance remained nearly flat, rising marginally from \$33.4 billion in FY20 to \$34.1 billion in FY24.
- Sustainability Pressures and Rising Costs:** Global brands demand sustainable practices such as renewable energy, waste control, and traceability. The EU has rolled out 16 new rules (2021-2024), impacting 20% of India's textile exports. These norms raise costs, especially for smaller firms.
- Fast Fashion and Waste Management:** With fashion waste expected to reach 148 million tonnes by 2030, India faces urgent pressure to enhance recycling and reuse systems. Currently, only 34% of textile waste is reused, and just 25% is recycled into yarns, highlighting the need for circular economy reforms.

Major Government Initiatives for the Textile Industry in India

- PM MITRA (Mega Integrated Textile Region and Apparel) Scheme:** Developing seven world-class textile parks with integrated infrastructure, aiming to attract \$10 billion investment and generate 3 lakh jobs per park.
- PLI Scheme:** Offers financial incentives to boost domestic production of MMF textiles and technical fabrics, with a ₹10,683 crore outlay for exports and jobs.

India's Textile Sector



GDP Contribution

2% of India's GDP



Current Market Size

USD 176 billion in 2023



Projected Market Size

USD 350 billion by 2030



Global Trade Share

4.5% of global textile trade



Cotton and Fibre Production

2nd largest producer of cotton and fibres



Employment

45 Million Workers

- **Samarth Scheme:** Provides skill training for textile workers, especially in rural areas, to bridge the skill gap and enhance employability across the textile value chain.
- **National Technical Textiles Mission (NTTM):** Promotes R&D, innovation, and skill development in technical textiles to boost exports and reduce dependence on imports.
- **ATUFS (Amended Technology Upgradation Fund Scheme):** Grants capital subsidies for upgrading textile machinery and technology, aiming to enhance productivity, quality, and global competitiveness.
- **Rebate of State and Central Taxes and Levies (RoSCTL) & RoDTEP:** Refunds unrebated taxes and duties on exports, making Indian textile products more competitive in global markets.
- **Scheme for Integrated Textile Parks (SITP):** Supports creation of modern textile parks to reduce costs and improve efficiency; 56 approved, 34 currently operational.

To make India's textile sector globally competitive, the focus must be on developing vertically integrated parks, easing raw material imports, and building **"fibre-to-fashion"** hubs. Expanding PM MITRA parks in labour-rich states, securing trade deals, promoting MMF consumption, and supporting MSMEs in sustainable practices are crucial. With fashion waste rising, India must tap into the recycled textile market through better waste management and green incentives.

Pradhan Mantri Khanij Kshetra Kalyan Yojana

Context: The Ministry of Mines plans to set up a Program Management Unit for smooth implementation of Pradhan Mantri Khanij Kshetra Kalyan Yojana.

About Pradhan Mantri Khanij Kshetra Kalyan Yojana (PMKKKY)

- The Ministry of Mines launched PMKKKY in 2015 for the welfare of people and areas affected by mining-related operations.
- The scheme utilizes funds generated by District Mineral Foundations (DMFs).
- **Objectives**
 - To implement various developmental and welfare projects in mining-affected areas, complementing existing Central and State government schemes.
 - To minimize or mitigate the adverse impacts of mining- on the environment, health, and socio-economic conditions of people in mining districts.
 - To ensure long-term, sustainable livelihoods for the affected populations in mining areas.

Implementation

- The scheme is implemented by DMFs of the respective districts using the funds accrued to them.
- The Mines and Minerals (Development and Regulation) Amendment Act, 2015, mandates the establishment of DMFs in all mining-affected districts across the country.
- The Central Government has notified the contribution rates that miners must pay to DMFs:
 - For mining leases executed before 12th January 2015: miners must contribute 30% of the royalty payable.
 - For leases granted on or after 12th January 2015: the contribution is 10% of the royalty payable.

Utilisation of Funds:

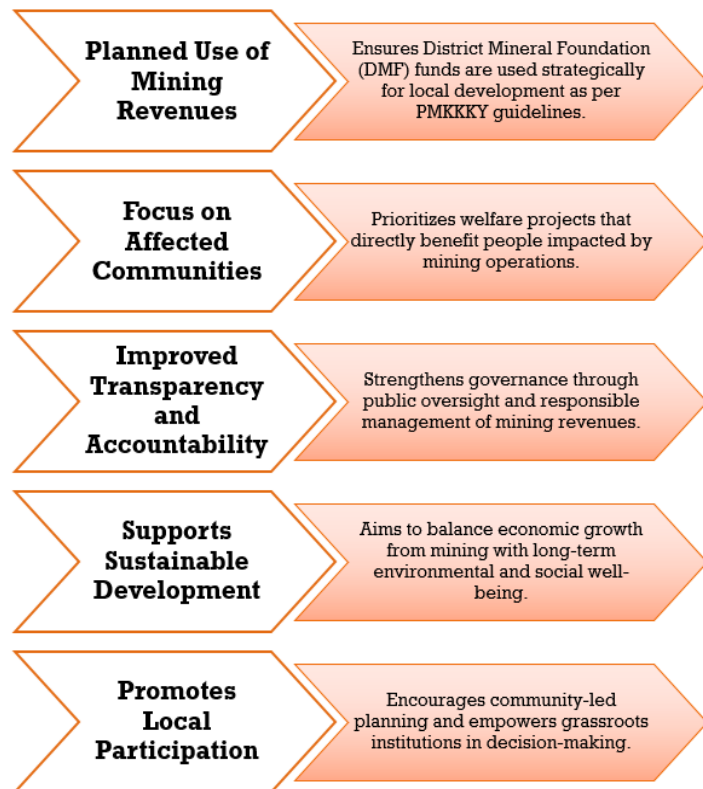
- At least 60% of PMKKKY funds must be used for high-priority areas such as: Drinking water supply, Healthcare, Education, Environmental preservation.
- Up to 40% of the funds can be used for other priority areas, including: Physical infrastructure, Irrigation, Energy, Watershed development

Key Concerns with PMKKKY

- **Reduced Funding and Resource Constraints:** Lower DMF contributions (10% for new and 30% for old leases) limit available funds, weakening the developmental impact in mining-affected regions.
- **Misplaced Priorities in Fund Utilization:** Funds are often diverted to infrastructure, pollution control, and administration instead of directly supporting mining-affected communities, risking misuse and dilution of scheme goals.

- **Limited Community Involvement and Public Participation:** Gram sabhas have minimal role outside Scheduled Areas, limiting local participation, community oversight, and grassroots ownership of PMKKKY initiatives.
- **Transparency and Accountability Issues:** Poor public access to fund data and beneficiary details hampers transparency, enabling potential mismanagement and weakening public monitoring of PMKKKY projects.
- **Slow Implementation and Underutilization of Funds:** A large number of sanctioned projects remain incomplete. This delays benefits to mining-affected communities.
- **Insufficient Focus on Directly Affected Areas:** Guidelines lack strong prioritization for directly affected populations, despite recommendations to allocate at least 60% of funds to these communities.
- **Monitoring Mechanisms Remain Weak:** Monitoring portals and committees exist, but their effectiveness is limited, with inconsistent oversight weakening project accountability and impact assessment.

Significance of the PMKKKY



To truly fulfil its potential, PMKKKY must strengthen transparency, improve fund utilization, and enhance grassroots involvement, ensuring that mining wealth leads to lasting well-being for local communities.

Startups in India

Context: The Department for Promotion of Industry and Internal Trade (DPIIT) has notified the expansion of the Credit Guarantee Scheme for Startups (CGSS)

About Startups

- A startup in India is described as a business headquartered in the country, established less than a decade ago, with an annual turnover below ₹100 crores.
- These ventures are known for their innovative ideas, products, or services. Startups commonly secure financing through personal savings, crowdfunding, angel investors, and venture capital to fuel their expansion.

Startup Ecosystem in India

- India has emerged as the world's third largest startup ecosystem with over 1.59 lakh startups and 118 unicorns.
- The growth of India's startup ecosystem from 2015 to 2022 has been remarkable: Total funding for startups has surged by 15 times, and the number of investors has witnessed a 9-fold increase.
- Women are leading more than 45 per cent of Indian startups.
- India boasts a thriving community of 118 Unicorns (Startup with a value of over \$1 billion), collectively valued at USD 354 billion.

Crucial Role of Startups in India's Economic Growth

- **Job Creation:** Indian startups have generated over 15 lakh direct jobs across sectors like e-commerce, fintech, edtech, and health tech. They also boost the gig economy. E.g., Swiggy had 2 lakh+ delivery partners in 2023.
- **Innovation and Technological Advancement:** Startups drive innovation across sectors. Many are focused on electric vehicles (EVs), contributing to the 2.5 million+ EVs currently on Indian roads.

- **Democratization of Technology:** Startups like PhonePe and agritech firms bring tech to underserved areas, especially Tier 2 and 3 cities. UPI now serves 5 crore merchants and over 30 crore users in India.
- **Increased Foreign Investment:** Indian startups raised \$12 billion in 2024, up from \$10 billion in 2023. Key sectors like fintech, enterprise tech, and consumer services continued to attract investment, with **fintech securing the highest share**.
- **Addressing Social Issues:** Startups are solving real-world problems like healthcare and sanitation. For example, PeeSafe provides portable, hygienic toilets for women, tackling rural sanitation challenges.

Government Initiatives to for the Startup ecosystem:

- **Startup India Action Plan:** Launched in 2016, the 19-point plan addresses diverse startup needs through simplification, funding support, incentives, and academia-industry collaboration.
- **Startup India Hub:** Set up by DPIIT, it's a centralized digital platform for executing startup programs and supporting all stakeholders.
- **Funding Schemes:** DPIIT runs the Fund of Funds for Startups (FFS), Startup India Seed Fund Scheme (SISFS), and Credit Guarantee Scheme for Startups (CGSS), supporting various startup stages.
- **National Startup Awards (NSA):** Recognizes innovation and diversity, highlighting standout startups from smaller cities across India.
- **National Startup Advisory Council (NSAC):** Chaired by the Commerce Minister, NSAC guides startup policies with input from ministries and ecosystem stakeholders.

Challenges Faced by Startups

- **Funding Challenges:** The startup funding landscape in India is heavily concentrated in key hubs like Bengaluru, Delhi NCR, and Mumbai, which collectively attracted 92% of all funds raised between 2018 and 2020.
- **Lack of Female Leadership:** Women are significantly underrepresented in leadership positions within venture capital firms and startups themselves. According to a 2022 Survey, women constitute 34% of the startup workforce in India, yet only less than 20% of women are in leadership roles.
- **Regulatory Bottlenecks:** The bureaucratic hurdles involved in acquiring licenses and permits can greatly impede the launch and operation of startups. India's low ranking of 136 out of 190 countries in the World Bank Doing Business Report's Starting Business indicator reflects this challenge.
- **Limited Funding:** Securing adequate funding, especially for early-stage ventures with limited track records, remains a significant challenge. The gap between available funding and the demand from startups persists. Indian startups have reported around 73% decline in funding in 2023 as compared to 2022.
- **Limited Mentorship:** Young entrepreneurs, particularly in Tier 2 and Tier 3 cities, often lack access to mentors who offer valuable business advice, hindering their ability to navigate challenges and make informed decisions. According to industry experts, 95% start-ups fail due to lack of mentors.
- **Weak Enforcement Mechanisms:** It takes an average of 4-5 years to resolve a patent infringement case in India. This lengthy process discourages startups from investing in R&D due to concerns about protecting their intellectual property.
- **Economic Uncertainty:** Economic fluctuations and policy changes can impact the business environment for startups, affecting consumer spending, investor confidence, and regulatory frameworks. Uncertainty in the economic landscape adds complexity and risk to startup operations.

India can unlock its startup potential by encouraging innovation, improving funding access, supporting women entrepreneurs, easing regulations, offering mentorship, and protecting intellectual property. These steps will drive sustainable growth, create jobs, and help India achieve its \$5 trillion economy target while becoming a global startup and innovation hub.

Make in India

Context: Launched in 2014 to promote manufacturing and self-reliance, the Make in India initiative marks its 10th anniversary in 2024.

About Make in India

About Make in India	
Aim	- Aligns with the Vocal for Local vision - Aims to make India a global hub for manufacturing and design.
Key Objectives	- Achieve 12–14% annual industrial growth rate - Create 100 million jobs - Raise manufacturing share to 25% of GDP by 2025
Make in India 2.0	- Launched in 2021 - Focuses on 27 key sectors across various ministries and state governments.
Four Pillars	
1. New Processes	Focus on Ease of Doing Business through regulatory simplification and digital approvals.
2. New Infrastructure	Development of industrial corridors, smart cities, and high-speed connectivity to support industry.
3. New Sectors	FDI liberalised in Defence, Insurance, Medical Devices, Construction, and Railway infrastructure.
4. New Mindset	Government acts as a facilitator rather than a regulator, supporting innovation and investment.

Key Initiatives under Make in India

- **Production Linked Incentive (PLI) Schemes:** PLI schemes allocated ₹1.97 lakh crore across 14 sectors. By 2024, 755 projects were approved, attracting ₹1.23 lakh crore in investment and creating 8 lakh jobs.
- **PM GatiShakti:** Launched in 2021, PM GatiShakti unifies 36 ministries to boost infrastructure and logistics. It focuses on seven key sectors like roads, railways, and ports for economic growth.
- **Semiconductor Ecosystem Development:** The Semicon India Programme, with a ₹76,000 crore budget, aims to reduce import dependence and build India's self-reliant semiconductor manufacturing capacity.
- **National Logistics Policy (NLP):** Introduced in 2022, NLP works with PM GatiShakti to cut logistics costs, improve India's LPI rank, and promote a tech-driven, sustainable logistics ecosystem.
- **Industrialization and Urbanization:** The National Industrial Corridor Programme fosters smart cities and industrial hubs. With 12 new projects worth ₹28,602 crore, it strengthens India's global manufacturing status.
- **Startup India:** Started in 2016, Startup India supports entrepreneurs. By 2024, India had over 1.48 lakh recognized startups creating more than 15.5 lakh jobs.
- **Tax Reforms (GST):** The 2017 GST reform unified India's tax structure into a single market, simplifying compliance and enhancing ease of doing business.

Major Achievements under 'Make in India'

- **Manufacturing Growth:** India now produces 400 million toys annually and is the 2nd-largest mobile phone manufacturer, making 99% of smartphones domestically.
- **Renewable Energy:** India ranks 4th globally in renewable energy production, showing leadership in green manufacturing.
- **Ease of Doing Business:** India rose from 142nd (2014) to 63rd (2020) in World Bank's Doing Business Rank due to reforms like IBC, GST, and Jan Vishwas Act.
- **Competitiveness:** India now offers one of the lowest corporate tax rates in Asia. Over 40,000 compliances were removed and 3,800 provisions decriminalized.
- **Single Window System:** The National Single Window System has cleared over 75,000 approvals, streamlining investor and business processes.
- **FDI Inflows:** FDI grew from ~\$45 billion (2014–15) to a record \$85 billion (2021–22), totaling \$667.41 billion over the last decade.
- **Export Growth:** India recorded \$437 billion in merchandise exports in 2024. Key sectors: pharma (\$27B), vaccines (60% of global supply), and high-end tech.

- **Defence Exports:** Indigenous platforms like LCA Tejas, MBT Arjun, and Dhanush artillery have been exported, strengthening self-reliance in defence.
- **Innovation and R&D:** India climbed 42 places in the Global Innovation Index since 2015, now ranking 39th, showing strong R&D focus.
- **Sustainable Manufacturing:** Initiatives like the National Green Hydrogen Mission aim to create 6 lakh jobs and save ₹1 lakh crore by reducing energy imports.

Challenges and Criticism

- **Stagnant Manufacturing Contribution:** The share of manufacturing in GDP was 15.9% in 2023–24, down from 16.7% in 2013–14, far below the targeted 25%. Manufacturing growth has averaged only 6% per year since 2014, well short of the 12–14% goal. Gross Value Added (GVA) growth slowed from ~8% (2012) to 5.5% (2023), reflecting weak sectoral momentum.
- **Underperformance in Job Creation:** Despite a target of 100 million new jobs, manufacturing employment declined from 51 million (2017) to just 35 million (2023), highlighting jobless growth in the sector.
- **Investment Decline and FDI Challenges:** Gross Capital Formation, which is a measure of productive investment, fell from 39.1% of GDP (2008) to 32.2% (2023). Net FDI inflows dropped from 1.5% of GDP (2013–14) to 0.8% (2023–24). A large share of FDI has gone to services and IT, with limited impact on manufacturing, contrary to Make in India's core goals.
- **Weak Export Performance:** Merchandise exports fell from ~10% of GDP (2013–14) to ~8% (2022–23), signaling declining global trade competitiveness despite increasing absolute volumes.
- **Concerns over PLI Scheme Viability:** Questions have been raised about the cost-effectiveness of PLI schemes. For example, in Micron's \$2.75 billion semiconductor unit, the government bore a large share of the investment, raising doubts about long-term sustainability and value for public spending.

Going forward, India's focus must remain on inclusive industrialisation, sustainable production, and strengthening domestic capabilities to fully realise the vision of a globally competitive, self-reliant economy.

Infrastructure and Infrastructure Financing

Dedicated Freight Corridor

Context: A recent study by the University of New South Wales (UNSW) has analyzed the role of Dedicated Freight Corridors (DFCs) in transforming freight transportation in India.

What are Dedicated Freight Corridors (DFCs)?

- DFCs are exclusive railway tracks built for the movement of goods (freight), not for passenger trains.
- These routes allow: Faster movement of freight trains; Operation of double-stack container trains (containers stacked one over the other); Running of heavy-haul trains (trains carrying very large loads)
- They improve connectivity to economic centres, mines, ports, and industrial clusters, leading to faster movement of raw materials and finished goods.
- This boosts the efficiency and capacity of freight transport in India, making it more reliable and quicker.

Key Findings from the UNSW Study

- **Boost to the Economy:** DFCs are contributing ₹16,000 crore to the country's gross domestic product.
- **Lower Freight Costs:** The freight trains running on DFCs are faster, carry heavier loads, and are safer, leading to major savings in transport costs.

Major Corridors Under Construction

The Ministry of Railways launched the DFC project in 2006, beginning with two main corridors:

Eastern Dedicated Freight Corridor (EDFC)

- **Length:** 1,337 km
- **Route:** From Sonnagar (Bihar) to Ludhiana (Punjab)
- **Purpose:** To connect coal mines and thermal power plants
- **Status:** Fully completed and operational.

Western Dedicated Freight Corridor (WDFC)

- **Length:** 1,506 km
- **Route:** From Jawaharlal Nehru Port Terminal (Mumbai) to Dadri (Uttar Pradesh)
- **Purpose:** To serve major ports like Mundra, Kandla, Pipavav, and Hazira in Gujarat, and major cement and industrial hubs
- **Status:** 93% completed (Mar 2025)

- The government established a Special Purpose Vehicle (SPV) called the **Dedicated Freight Corridor Corporation of India Limited (DFCCIL)** in 2006.

- DFCCIL is responsible for construction, operation, and maintenance of the DFCs.



- **Impact on Prices:** The efficiency of DFCs has helped reduce the prices of various goods by up to 0.5%, making things slightly more affordable for consumers.
- **Revenue Growth:** Between FY 2018-19 and FY 2022-23, DFCs contributed around 2.94% to the increase in Indian Railways' revenue.
- **Freight Share and Efficiency:** Over 10% of Indian Railways' freight traffic is now handled by DFCs. On average, 325 trains run on DFCs every day, a 60% increase from the previous year.
- **Cargo Movement:** Since operations began, DFCs have transported over: 232 billion Gross Tonne Kilometres (GTKMs) - total weight moved over a distance; 122 billion Net Tonne Kilometres (NTKMs) - net cargo weight moved over a distance.
- **Inclusive Growth:** States with lower per capita income (GDP) are gaining significantly from the DFCs, indicating a social equalizing effect. This helps reduce regional disparities in economic development.

Challenges in Implementation and Operation of DFCs

- **Land Acquisition Issues:** Land procurement delays, especially in densely populated areas, have slowed construction. E.g. The last stretch of 104-km between Saphale and JNPT (Jawaharlal Nehru Port) on WDFC has not been completed due to these issues.
- **Cost Overruns:** Project costs have exceeded initial estimates due to delays, rising material prices, and increased interest expenses. Initially estimated at ₹81,459 crore, the revised cost of DFC is now around ₹1,24,000 crore.
- **Underutilisation of Infrastructure:** At present, the DFCCIL is operating just 30 trains daily (each way) on WDFC, which is far lower than 80 trains (each way) running on Eastern DFC.
- **Environmental and Social Concerns:** Corridor construction has disrupted local ecosystems and displaced communities, leading to protests in some areas.
- **Coordination Challenges:** Poor coordination among government bodies and agencies has led to procedural delays and inefficiencies.
- **Procurement and Supply Chain Delays:** Import delays and labour shortages, especially during COVID-19, impacted construction timelines.
- **Limited Modal Integration:** Lack of smooth links with roads, ports, and logistics hubs hampers efficient cargo transfer.

The Economic Survey 2022-23 noted that India's logistics costs remain high at 14-18% of GDP. Fully operational DFCs can help reduce these costs, enhance supply chain efficiency, and promote inclusive economic growth.

Indian Railways

Context: The Railways (Amendment) Act, 2024 was passed by the Parliament.

About the Railways (Amendment) Act, 2024

- The Act repeals the outdated Indian Railway Board Act, 1905 and integrates its provisions into the Railways Act, 1989, thereby granting statutory status to the Railway Board under a modern legal framework.

Key Provisions of the Act

- **Statutory Railway Board:** A new Railway Board is constituted as a statutory body under the Railways Act, 1989.
- **Appointment and Structure:** The Central Government will determine: Number of Board members, Qualifications and experience, Terms and conditions of service, Mode of appointment for the Chairperson and members
- **Functions:** The Railway Board will serve as the apex policy and decision-making authority for Indian Railways, ensuring efficient management and strategic planning.
- **Decentralisation of Powers:** Enhanced autonomy is granted to Railway Zones to enable quicker, context-specific decision-making and improved operational efficiency.

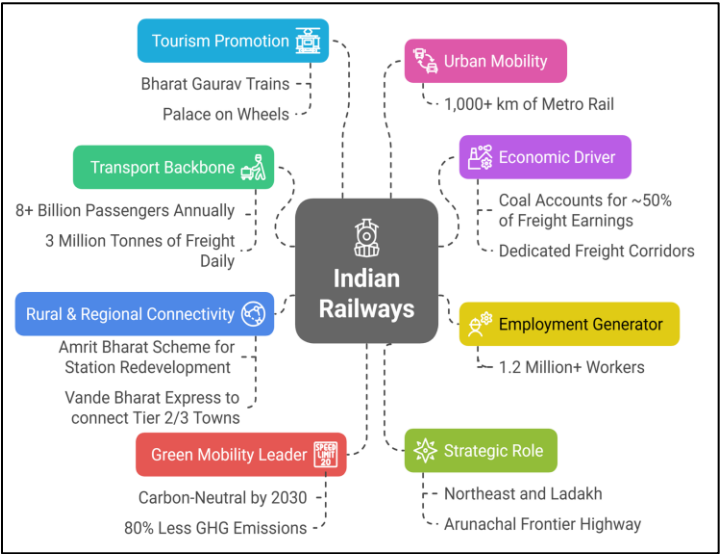
- **Independent Regulator:** Provision for setting up an independent regulatory authority to oversee: Tariff setting, Safety standards, Private sector participation
- **Organisational Continuity:** The existing structural setup of Indian Railways remains intact, ensuring continuity in day-to-day operations.

About Indian Railways (IR)

- Indian Railways (IR) operates the fourth-largest rail network in the world, spanning over 70,000 km.
- It runs approximately 21,000 trains daily, transporting around 23 million passengers and 3 million tonnes of freight.

Key Issues with Indian Railways

- **Financial Stress:** Rising costs and low revenues have strained railway finances. In FY 2024-25, the Operating Ratio stood at 98.32%, meaning Railways spent ₹98.32 to earn ₹100. Heavy subsidization of passenger fares through freight earnings has reduced the competitiveness of rail cargo.
- **Infrastructure Gaps:** Under-provisioning in the Depreciation Reserve Fund led to delays in replacing outdated railway assets, causing pending works worth ₹34,318.79 crore by 2021-22, risking safety and efficiency.
- **Safety:** The 2023 Balasore train accident exposed serious safety lapses. The Kavach anti-collision system remains underutilized, covering only 1,548 route kilometers (2.24%).
- **Station Congestion & Poor Crowd Control:** Overcrowding, lack of holding areas, and poor planning lead to stampedes. Example: New Delhi station stampede (Feb 2025) caused by a last-minute train announcement.
- **Freight Sector Decline:** Rail share in freight transport dropped from 85% (1951) to 27% (2022). Dependency on bulk goods like coal poses risks amid energy transition.
- **Sustainability Challenges:** Diesel use continues; electrification is uneven. Railways emit ~4% of India’s GHGs, despite being more efficient than roads. Poor waste management at stations affects environmental performance.
- **Slow High-Speed Rail Progress:** Mumbai-Ahmedabad bullet train only 30% complete (2024); new deadline is 2028. Delays in land acquisition, funding, and political approval hinder growth.



Measures to Revitalise Indian Railways			
Financial Sustainability	• Reduce reliance on borrowings • Monetize land assets • Adopt dynamic pricing • Attract private investment in stations and services	Reform Freight Sector	• Diversify to container and auto logistics • Expand Dedicated Freight Corridors • Link with ports, roads via PM Gati Shakti
Infra-structure & Improve Safety	• Prioritize track renewal • Install Kavach and AI-based signalling • Improve crowd control with station redesign and automation	Accelerate High-Speed Rail	• Expedite bullet and semi-high-speed corridors • Promote Make in India for high-speed trains
Digital and Techno-logical Upgrades	• Use AI, IoT, blockchain for asset monitoring and freight tracking • Expand digital ticketing and mobility apps • Integrate financial and operational data	Upgrade Stations & Urban Mobility	• Convert stations into multimodal hubs • Strengthen IRSDC for modernization • Expand suburban and regional networks
Boost Private Participation	• Implement Bibek Debroy Committee suggestions • Invite investment in rolling stock, logistics parks, key routes	Promote Green Railways	• Achieve 100% electrification with renewables • Pilot hydrogen/battery-powered locomotives • Encourage green finance and carbon credits

A balanced approach that combines reform, investment, and innovation, while preserving public service, will ensure Indian Railways remains the backbone of India’s inclusive and sustainable development journey.

Inland Waterways of India

Context: The Union Ministry of Ports, Shipping and Waterways inaugurated an Inland Waterways Terminal (IWT) on Brahmaputra in Assam's Jogighopa.

About Inland Waterways

- Inland Water Transport (IWT) refers to the movement of goods and passengers on rivers, canals, lakes, and other inland waterways.
- India features an extensive network of inland waterways, comprising rivers, canals, backwaters, and creeks, totaling 14,500 km in navigable length.
- Currently, only about 5,200 km of rivers and 4,000 km of canals are accessible to mechanized crafts.
- Inland waterways in India move just 0.1% of total inland traffic by tonne kilometres, contrasting sharply with the United States' 21% utilization rate.
- IWT in India is overseen by the Inland Waterways Authority of India (IWAI), which is an autonomous body under the Ministry of Ports, Shipping and Waterways.

Advantages of an Inland Waterways Network

- **Cost-Effectiveness and Efficiency:** RITES study shows that one liter of fuel moves 24 tons/km by road, 95 tons/km by rail, and 215 tons/km by inland waterways, making IWT far more fuel-efficient.
- **Environmentally Friendly:** IWT emits around 40% less CO₂ than road transport, making it the cleanest mode of internal freight transport.
- **High Cargo Capacity:** Inland waterways carry large volumes efficiently. Moving 2,000 tons takes 77 trucks, 16 rail wagons, or just 2 barges (i.e. boat used navigation on canal or river)
- **Utilizes Existing Infrastructure:** IWT relies on natural rivers and channels, minimizing the need for land acquisition and costly new construction.
- **Boosts Economic Growth:** Low-cost transport of bulk goods, especially in rural areas, supports growth. For example, developing NW-1 could raise Bihar's GDP by 1.33%, with fewer external costs than roadways.

Challenges with Inland Waterways in India

- **Historical Neglect & Low Usage:** Until 2016, only 5 National Waterways (NWs) were developed. Despite being cost-effective and eco-friendly, only 2% of freight in India moves via waterways, compared to over 10% in developed nations.
- **Low Utilization:** Usage remains low due to poor infrastructure, outdated vessels, and limited navigational aids. In FY25, Indian NWs handled 145.5 million tonnes of cargo, while China's inland waterways moved over 4 billion tonnes.
- **Drought & Flooding:** Seasonal droughts reduce water levels, while floods damage infrastructure and disrupt navigation.
- **Siltation & Erosion:** Deforestation and poor land use lead to soil runoff, making rivers shallow and difficult to navigate.
- **Poor Planning:** In 2016, 106 new NWs were declared without thorough feasibility checks. About 63 are currently unviable due to low depth, lack of cargo, or short length, with no proper cost-benefit or environmental analysis.
- **Inadequate Terminal Facilities:** Many terminals lack proper loading/unloading facilities, discouraging businesses from shifting to waterways due to high transition costs and inefficiency.
- **Poor First and Last Mile Connectivity:** Limited road and rail links to terminals make cargo transfer inefficient, as supply chains remain tailored for land transport.
- **Lack of Regular Cargo Movement:** Unassigned cargo routes make the system unreliable. With no assured loads, shippers avoid investment and regular operations.
- **Shortage of Skilled Manpower & Coordination:** IWAI, originally set up for 3 NWs, now oversees many more with limited staff and capacity.

- **Environmental Concerns:** Waterways can disrupt ecosystems, cause pollution, and damage habitats. Example: Mangrove destruction at Dharamtar port (NW10) for jetty construction.

Government Initiatives for Inland Waterways

- **Maritime India Vision 2030:** Launched in November 2020, this 10-year plan aims to replace Sagarmala and boost India's waterways, shipbuilding, and cruise tourism. It targets increasing Inland Water Transport (IWT) modal share to 5% by 2030.
- **Jal Marg Vikas Project (JMVP):** Focuses on upgrading national waterways to promote integration, reduce road and rail congestion, cut carbon emissions, and conserve resources.
- **Inland Vessels Act:** Introduces a single national law replacing multiple state regulations. Registration certificates will be valid across India.
- **Central Road and Infrastructure Fund (CRIF):** The 2000 Act now includes inland waterways as eligible for funding, allowing the Ministry of Finance to support related infrastructure projects.

For India to realize the full benefits of its 14,500 km navigable network, there must be a strong focus on infrastructure development, intermodal connectivity, environmental safeguards, and institutional capacity-building. Strengthening inland water transport is not only key to reducing logistics costs but also to promoting inclusive and green growth across regions.

Information Technology**AI and India**

Context: In 2024, the government approved the IndiaAI Mission with a funding allocation of ₹10,300 crore over five years to boost the country's artificial intelligence capabilities.

What is Artificial Intelligence?

- Artificial Intelligence (AI) is the **ability of machines to perform tasks that typically require human intelligence**—such as learning, reasoning, and understanding language.
- Key components include Machine Learning, Neural Networks, and Natural Language Processing, which help systems learn from data and make intelligent decisions.

Applications of Artificial Intelligence in India

- **Healthcare:** AI tools detect diseases like cancer and heart issues early. Startups like *Tricog* use AI for heart attack alerts, improving rural healthcare and automating hospital workflows.
- **Agriculture:** AI boosts farm output via crop, soil, and weather monitoring. Startups like *Cropin* and *EM3* use AI for pest detection, precision farming, and supply chain optimization.
- **Education:** AI customizes lessons and fills skill gaps. Edutech Platforms offer virtual tutors and adaptive courses, helping students access quality education and improve employability. For example, Univerbal is a language learning platform with AI Tutor.
- **Governance and Public Services:** AI supports smart cities by managing traffic, waste, and energy. Tools like *Datalake* help analyze project data for better governance, while chatbots aid citizen services.
- **Finance and Insurance:** AI detects fraud, predicts risks, and personalized banking services. It's used in underwriting, damage assessments, and real-time trading by banks and insurers. For example, Life Guide Scout, a generative AI underwriting assistant by Swiss Re, helps underwriters with fast, accurate, AI-driven decisions.
- **E-commerce and Industry:** AI improves shopping through smart search and recommendations. In factories, robots automate tasks, enhance quality checks, and optimize supply chains.
- **Security and Cyber Surveillance:** AI enables facial recognition, crowd analysis, and cyber threat detection. It was used in mega events like *Prayagraj MahaKumbh 2025*.

Challenges in India's AI Transformation

- **External Dependence:** India relies heavily on imported GPUs and semiconductor technologies. Most AI startups in India depend on cloud services offered by global giants like AWS, Google, and Microsoft due to the nascent domestic AI chip manufacturing.
- **Skilling and Talent Gaps:** Despite strong AI skill penetration, there is a lack of highly specialised AI researchers. NASSCOM reports a shortage of over 200,000 AI professionals, with demand expected to reach 1 million by 2026.
- **Job Displacement:** AI-driven automation may displace up to 60 million workers in manufacturing by 2030. Uneven AI adoption in rural and Tier-2/3 cities is deepening the digital divide.
- **Ethical and Legal Concerns:** AI systems can reflect bias from flawed data. India lacks clear laws on data use, deepfakes, and facial recognition. Studies show facial recognition often misidentifies people of color- African American and Asian faces were up to 100 times more likely to be misidentified, with some systems accurate in only 19% of cases.
- **Regulatory Uncertainty:** The absence of a centralised regulatory framework means policies are fragmented across ministries. Lack of clarity in assigning liability for AI errors and the “black box” nature of deep learning systems erode public trust.
- **Environmental Impact:** AI infrastructure, especially data centres, contributes significantly to carbon emissions (about 1% of global GHGs, expected to double by 2026).

- **Misuse and Security Risks:** The growing misuse of AI—for instance, creating deepfakes and spreading misinformation which poses national security and social stability challenges.

Indian Government Initiatives for AI

IndiaAI Mission
• Aims to Build a public-private AI ecosystem, improve data quality, and deploy 10,000+ GPUs to strengthen India's indigenous AI capabilities and inclusive development. • Launched by MeitY as an umbrella program for national AI development.

- **BHASHINI:** AI-based language translation tool to make digital content available in all Indian languages, promoting linguistic inclusivity.
- **AIRAWAT:** India's AI supercomputer at C-DAC Pune, providing high-performance computing for AI research and innovation.
- **Future Skills Prime:** A joint MeitY-NASSCOM initiative for AI upskilling and professional certifications, targeting students and industry professionals.
- **Responsible AI for Youth:** A government-backed program training school students in AI fundamentals and ethical usage.
- **RAISE:** Annual summit promoting Responsible AI for Social Empowerment, bringing together global stakeholders to shape inclusive AI.
- **IndiaAI Portal:** A digital platform for AI news, data access, funding updates, and schemes. Jointly managed by MeitY, NeGD, and NASSCOM.
- **Global Partnership on AI (GPAI):** A 29-nation initiative for ethical, inclusive AI development. India is a member; OECD hosts the Secretariat.

India must integrate AI into education, promote AI research, and boost skilling initiatives to build a future-ready workforce. Encouraging public-private partnerships and incentivizing startups will strengthen local innovation. A dedicated AI regulatory framework, aligned with global standards, is essential to ensure responsible AI development. Strengthening infrastructure and data governance will support sustainable and inclusive AI growth.

Global AI Regulation

Context: The PM Modi visited France to co-chair the Paris Artificial Intelligence (AI) Action Summit 2025. The 2nd India–France AI Policy Roundtable was also convened.

Global AI Governance

Global AI governance refers to the frameworks, principles, and mechanisms, spanning national, regional, and international levels. It is designed to ensure the safe, ethical, and equitable development and deployment of artificial intelligence technologies.

Need for Global AI Governance

- **Risk Mitigation:** AI can cause major social and ethical harm, such as biased algorithms and unintended outcomes. For example, Amazon's AI recruiting tool was shut down after it was found to penalize women. Global governance helps reduce risks like job loss, data breaches, misinformation, and misuse in critical sectors like health, finance, and law enforcement.
- **Promoting Ethical AI:** Governance frameworks ensure AI aligns with human values and protects rights and freedoms. Ethical standards prevent discrimination, and privacy violations, encouraging fairness and accountability.
- **Trust and Transparency:** Trust in AI relies on clear, explainable, and accountable systems. Without governance, AI becomes a “black box,” reducing user confidence and slowing adoption.
- **Facilitating Innovation:** Effective governance balances innovation with safety and ethics. It enables responsible AI development and promotes international cooperation, shared practices, and joint solutions.
- **Data Privacy:** AI handles large volumes of sensitive data, making strong governance crucial to safeguard privacy and prevent misuse or breaches.

Challenges in Global AI Governance

- **Regulatory Fragmentation:** Global AI laws differ widely, shaped by national interests and values. The EU stresses ethics, the US prioritizes innovation and security, while China backs state control. These conflicting approaches hinder global cooperation and standardization.
- **Geopolitical Rivalries:** Global competition for AI dominance fuels trade barriers, monopolies, and inequality, especially in poorer nations. At the 2025 Paris AI Summit, national interests hindered consensus— notably, the US and UK declined to sign the main declaration on “inclusive and sustainable” AI, supported by 61 countries.
- **Compliance Complexity:** Organizations face overlapping AI laws across regions, raising compliance costs and legal risks. New laws like the EU AI Act require firms to adopt complex systems to ensure responsible use and avoid penalties.
- **Fast Innovation, Slow Regulation:** AI’s rapid growth outpaces regulation, leading to gaps and uncertainty. Flexible, forward-looking governance is urgently needed to keep up with emerging technologies and risks.
- **Unpredictable Risks:** Generative AI, data threats, cybersecurity issues, and AI’s energy use pose growing risks. Estimates suggest AI could account for 3-4% of global electricity consumption by 2030.
- **Digital Divide:** In high-income countries, fixed broadband costs are about 1% of monthly income, while in low-income countries, the same costs rise to 31%. This gap limits participation from poorer regions in shaping AI governance, making them more vulnerable to AI-driven disruptions.

Regional/Bloc Approaches to AI Governance	
European Union (EU)	Adopted the EU AI Act, which bans dangerous AI and tightly controls high-risk or general-purpose AI. The law applies beyond Europe.
United States (US)	Uses a sector-specific and principle-based approach. Promote innovation while ensuring companies are transparent and responsible.
G7 Pact on AI	A voluntary agreement among major economies to guide the safe and responsible development and use of AI worldwide.
BRICS & Global South	Advocates for a UN-led model focused on development, national control, and helping developing countries build their AI skills.
China & Russia	Created state-controlled AI policies, focusing on national goals, security, and strong government oversight over AI use.

The UN report "*Governing AI for Humanity*" recommends **establishing an AI Office** and an **Independent Scientific Panel within the UN**, launching a **Global Dialogue on AI Governance**, anchoring **governance in human rights and inclusivity**, and **harmonizing global efforts** to avoid fragmentation and ensure accountability.

Deepfakes

Context: Recently, the Minister of State for Electronics & IT, outlined the key regulatory steps taken by the Central Government to tackle misinformation and deepfakes.

What are Deep Fakes?

- Deepfakes are synthetic media, including images, videos, and audio, created using artificial intelligence (AI) technology **to depict events or people that do not exist or never happened in reality.**
- The word deepfake is a combination of **deep** (referring to deep learning, a branch of machine learning involving multiple layers of processing) **and** fake (indicating the content is not real).
- Deepfake technology can: Create entirely fictional people; Make real people appear to say or do things they never actually said or did.
- **How It Works:**
 - Deepfakes are generated using machine learning models called neural networks.
 - To create a deepfake video, the AI is trained on several hours of real footage of a person to learn how their face moves from different angles and under various lighting conditions.

- This trained model is then combined with computer graphics techniques to superimpose the person's likeness onto another individual, creating a convincing fake video.

Key Issues Associated with Deepfakes

- **Erosion of Trust and Authenticity:** Deepfakes make it harder to distinguish real from fake, undermining public trust in media, communication, and even personal interactions, as skepticism grows about what people see and hear.
- **Misinformation and Disinformation:** Deepfakes spread false information, manipulate opinions, and drive misinformation campaigns. They've been used to produce fake news, hoaxes, and influence efforts by nations to sway elections or destabilize societies.
- **Privacy Violations and Personal Harm:** This technology enables misuse of a person's likeness without consent, causing privacy breaches, identity theft, and non-consensual explicit content—often harming women and damaging mental health and reputations.
- **Security and Financial Risks:** Deepfakes enable advanced cybercrimes like impersonation, phishing, and fraud. India is projected to lose ₹70,000 crore in 2025 due to deep fake fraud, financial scams, identity theft.
- **Legal and Regulatory Challenges:** Deepfakes raise legal concerns around liability, intellectual property, and the limits of current laws. Regulations lag behind, demanding new rules and stronger enforcement for synthetic media.
- **Political and Electoral Threats:** They endanger elections by spreading fake content about candidates or events, potentially shaping voter opinion and results.
- **Psychological and Social Impact:** Even the presence of deepfakes causes confusion, fear, and anxiety. People may question real content or fall prey to manipulation, harassment, or emotional blackmail.

Key Government Initiatives to Tackle Deepfakes

- **Legal Framework under the IT Act, 2000:** The IT Act addresses cybercrimes like identity theft, impersonation, and obscene content, covering deepfake-related offences through existing legal provisions.
- **IT Rules, 2021 (Intermediary Guidelines and Ethics Code):** These rules require platforms to remove harmful deepfake content within 24 hours, prevent misleading posts, and provide grievance redress through online appellate mechanisms.
- **Engagement with Industry and Advisory Mechanism:** MeitY collaborates with tech stakeholders to promote ethical AI use; laws like Bharatiya Nyaya Sanhita cover defamation, identity theft, and cyberstalking involving deepfakes.
- **Role of CERT-In (Indian Computer Emergency Response Team):** CERT-In issues advisories on AI threats, promotes cyber safety via tips, campaigns, Cyber Swachhta Kendra, and handles incidents in critical sectors like finance.
- **Cybercrime Coordination by Ministry of Home Affairs (I4C):** I4C enables cybercrime coordination, operates a reporting portal, and offers a toll-free helpline (1930) for public complaints, including deepfake-related cyber frauds.

Extra Mile: India's International Cooperation to Tackle Deepfakes

- ⦿ **OECD AI Principles (2019):** Promote use of AI that is innovative and trustworthy and that respects human rights and democratic values.
 - ⦿ **GPAI (Global Partnership on Artificial Intelligence):** Includes a Working Group on Responsible AI which is looking into synthetic media and misinformation, including deepfakes.
 - » **GPAI (Hosted by India in 2023) New Delhi Declaration** brought together all major initiatives for AI – UN Advisory Group on AI, UK AI Safety Summit – at one event at GPAI New Delhi Summit.
 - » AI Research Analytics and Knowledge Dissemination Platform (**AIRAWAT**) and National Program on Artificial Intelligence and its role in shaping AI ecosystem in India was prominently emphasized.
 - ⦿ **Bletchley Park AI Safety Summit (UK, 2023):** First global summit on frontier AI risks, including misuse of generative AI like deepfakes.
 - » India supported the UK's proposal for a Global AI Safety Institute to monitor AI misuse, including threats from deepfakes.
 - ⦿ **UNESCO Guidelines on the Ethics of AI (2021):** Advocates "Right to Human Review" where people can challenge content generated by AI affecting them.
- India-US Joint Statement on Emerging Technologies (2023 & 2024):** Focuses on deepening cooperation in AI ethics and combating AI-driven disinformation.

Moving forward, India must strengthen laws, promote digital literacy, and foster global cooperation to combat deepfakes, ensuring ethical AI use, public trust, and protection of democratic and individual rights.

Quantum Technology

Context: India is developing a drone-based quantum key distribution system through a C-DOT and Synergy Quantum India Pvt. Ltd. partnership.

What is Quantum Technology?

Quantum technology harnesses the **principles of quantum mechanics, focusing on the behavior of subatomic particles**. It includes various applications that leverage quantum phenomena to achieve advancements in fields such as computing, communication, and sensing.

Key Principles of Quantum Technology

- **Superposition:** Quantum objects, such as qubits, can exist in multiple states at once. Unlike classical bits (0 or 1), qubits encode information as both 0 and 1 simultaneously, enabling vast processing power.
- **Entanglement:** Two particles become linked so that a change in one instantly affects the other, even across large distances.
- **Interference:** Particles can exist in multiple places at once, allowing wave-like quantum states to interfere. This enables faster computations in quantum systems.

Applications of Quantum Technology

- **Quantum Communication:** Leveraging quantum physics, it enhances security and long-distance communication through two key advantages. **Quantum key distribution (QKD)** encrypts messages using qubits, making decryption more challenging than classical binary bits. Qubits' sensitivity prevents disruption or observation without collapse, enhancing security.
- **Quantum Simulation:** It allows controlled study through easier simulation of quantum systems. Quantum simulators operate under quantum mechanics rules, aiding in studying protein folding for diseases like Alzheimer's and developing high-temperature superconductors.
- **Quantum Computation:** Utilizing qubits, it solves problems at unprecedented speeds due to superposition's simultaneous operations. Superposition enables millions of times faster processing than classical computers, revolutionizing problem-solving capabilities.
- **Quantum Sensing and Metrology:** Advanced sensor technology provides precise atomic-level measurements with extensive applications. Quantum sensing finds applications in healthcare, environmental monitoring, navigation, and defense, offering highly accurate data analysis.
- **Quantum Materials:** Used in various industries, including health, energy, and electronics, for creating efficient devices and diagnostic tools. Quantum materials like fluorescent quantum dots enable multicolor bioimaging and specific cellular protein labeling, advancing medical research and diagnostics.

Limitations of Quantum Technology

- **Output Observance:** This means that data corruption may happen if output information is retrieved after a quantum computation process is completed. This is due to the phenomenon of decoherence and the nature of quantum measurement.
- **Decoherence:** During the computation phase of a quantum calculation, the slightest disturbance in a quantum system (for example, photon or wave of EM radiation) causes the quantum computation to collapse, this is known as De-coherence.
- **Security Threat:** An adversary with quantum decryption capabilities can theoretically access encrypted information with ease, putting most current communications infrastructure at risk of exploitation.
- **Error Correction:** It is critical in quantum computing, where even a single error in calculation can cause the validity of the entire computation to collapse.
- **Quantum Gates:** Implementing complex quantum algorithms requires a large number of high-quality quantum gates. Achieving the necessary precision and control over these gates is a major hurdle in developing practical quantum computers.

Quantum Technology in India

- **National Quantum Mission:** Aims to boost scientific and industrial research, build a vibrant ecosystem, and position India as a global leader in Quantum Technologies and Applications.
- **Thematic Hubs (T-Hubs):** To be set up in top academic and national institutes, focusing on Quantum Computing, Communication, Sensing & Metrology, and Materials & Devices.
- **Quantum Research Facility:** The Indian Army has set up a Quantum Lab at the Military College of Telecommunication Engineering, Madhya Pradesh, for research and training.
- **QuEST:** Launched by the Department of Science and Technology to establish research infrastructure for Quantum-Enabled Science and Technology.
- **QSim Toolkit:** An indigenously developed platform for researchers and students to learn quantum coding and simulate real quantum hardware.
- Indian startups such as BosonQ, QRDLab and QpiAI, are also involved in developing quantum-based applications.

Constraints in Indian Quantum Technology:

- **Limited Private Sector Involvement:** India lacks strong private sector participation in quantum technology research, hindering innovation and application development. In 2020-21, the private sector contributed only 36.4% of the national gross expenditure on overall R&D (GERD).
- **Skilled Workforce Shortage:** There's a shortage of skilled professionals in quantum technology research, necessitating focused training programs for talent development. In 2018, India had 253 full-time equivalent (FTE) researchers per million of its population, compared to around 2000 of Italy.
- **Import Dependency:** India relies on imports for critical quantum components, posing challenges for technological independence.
- **Industry-Academia Gap:** Collaboration gaps between industry and academia inhibit research translation into practical applications.
- **Limited International Collaborations:** India's engagement in global collaborations and partnerships in quantum technology remains limited.

To fully harness the potential of quantum technology, India must establish dedicated hubs for application-driven research, promote global collaborations, and invest in post-quantum cryptography for security. Strengthening domestic manufacturing, along with updating military doctrines and ethical standards, will ensure a secure and self-reliant quantum future.

India's Key Achievements in Quantum Key Distribution (QKD)

- **First QKD Demonstration (2021):** ISRO successfully conducted India's first QKD over a 300-meter link.
- **QKD Over 100 km:** IIT Delhi and DRDO achieved QKD between Prayagraj and Vindhyachal.
- **Drone-Based QKD:** Public-private efforts underway to establish secure links between drones and ground stations.
- **Space-Based Quantum Communication:** ISRO is planning satellite-based QKD for long-distance, secure communication.

Biology and BioTech

AMR and India

Context: A study published in the Lancet warns that antimicrobial-resistant pathogens could cause the death of over 39 million people by 2050.

What is Antimicrobial Resistance (AMR)?

- Antimicrobial Resistance (AMR) happens when bacteria, viruses, fungi, and parasites no longer respond to medicines designed to kill them, such as antibiotics, antivirals, antifungals, and antiparasitics.
- This makes common infections harder or even impossible to treat, leading to longer illness, disability, and higher risk of death. AMR mainly results from the misuse or overuse of these medicines.

- According to WHO, AMR is one of the biggest global health and development challenges. In 2019, **bacterial AMR directly caused 1.27 million deaths** and contributed to 4.95 million deaths globally.
- AMR affects not just humans but also animals and plants, impacting food security and agriculture.
- In 2019, **India** recorded approximately **297,000 deaths directly attributable to AMR** and over 1 million deaths associated with AMR.

Key Drivers for Rise of Antimicrobial Resistance (AMR) in India

- | | |
|--|---|
| <ul style="list-style-type: none"> • Overuse of Antibiotics: Easy access without prescriptions leads to misuse. India's antibiotic use in animals is projected to rise by 82% by 2030. • Self-Medication & Incomplete Doses: Many people self-medicate or stop treatment early. WHO reports over 50% of antibiotic prescriptions are inappropriate; two-thirds are used without proper guidance. • Weak Regulation: Poor enforcement in healthcare and livestock sectors allows uncontrolled antibiotic usage. • Poor Infection Control: Inadequate hygiene in hospitals and clinics spreads resistant infections. | <ul style="list-style-type: none"> • Environmental Pollution: Improper disposal of medicines and untreated waste spreads resistant microbes in water and soil. • Low Public Awareness: Only 14.5% of people are aware of AMR risks, leading to careless antibiotic use. • Antibiotics in Livestock: Regular antibiotic use to boost animal growth adds to resistance in the food chain. |
|--|---|

Government Initiatives to Combat AMR in India

- **National Programme on AMR Containment (2012–17):** Focuses on building an AMR surveillance system, promoting rational antibiotic use, improving infection control, and raising awareness in healthcare settings.
- **National Action Plan (NAP) on AMR (2017):** Adopts a One Health approach, involving multiple ministries to address AMR in humans, animals, and the environment.
- **ICMR's AMR Surveillance Network (AMRSN):** Established in 2013, monitors resistance patterns, tracks pathogens like *E. coli*, *Klebsiella pneumoniae*, and *Acinetobacter baumannii*, and promotes AMR-related research.

Key Steps to Address AMR in India

- **Strict Antibiotic Regulation Across Sectors:** Curb overuse in human medicine and especially in animal husbandry—India ranks among the highest in antibiotic usage globally.
- **Improve Hygiene, Sanitation, and Vaccination:** Prevent infections through public awareness, better waste treatment, clean water access, and vaccination to reduce antibiotic dependence.
- **Prioritise Implementation of NAP-AMR:** Allocate adequate resources for nationwide and coordinated execution of the Action Plan.
- **Promote Responsible Antibiotic Use:** Educate doctors and citizens on completing doses, avoiding self-medication, and using antibiotics only when necessary.
- **Strengthen One Health Approach:** Integrate human, animal, and environmental health sectors. Control environmental AMR spread via treated sewage, regulated pharma waste, and agricultural runoff.

Genome India

Context: The Genome India Project has reached a major milestone by making the whole genome sequencing data of 10,000 individuals publicly available.

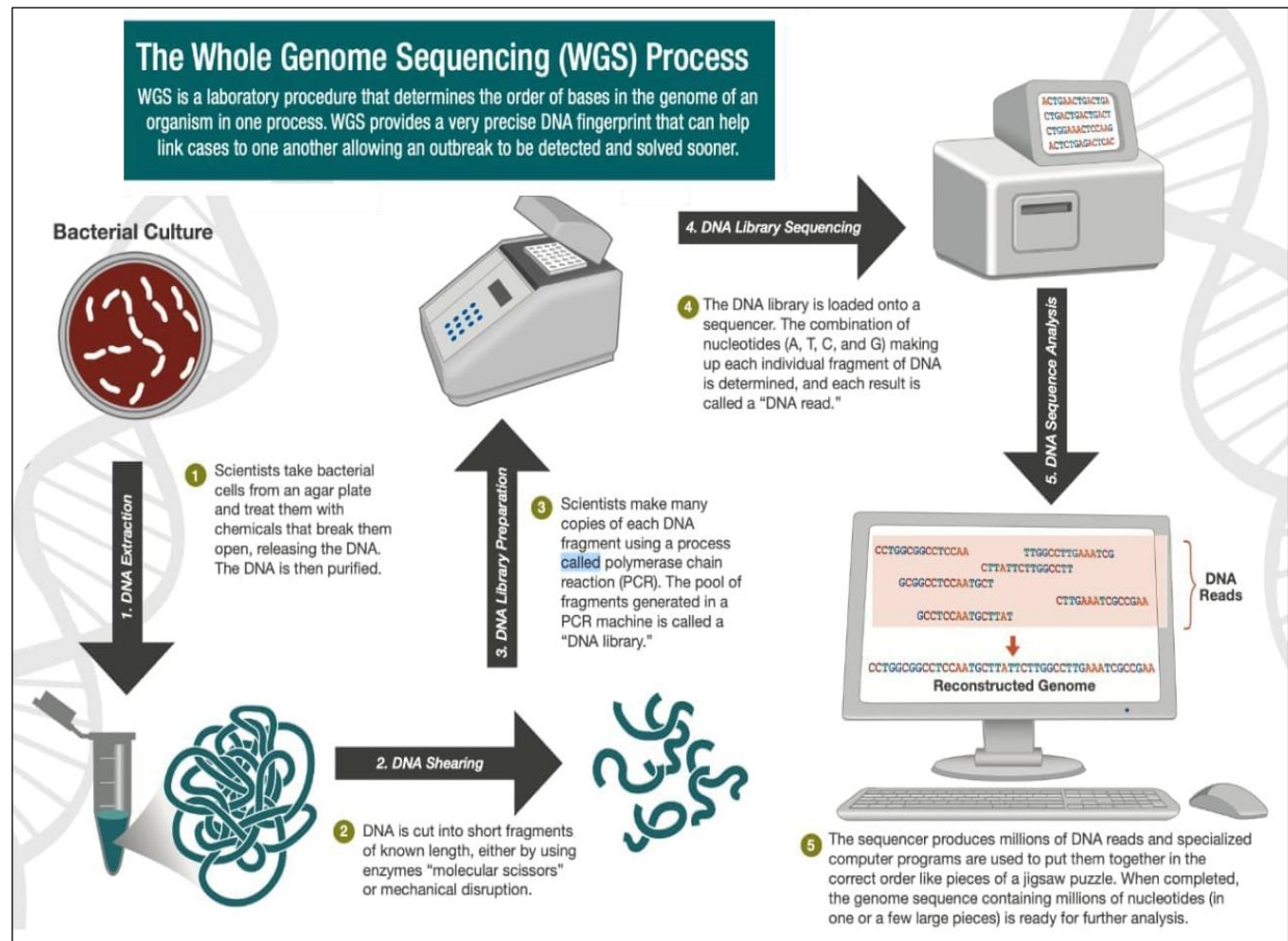
About Genome India Project (GIP)

- **Launched:** In 2020 by the Department of Biotechnology (DBT), Government of India.
- **Collaboration:** Involves 20 academic and research institutions.
- **Goal:** To map India's vast genetic diversity and create a comprehensive catalogue of genetic variations across its population.
- **Key Achievements**

- 20,000 biological samples collected from 83 diverse populations, contributing to the creation of a national bio-bank.
- Whole genome sequencing data for 10,000 individuals have been archived at the Indian Biological Data Centre (IBDC).

What is Genome Sequencing?

- Genome sequencing is a laboratory method used to **determine the entire genetic makeup (the sequence of nucleotide bases: A, T, C, and G) of an organism or cell type.**
- This involves extracting DNA (or RNA), preparing it for sequencing, and then using specialized machines to read the order of nucleotides across the genome.



- The resulting data reveals the unique genetic "**fingerprint**" of the organism, which can be analyzed to identify genetic variations, mutations, and other features.

Applications of Genome Sequencing

- **Biological Research:** Genome sequencing helps scientists understand how genes work, how they are controlled, and how living organisms are related through evolution. Example: Studying the genome of fruit flies to learn about human genes.
- **Medical Diagnostics:** It is used to detect genetic disorders and rare diseases early. It can also reveal a person's risk of developing conditions like Alzheimer's disease or cystic fibrosis.
- **Personalized Medicine:** Treatments and medications can be customized based on a person's unique genetic profile (called pharmacogenomics). Example: Some cancer patients respond better to specific drugs based on their genes.

- **Prenatal Screening:** Helps in identifying possible genetic problems in a fetus before birth. Example: Detecting Down syndrome or spinal muscular atrophy during pregnancy.
- **Cancer Diagnosis and Treatment:** By analyzing the genetic mutations in a tumor, doctors can choose more effective and targeted treatments. Example: Identifying BRCA1/BRCA2 gene mutations in breast cancer patients.
- **Antimicrobial Resistance:** Genome sequencing can identify how and where bacteria develop resistance to antibiotics, helping in better drug development. Example: Tracking resistance genes in *Mycobacterium tuberculosis* or *E. coli*.
- **Infectious Disease Control:** It helps trace the origin, spread, and changes in viruses and bacteria during outbreaks. Example: Monitoring COVID-19 variants or tracking the Ebola virus during an epidemic.
- **Forensics:** DNA sequencing helps identify individuals in criminal investigations or disaster situations. Example: Matching DNA from a crime scene to a suspect.
- **Agriculture:** Genome sequencing supports the breeding of healthier and more resilient crops and animals. Example: Developing drought-resistant rice or high-yielding cattle breeds.
- **Population and Genetic Diversity Studies:** Large-scale genome studies help scientists understand how genes vary across different communities and how this relates to disease patterns.

Challenges Related to Genome Sequencing

- **Data Analysis and Interpretation:** Sequencing generates massive amounts of data that require advanced computational tools and expertise for meaningful interpretation.
- **Detection of Structural Variants:** Current technologies may struggle to accurately identify large-scale changes in DNA, such as duplications, deletions, or inversions.
- **Incomplete Knowledge:** Many genes and genetic variants still have unknown functions or unclear links to disease, limiting the utility of some findings.
- **Ethical and Privacy Concerns:** Handling sensitive genetic data raises issues around privacy, consent, data security, and potential misuse by insurers or employers.
- **Incidental Findings:** Sequencing can uncover unexpected genetic risks unrelated to the original reason for testing, posing dilemmas for patients and clinicians.
- **Psychological Impact:** Learning about genetic predispositions can cause anxiety or distress for individuals and families.
- **Equity and Access:** High costs (more than \$1000) and limited infrastructure can restrict access to genome sequencing, especially in low-resource settings.
- **Technical Limitations:** Sequencing large or highly repetitive genomes remains challenging, and not all regions may be accurately sequenced or assembled.

More Genome Sequencing Initiatives in India

- **IndiGen Programme:** A genome sequencing initiative by CSIR aimed at decoding the genomes of individuals from diverse ethnic groups across India to understand genetic diversity and improve public health strategies.
- **One Day One Genome Initiative:** Launched by the Department of Biotechnology (DBT), this project focuses on sequencing unique bacterial species in India to highlight their role in environmental balance, agriculture, and human health.

To fully realize the potential of genome sequencing, challenges related to data interpretation, ethical concerns, and equitable access must be addressed. With continued investment and collaboration, genome science in India can play a pivotal role in revolutionizing healthcare, strengthening disease prevention, and promoting inclusive scientific innovation for the benefit of all.

Biotechnology in India

Context: The Department of Biotechnology has released the India BioEconomy Report 2024 highlighting that India's bioeconomy crossed \$165 billion, contributing 4.2% of GDP.

What is Biotechnology?

- Biotechnology refers to the use of living organisms or their components to develop useful technologies across various fields.
- Modern biotechnology began with the discovery of DNA's structure and the development of genetic engineering and polymerase chain reaction (PCR).
- It has wide applications in medicine and agriculture, including therapeutics, diagnostics, and genetically modified crops.

Significance of Biotechnology for India

- **Economic Powerhouse:** India's biotech sector could touch USD 150 billion by 2025. Initiatives like BioE3 and BIRAC promote startups and R&D. Firms like Biocon show global competitiveness, creating millions of skilled jobs and boosting GDP.
- **The Pharmacy of the World:** India produces 60% of global vaccines, supplying 40–70% of WHO's DPT demand. The Serum Institute became the world's largest vaccine maker during COVID-19, strengthening India's health security, global influence, and vaccine diplomacy.
- **Agricultural Revolution 2.0:** Biotech enhances agriculture with climate-resilient and nutritious crops. Bt cotton covers 95% of India's cotton area, boosting yields and income. Research into drought-resistant rice and golden rice promises improved food security.
- **Environmental Safeguard:** Biotech helps tackle pollution and waste. Bioremediation cleaned Mumbai's Versova Beach. Biodegradable plastics and carbon capture (via BioE3) support India's Paris Agreement goals. Climate-resilient agriculture adds long-term environmental benefits.
- **Innovation Ecosystem:** India hosts over 5,000 biotech startups, with hubs like Genome Valley and Bangalore Bioinnovation Centre. Government programs like the Atal Innovation Mission and bio-foundries under BioE3 are building a thriving R&D ecosystem.
- **Self-Reliance in Critical Sectors:** Biotech reduces import dependency in energy, plastics, waste, and pharmaceuticals. Domestic production of APIs, biofuels, and industrial enzymes enhances India's health security and supports Make in India goals.
- **Futuristic Frontiers - Marine and Space:** Marine biotech explores biofuels, materials, and coral conservation. Space biotech works on extremophiles and closed-loop systems, aiding ISRO missions and offering Earth-based solutions in waste recycling and resource efficiency.
- **Biotech for Sustainable Development Goals:** Biotech supports SDGs like Zero Hunger (SDG 2), Good Health (SDG 3), Clean Water (SDG 6), and Climate Action (SDG 13) through biofortified crops, affordable drugs, biofuels, and carbon capture, driving sustainable progress.

Current Status of India's Biotechnology

- **Global Position:** India ranks among the top 12 global biotech destinations and is 3rd in the Asia-Pacific region.
- **Bioeconomy Value:** The Indian bioeconomy grew from \$35.5 billion (2014) to \$137 billion (2022) and crossed \$165 billion, contributing 4.2% of GDP in 2024.
- **Economic Role:** It is a sunrise sector supporting India's vision of a \$5 trillion economy, contributing around 3% to the global biotech market.
- **Healthcare Innovation:** India is emerging as a global hub for affordable and innovative healthcare solutions.

India's BioEconomy			
Subsector	Share	Market Size	Key Highlights
Bio- Industrial	47.2%	\$78.2 Billion	Largest segment; includes biofuels, bioplastics, enzymes. Driven by green tech adoption.
BioPharma	35.2%	\$58.4 Billion	Covers drugs, diagnostics, medical devices. Key to India's leadership in affordable healthcare.
BioIT/ Research Services	9.4%	\$15.6 Billion	Includes clinical trials, bioinformatics, biotech software. A global hub for R&D outsourcing.
Bio- Agriculture	8.1%	\$13.5 Billion	Focuses on GM crops, Bt cotton, and precision farming. Boosts farm output and resilience.

Key Challenges faced by Biotechnology Sector in India

- **Regulatory Hurdles:** Complex, overlapping regulations from bodies like Genetic Engineering Appraisal Committee (GEAC) and the Review Committee on Genetic Manipulation (RCGM) cause delays. Lengthy approval processes, especially for GMOs (e.g., Bt brinjal moratorium which started in 2010).
- **Limited Funding:** Biotech research involves high risk and long gestation periods, deterring investors. Government funding is low with only 0.05% of GDP allocated to the Ministry of Science and Technology.
- **Infrastructure Deficiencies:** Lack of advanced labs, biocontainment facilities (only one BSL-4 Lab), and cold-chain systems. Research equipment is often outdated or concentrated in a few urban areas.
- **Weak Intellectual Property (IP) Protection:** Although patent filings are rising, enforcement and IP protection remain weak. India ranked at 43 out of the 55 countries in the 2025 International IP Index.
- **Global Competition:** Indian firms face strong competition from established global players. Entry into international markets requires huge investments in trials, regulations, and branding.
- **Talent Shortage and Brain Drain:** Despite producing biotech graduates, there's a skills mismatch in high-tech areas like bioinformatics. Many skilled professionals leave India for better opportunities abroad.
- **Ethical and Social Challenges:** Public resistance to GMOs and genetic editing (e.g., CRISPR) stalls progress. Absence of clear ethical guidelines and public awareness mechanisms.
- **Ownership and Access Inequities:** Patents may restrict equitable access, especially in developing countries. Ownership of biomaterials raises ethical and economic concerns.
- **Environmental Concerns:** Agricultural biotechnology may affect non-target species, ecosystems, and biodiversity. Risk of pesticide resistance and impact on pollinators.
- **Security Risks:** Synthetic biology raises concerns about potential misuse for biological weapons.
- **Uncertainty in Emerging Technologies:** New genomic techniques carry unpredictable risks and limited understanding. Potential for misuse of increased biological knowledge for harmful purposes.

Key Government Initiatives in India's Biotechnology Sector

- **BioE3 (Biotechnology for Economy, Environment, Employment):** A Cabinet-approved initiative focused on six verticals: Bio-based chemicals, Functional foods, Precision biotherapeutics, Climate-resilient agriculture, Carbon capture, Marine and space biotechnology. Its success hinges on sustained funding and infrastructure development at both central and state levels.
- **National Biotechnology Development Strategy (2021–25):** Aims to position India as a global biotech leader and grow the bioeconomy to USD 150 billion by 2025 through innovation, R&D, and entrepreneurship.
- **FDI Policy:** 100% FDI is permitted via the automatic route for greenfield pharma and medical devices; brownfield pharma has structured FDI routes to encourage investment.
- **Biotech-KISAN Hubs:** 51 hubs funded by the Department of Biotechnology to link farmers with scientists for promoting sustainable agriculture, soil health, and modern agri-technologies.
- **GOBARdhan Scheme:** Union Budget 2023–24 announced 500 new 'waste to wealth' plants with an investment of INR 10,000 crore, promoting circular bioeconomy and rural employment.
- **GenomeIndia Project:** A national mission to map the genetic diversity of India's population to advance personalized medicine and public health strategies.

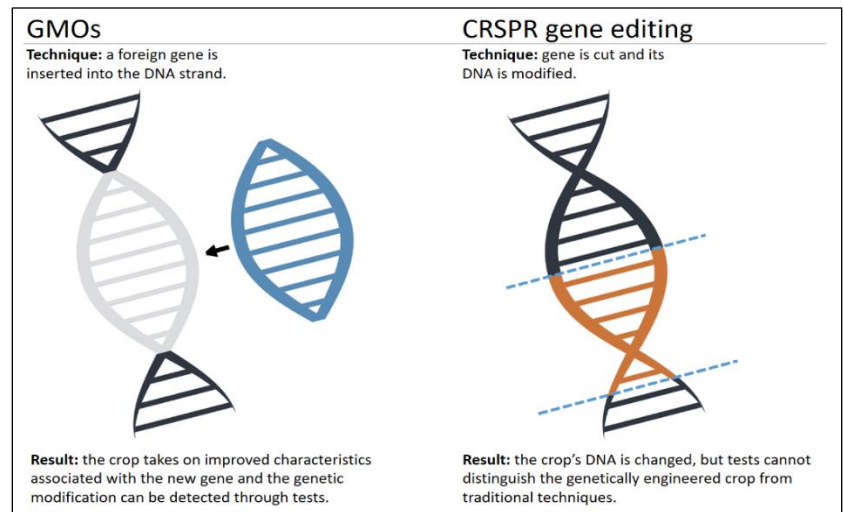
India must streamline regulations via a unified Biotechnology Authority, boost funding through PPP-based biotech investment funds, and bridge academia-industry skill gaps. Establishing biotech zones, shared R&D facilities, and stronger IP frameworks will drive innovation. Expanding PLI for biotech products under Make in India and state-center collaboration is vital for BioE3's success.

India's First-Ever Gene-Edited (GE) Rice Varieties

Context: The Indian Council of Agricultural Research (ICAR) has developed the world's first climate-smart gene-edited (GE) rice varieties using the CRISPR-Cas9 gene editing technique, specifically SDN1 and SDN2 methods.

Genome Editing (GE) in Plants and GM Crops

- Genome editing in plants refers to making precise, targeted changes to a plant's DNA without introducing foreign genetic material.
- It uses advanced technologies like CRISPR-Cas9 to edit specific DNA sequences within the plant's own genome.
- This can involve deleting, inserting, or modifying DNA at exact locations.
- India has exempted certain GE crops (developed through SDN-1 and SDN-2 techniques) from biosafety regulations under the Environment (Protection) Act, 1986.
- However, these regulations still apply to GM crops, covering both field trials and commercial cultivation.



Comparison of Gene-Edited (GE) vs Genetically Modified (GM) Crops

Feature	Genetically Modified (GM) Crops	Gene-Edited (GE) Crops
Definition	Crops altered by inserting foreign genes from unrelated species	Crops altered by editing their own genes without adding foreign DNA
Technique Used	Recombinant DNA (rDNA) technology	CRISPR-Cas9 or other precise gene-editing tools
Foreign Gene Insertion	Yes, includes DNA from different organisms (transgenic)	No (in SDN1 and SDN2) – only edits native genes (non-transgenic)
Precision	Less precise, can cause unintended changes	Highly precise, targets specific parts of the genome
Speed of Development	Longer due to strict regulations and testing	Faster due to simpler editing and lighter regulations (for SDN1/2)
Regulatory Status in India	Strictly regulated under EPA, 1986; requires GEAC approval	Regulation relaxed for SDN1/SDN2 methods (non-transgenic only)
Examples in India	Bt Cotton (only GM crop approved for commercial use)	DRR Dhan 100 & Pusa DST Rice 1 (first GE crops approved for cultivation)

Significance of Genome Editing Technique in Agriculture

- **Precision and Speed:** Unlike traditional breeding, genome editing modifies only specific genes, making the process faster and more accurate. New crop varieties can be developed in 2–3 years, compared to 8–10 years via conventional methods.
- **Climate Resilience:** Genome editing enables development of crops that can tolerate drought, salinity, and heat stress. This is necessary for ensuring food security in the face of climate change.
- **Pest and Disease Resistance:** Crops can be edited to resist harmful insects and plant diseases, reducing the need for chemical pesticides and increasing yield sustainably.
- **Nutritional Enhancement:** Gene editing allows for improved nutritional quality by enhancing vitamins or removing allergens. This supports public health and addresses hidden hunger.
- **Reduced Input Costs:** By improving stress resistance and reducing the need for pesticides or fertilizers, genome-edited crops lower input costs and improve farmers' income.
- **Non-Transgenic Nature:** Unlike GM crops, many gene-edited varieties do not contain foreign DNA, making them more acceptable to regulators and consumers in countries like India and the U.S.
- **Supports Food Security:** With limited arable land and a growing population, genome editing helps increase productivity, reduce crop loss, and ensure reliable food supply.

Challenges and Concerns with Genome Editing in Agriculture

- **Regulatory Uncertainty:** Some countries, like those in the European Union, treat genome-edited crops the same as genetically modified (GM) crops, subjecting them to strict regulations. This slows innovation and market access.
- **Lack of Public Awareness:** Many people confuse genome editing with GM crops. Since genome editing doesn't always involve foreign genes, it's often safer, but public mistrust due to lack of awareness remains a barrier.
- **Ethical and Biosafety Concerns:** There are concerns that editing genes can cause unintended changes, possibly affecting plant safety, nutrition, or causing allergic reactions. Long-term effects are still being studied.
- **Environmental Risks:** Overuse or misuse of genome editing could harm biodiversity. For example, developing uniform crop varieties may reduce genetic diversity, making them more vulnerable to new pests or diseases.
- **Limited Access for Small Farmers:** High costs of research and the technology may limit access to large companies, excluding small farmers from its benefits unless supported by public institutions.

Going forward, effective communication, farmer education, and inclusive access will be key to ensuring that genome editing fulfills its promise of improving food security, boosting farm incomes, and supporting India's agricultural growth in a changing climate.

CRISPR

Context: Tata Memorial Hospital developed RAPID-CRISPR, a low-cost, non-invasive genetic test for detecting Acute Promyelocytic Leukemia (APL) using CRISPR.

About CRISPR/Cas9

- CRISPR, short for Clustered Regularly Interspaced Short Palindromic Repeats, is a gene-editing technology that allows scientists to precisely alter the genetic sequence of a gene by removing, adding, or modifying specific sections of DNA.
- It enables researchers to correct genetic errors and switch genes on or off in cells and organisms quickly, accurately, and cost-effectively.

How Was It Developed?

- Some bacteria naturally possess a CRISPR-like immune system that helps them defend against viruses. When attacked by a virus, these bacteria cut out fragments of the viral DNA and store them. This stored genetic memory allows the bacteria to recognize and combat the virus during future attacks.
- Scientists adapted this natural bacterial defense mechanism to develop a powerful tool for editing DNA in living organisms.

How CRISPR-Cas9 Works

- The CRISPR-Cas9 system uses two key components to introduce changes (mutations) in DNA:
 - **Cas9 Enzyme:** Known as a pair of "molecular scissors", Cas9 cuts both strands of DNA at a specific location in the genome. This cut allows scientists to either remove, add, or replace DNA segments.
 - **Guide RNA (gRNA):** This is a short, pre-designed RNA sequence (about 20 bases long) embedded within a longer RNA scaffold. The scaffold helps the gRNA bind to DNA. The target sequence within the gRNA guides Cas9 to the exact spot in the genome where the cut is needed.
- Once the gRNA binds to the correct DNA sequence, Cas9 follows and makes a precise cut.
- After this, the cell's own DNA repair mechanisms can be used to: **Delete** or insert genetic material, or **Replace** the cut segment with a customized DNA sequence.

Major Applications of CRISPR

1. Medicine and Therapeutics

- **Gene Therapy:** Used to correct genetic mutations in diseases like sickle cell anemia, hemophilia, and muscular dystrophy.
- **Cancer Treatment:** Alters genes linked to tumor growth and resistance; tested in trials for leukemia, lung, and prostate cancers.

- **Antiviral Therapies:** Targets viral genomes to treat infections such as HIV, hepatitis B, and HPV-related cancers.
- **Clinical Trials:** Undergoing trials for treating genetic, infectious, and cancerous diseases, showing promising early results.
- **Diagnostics:** Detects mutations, infections, or biomarkers quickly for use in healthcare and public surveillance.
- **Ecological and Environmental Applications:** Used to control pests and disease vectors like malaria mosquitoes, raising ecological and ethical questions.

2. Agriculture and Crop Improvement

- **Enhanced Traits:** Develops high-yield, stress-tolerant, and disease-resistant crops with better nutritional profiles.
- **Precision Breeding:** Enables targeted gene edits, like boosting proline in rice for heat and drought tolerance.

3. Biotechnology and Synthetic Biology

- **Metabolic Engineering:** Designs microbes to produce biofuels, drugs, and industrial chemicals more efficiently.
- **Biosensors:** Creates sensitive tools to detect pathogens, toxins, and environmental changes.

4. Basic Research

- **Functional Genomics:** Helps identify and study gene functions by knocking out or altering specific genes.
- **Animal Models:** Generates disease-specific animal models to accelerate biomedical and drug research.

Concerns related to CRISPR

- **Ecological Dis-equilibrium:** Gene drives may spread traits unintentionally, **reduce biodiversity**, and overlook long-standing GMO concerns.
- **Threats to Species:** Eradicating disease vectors using CRISPR may unintentionally wipe out entire species, causing unpredictable ecological consequences.
- **Germline Editing Concerns:** Editing embryos or reproductive cells affects future generations, raising serious ethical concerns about irreversible heritable genetic changes.
- **Biosafety Concerns:** CRISPR could be misused to create potent pathogens or genetically altered organisms, posing accidental or intentional environmental risks.
- **Regulatory Bypass:** CRISPR avoids traditional GMO classification, possibly bypassing regulatory scrutiny despite altering plant genomes significantly without inserting foreign DNA.
- **Safety:** Off-target edits and mosaicism make CRISPR potentially unsafe, as unintended genetic changes can have harmful, unpredictable effects.
- **Informed Consent:** Germline edits affect unborn generations, making genuine informed consent ethically complex and practically impossible for those impacted.
- **Justice and Equity:** CRISPR may widen health inequalities, limiting access to the wealthy and possibly creating genetic 'classes' in society.

While harnessing CRISPR's vast potential, it is important to adopt strong regulatory safeguards, promote ethical oversight, and ensure equitable access, so that its benefits serve all sections of society responsibly.

Space Technology

Privatisation of Indian Space

Context: The Union Cabinet approved a ₹1,000-crore VC fund to support 40 space start-ups over five years under IN-SPACe, aiming to boost private investment and innovation in the space sector.

Private Companies in Indian Space Sector

- Traditionally, Indian private companies played a supporting role, mostly as vendors or component suppliers to ISRO. They had limited exposure to high-end activities like satellite development or launching missions.

- In 2020, the Government of India announced major reforms to allow private participation across the space value chain (satellite making, space services and launching rockets.)
- **Institutional Mechanisms Introduced:**
 - **IN-SPACe (Indian National Space Promotion and Authorization Center) (2020):** Acts as a single-window agency to regulate and promote private companies in space activities.
 - **NSIL (NewSpace India Ltd.) (2019):** A commercial arm of ISRO to transfer technologies and handle satellite launches and services with private sector involvement.
- More than 300 Indian entities have filed over applications with IN-SPACe for authorizations, technology transfer, and facility usage as of January 2024.
- By 2024, the number of space startups in India rose from just one in 2022 to nearly 200, Skyroot Aerospace (first private Indian rocket, Vikram-S), and Agnikul Cosmos (first 3D-printed engine rocket).

Why is the Government Opening Up the Space Sector?

- **Reducing Import Dependency:** India's space technology imports (₹2114 crores, FY 2021-22) are significantly higher than its exports (₹174 crores).
- **Freeing ISRO for Core Missions:** Encouraging private players allows ISRO to focus on advanced research like interplanetary missions, while private players take over routine services and manufacturing.
- **Human Capital Development:** The rise of private space startups is significantly contributing to employment in the space sector. Between 2014 and 2024, the number of Indian space startups has grown from 1 to over 229, collectively employing around 2,500 professionals.
- **Moving to Demand-Driven Growth:** Traditionally, the Indian space programme has been supply-driven. However, there is now widespread demand across sectors like urban development, agriculture, defence, and disaster management for space-based solutions.
- **Enhancing Global Competitiveness:** Empowering Indian firms to handle end-to-end space operations can help them compete globally, like SpaceX and Blue Origin, who have revolutionised the global space economy with reduced costs and faster delivery cycles.
- **Unlocking Socio-Economic Benefits:** Space-based services can address urgent challenges in agriculture, communication, healthcare, especially in remote areas. The use of satellite and digital infrastructure supports programmes like Digital India and Smart Cities.
- **Economic Potential:** India's share in the global space economy was just 2% in 2021. With new reforms and private participation, this is expected to grow to 8% by 2030, and to 15% by 2047.

Challenges in Promoting Private Sector in the Space Sector

- **Legal Uncertainty:** Although reforms have been introduced, India still lacks a comprehensive space law to govern commercial activities, dispute resolution, liability in case of accidents, and intellectual property rights.
- **Regulation Issues:** The regulatory landscape is fragmented, requiring approvals from multiple bodies such as the Department of Space, ISRO, and InSPace. Moreover, ISRO functions both as an operator and regulator, creating a potential conflict of interest.
- **Risky Nature of the Industry:** The absence of an assured market for private players discourages venture capital and limits entrepreneurial confidence. Space-tech startups require long-term funding with high risk, and often struggle to secure sufficient capital.
- **Dependence on Imports and Supply Chain Issues:** India imports around 85% of its semiconductors and lacks local production of critical components like space electronics and radiation-hardened chips, creating supply chain risks.
- **Security and Strategic Concerns:** Increased private sector involvement raises concerns about data privacy, dual-use technologies, and potential foreign influence.
- **Space Debris and Environmental Impact:** As the number of private launches and satellites increases, space debris management becomes critical. India currently lacks a robust framework for space traffic management and debris mitigation.

India's Initiatives to Promote Space-Tech

- **Indian Space Policy 2023:** Allows end-to-end participation of Non-Government Entities (NGEs) across all space activities, laying the foundation for a private-led space ecosystem.
- **Liberalised FDI Norms:** Recent amendments permit 74% FDI in satellite manufacturing and operations and up to 49% in launch vehicles, spaceports, and related systems.
- **SpaceTech Innovation Network (SpIN):** A public-private collaboration to support startups and MSMEs.
- **ATL Space Challenge:** Launched by AIM, ISRO, and CBSE to encourage students to find innovative space-tech solutions.
- **Atal Incubation Centres (AICs):** Support over 15 startups in areas like drones, space debris tracking, and aero tech.
- **Pre-Incubation Support:** The PIE Development Program by IN-SPACe guides startups from idea generation to prototype development.
- **Infrastructure Development:** GIFT City in Gujarat is being developed as a global hub for space-tech, offering regulatory benefits and advanced infrastructure.

India must enact the **Space Activities Act** to provide legal clarity and boost private sector confidence. Mapping the **space value chain** and addressing key challenges through global benchmarking will aid market development. **Strengthening partnerships between ISRO, startups, and global firms** can enhance innovation and market access.

Analog Space Mission

Context: ISRO Launches India's First Analog Space Mission in Leh, Ladakh

About Analog Space Missions

- Analog space missions are simulated missions conducted on Earth in environments that closely resemble extraterrestrial conditions.
- These missions aim to prepare astronauts for the challenges of space exploration and to test technologies and equipment in realistic scenarios.
- NASA's Artemis program, which aims to return humans to the Moon, uses analog missions to test equipment and train astronauts for lunar conditions.
- India's analog mission is a collaborative effort involving ISRO's Human Spaceflight Centre, AAKA Space Studio, the University of Ladakh, IIT Bombay, and is supported by the Ladakh Autonomous Hill Development Council.
- Ladakh's isolation, dry climate, high-altitude and barren terrain provide Mars- and Moon-like conditions, making it ideal for analog space simulations.

Key Objectives of Analog Space Missions

- To simulate extraterrestrial conditions on Mars and the Moon enabling India to enhance its human spaceflight capabilities.
- To support both physical needs and psychological well-being.

Popular Analog Mission Sites Worldwide

- **NASA's NEEMO (Extreme Environment Mission Operations):** Conducted underwater to simulate microgravity.
- **SIRIUS Program (Russia-UAE):** Involves long-duration isolation experiments in simulated habitats.
- **AMASE (Arctic Mars Analogue Svalbard Expedition):** Conducted in the Arctic to study Martian-like geology.
- **NASA's HERA (Human Exploration Research Analog):** In Texas, simulates isolation and confinement.
- **Mars Desert Research Station (MDRS):** In Utah, replicates Mars-like living conditions.
- **ESA's Pangaea-X:** conducted in volcanic areas to train astronauts in geological analysis.
- **LaMAH (Lunar and Mars Analog Habitat):** NASA's lab-based simulation of extraterrestrial missions.

As space exploration becomes increasingly global, India's investment in analog missions strengthens its position in international collaborations and deep space research.

Environmental Causes of Space Activities

Context: As global dependence on space technologies grows the environmental impacts of space activities are becoming a pressing concern.

Environmental Consequences of Space Activities

1. Rocket Launch Emissions

- Rocket launches emit significant amounts of carbon dioxide (CO₂), black carbon (soot), water vapor, and reactive gases into the atmosphere.
- Black carbon is particularly harmful because it absorbs sunlight 500 times more efficiently than CO₂, amplifying global warming and climate change.
- Chlorine-based rocket propellants contribute to ozone layer depletion, increasing ultraviolet (UV) radiation at the Earth's surface and disrupting atmospheric circulation.
- Rockets like the SpaceX Falcon 9 emit approximately 425 tonnes of CO₂ per flight.

**100 to 300
tonnes of CO₂**

- Emitted during a single large rocket launch

11,500 Tonnes

- Space debris currently orbit Earth

**36,500+
pieces**

- Orbital debris larger than 10 cm are being tracked as of early 2025.

**Less than
50%**

- Spacecraft operators comply with international post-mission disposal guidelines, such as de-orbiting within 25 years.

2. Space Debris (Space Junk)

- The rapid increase in satellite launches has led to overcrowding in low Earth orbit (LEO), with over 13,230 satellites currently in orbit and more than 36,860 trackable debris objects.
- Space debris includes non-functional satellites, spent rocket stages, and fragments from collisions or explosions, raising collision risks and making some orbits increasingly inaccessible.
- Debris can disrupt radio communications, climate monitoring, and disaster tracking systems, threatening critical infrastructure on Earth.

3. Satellite Manufacturing and Re-entry

- Manufacturing satellites is energy-intensive, requiring large amounts of metals and composites, resulting in a substantial carbon footprint.
- When satellites re-enter the atmosphere and burn up, they release **metallic "satellite ash"** that can alter atmospheric chemistry and potentially harm the climate.

4. Emerging Threats

- The prospect of **space mining** introduces new risks, including the potential for pollution both in space and on Earth, though this activity is not yet fully operational.
- **Space tourism**, if it expands, could become even more environmentally damaging than traditional aviation due to the high emissions of black carbon directly into the stratosphere.
- Each rocket launch emits approximately 50–75 tonnes of CO₂ per passenger, which is much higher than the 1–3 tonnes of CO₂ emitted per passenger on a commercial airline flight.

5. Resource Usage and Launch Site Impact

- Space activities consume valuable resources such as water, energy, and raw materials, both for launches and ongoing operations.
- Launch sites themselves can cause local environmental degradation, including habitat disruption and pollution.

6. Ethical and Sustainability Considerations

- The environmental impact of space activities raises ethical issues regarding the fair use of space resources and the prevention of conflict in space.

Global Initiatives

- **UN Guidelines for Long-Term Sustainability of Outer Space Activities:** A set of non-binding recommendations to guide responsible behaviour in space.
- **Active Debris Removal (ADR):** Technologies like nets, lasers, and robotic arms are being developed by agencies like ESA (Europe) and JAXA (Japan).
- **NASA's Debris Mitigation Programs:** Focused on limiting debris generation and studying long-term impacts of congestion.
- **ESA's ClearSpace-1 (2025):** First mission to physically remove a large item of space debris using a robotic arm.

A **legally binding global treaty** is needed to regulate emissions and manage space debris. **Promoting green rocket fuels, enforcing debris disposal rules, and investing in urban mining** of rare metals can reduce environmental impact. **International cooperation and public-private partnerships** will be key to advancing sustainable and responsible space activities.

SpaDeX

Context: The Indian Space Research Organisation (ISRO) recently launched the SpaDeX mission

SpaDeX Mission	
Launch Site	Satish Dhawan Space Centre, Sriharikota
Launch Vehicle	PSLV-C60 (Polar Satellite Launch Vehicle)
Mission Name	SpaDeX (Space Docking Experiment)
Orbit	470 km circular orbit with 55° inclination
Mission Duration	Two years
Spacecraft Involved	SDX01 (Chaser) and SDX02 (Target)
Primary Objective	Develop and demonstrate the technology needed for rendezvous, docking, and undocking of two small spacecrafts in a low-Earth circular orbit
Secondary Objectives	• Enable electric power transfer between docked modules • Test onboard spacecraft control systems during docking • Payload operations after undocking.
Technical Challenge	Reduce relative speed from 28,800 km/h to 0.036 km/h for a safe and precise docking

Significance of SpaDeX

- **Future Space Station Assembly:** India plans to build the Bharatiya Antariksh Station (BAS). Docking multiple space modules in orbit will be essential for assembly and resupply.
- **Lunar and Deep-Space Missions:** Missions like Chandrayaan-4 or a crewed Gaganyaan flight may involve launching different segments separately and then docking them in orbit before heading to the Moon or beyond.
- **Satellite Servicing and Life Extension:** SpaDeX demonstrated the potential for extending the operational life of satellites through in-orbit servicing, refueling, and repairs, which can reduce costs and enhance the sustainability of satellite constellations.
- **Sample-Return Missions:** To bring back lunar or Martian samples, a lander could rendezvous with an orbiter and dock before returning to Earth. SpaDeX's success lays the groundwork for those complex operations.
- **Strategic Autonomy:** Developing indigenous docking capability reduces reliance on foreign partners for critical mission phases.

With this, India has joined the United States, Russia, and China as nations capable of autonomous spacecraft docking.

Aditya L1

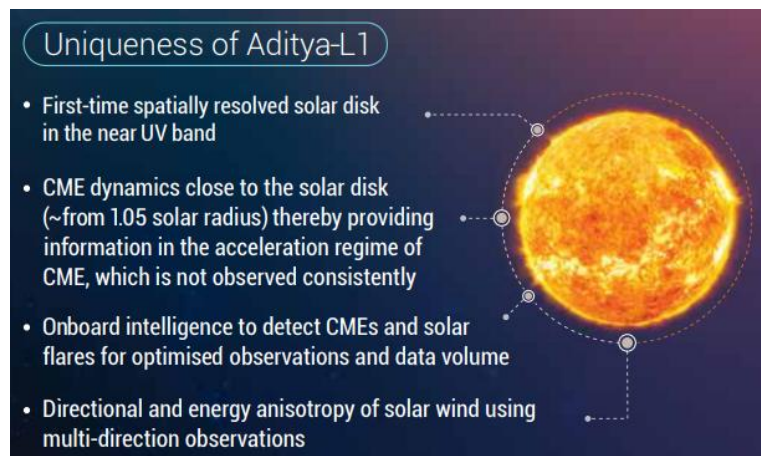
Context: The SUT telescope on Aditya-L1 captured the first-ever image of a solar flare 'kernel'. It was developed by IUCAA, Pune.

About Aditya-L1

- Aditya-L1, launched by ISRO on September 2, 2023, is **India's first space-based mission to study the Sun**.
- Positioned in a halo orbit around Lagrange Point 1 (L1), it ensures a continuous, unobstructed view of the Sun, unlike satellites in Low Earth Orbit (LEO) which experience periodic eclipses and limited viewing windows.

Significance of Aditya-L1 Mission

- **India's First Solar Mission:** Aditya-L1 marks India's maiden effort to study the Sun, reflecting ISRO's growing focus on space science and solar physics.
- **Space Weather Insights:** The mission will help understand solar flares, coronal mass ejections (CMEs), and their impact on Earth's satellites, communications, and power systems.
- **Strategic Orbit:** Positioned at Lagrange Point 1 (L1), about 1.5 million km from Earth, it enables continuous, unobstructed observation of solar activities.
- **Global Contribution:** Aditya-L1's data will aid global research in solar physics and space weather forecasting, fostering international scientific collaboration.
- **Technological Leap:** The mission showcases India's advancement in space-based observation and strengthens its capability in complex, deep-space missions.
- **Lays Foundation for Future Solar Missions:** Paves the way for Aditya-L2 and Aditya-L3, which will study the solar poles and the Sun's far side, enhancing global understanding of solar dynamics.
- **Toward a Global Solar Research Hub:** Reinforces India's ambition to emerge as a leader in solar system science, opening avenues for global collaboration in solar and space weather studies.



Key Global Solar Missions		Objectives
ASO-S (Advanced Space-based Solar Observatory)	China (2022)	Also called Kuafu-1 , it studies solar flares, CMEs, and magnetic fields to understand solar-terrestrial interactions.
Solar Orbiter	ESA & NASA (2020)	Observes the Sun's poles and heliosphere. Provides high-resolution images and studies the solar magnetic field and solar cycle.
Parker Solar Probe	NASA (2018)	Closest mission to the Sun; studies solar wind, corona, and high-energy particles. Aims to solve the mystery of the Sun's superheated outer atmosphere.
IRIS (Interface Region Imaging Spectrograph)	NASA (2013)	Observes the interface region between Sun's surface and corona to understand solar atmosphere heating.
Solar Dynamics Observatory (SDO)	NASA (2010)	Constantly monitors solar activity and space weather in high-definition. Helps understand solar magnetic fields and sunspots.
Hinode	JAXA with NASA & ESA (2006)	Focuses on magnetic fields, solar flares, and sunspot formation. Helps understand energy transport from the solar surface to the corona.
STEREO (Solar Terrestrial Relations Observatory)	NASA (2006)	Twin spacecraft giving 3D views of the Sun; tracks CMEs and solar wind across the solar system.
SOHO (Solar and Heliospheric Observatory)	ESA & NASA (1995)	Studies solar wind, corona, and interior structure of the Sun; offers real-time space weather monitoring.

Ulysses	ESA & NASA (1990–2009)	Explored the Sun’s poles and solar wind outside the ecliptic plane—first to do so.
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Aditya-L1 marks India’s entry into solar exploration but has observational limits. Future missions should target L5 for better CME tracking and space weather prediction. Exploring the Sun’s poles and studying solar radiation polarisation at multiple wavelengths will deepen understanding of solar dynamics and enhance global solar research capabilities.

Chandrayaan 5

Context: ISRO Chairperson announced government approval for the Chandrayaan-5 mission.

Chandrayaan-5 (LUPEX Mission): India-Japan Lunar Collaboration

- Chandrayaan-5, also called LUPEX (Lunar Polar Exploration), is a joint mission between ISRO and JAXA, planned for launch in 2027–28.
- The mission will be launched by JAXA using its H3-24L launch vehicle. It will carry an ISRO-developed lunar lander, which in turn will deploy a Japan-made lunar rover built by Mitsubishi Heavy Industries (MHI).
- **Mission Roles:** ISRO will build the lander, while JAXA will develop the rover.
- **International Collaboration:** The mission will carry 7 scientific instruments, including a mass spectrometer from ESA and neutron spectrometers from NASA.

Mission Objectives:

- Explore and map the presence of water in the lunar south polar region.
- Drill into the lunar regolith to assess water content, composition, and usability.
- Conduct in-situ analysis using advanced spectrometers and sensors.
- The mission aims to last 100 days, extendable up to one year, and may attempt to explore the Moon’s far side.

Chandrayaan Missions

Chandrayaan-1 (2008)

- India’s first lunar mission and first deep space mission, launched on October 22, 2008 by ISRO.
- The orbiter carried 11 scientific instruments from India and international partners (NASA, ESA, etc.) to study the Moon’s chemical, mineralogical, and topographical features.
- A key achievement was the discovery of water molecules on the Moon, a major scientific breakthrough.
- Deployed a Moon Impact Probe (MIP) that deliberately crashed onto the lunar surface, analyzing the resulting debris for scientific study.
- Mission ended in August 2009 after losing communication, but it met its main objectives and kickstarted India’s planetary science program.

Chandrayaan-2 (2019)

- Launched on July 22, 2019, Chandrayaan-2 included an orbiter, lander (Vikram), and rover (Pragyan).
- Aimed to explore the Moon’s south polar region, map its topography, study surface mineralogy, and search for water ice.
- The **orbiter continues to function and send data**, but the **lander crashed during its descent, and the rover was lost**.
- The orbiter carries advanced instruments and is expected to operate for seven years, enhancing knowledge of the Moon’s exosphere, surface, and sub-surface.
- The mission demonstrated significant technological advances for ISRO and inspired future lunar exploration.

Chandrayaan-3 (2023)

- Focused on achieving a successful **soft landing on the Moon’s south pole** and deploying a rover for surface exploration.
- The **lander (Vikram) and rover (Pragyan) successfully landed** and conducted in-situ experiments, making **India the first country to land near the lunar south pole**.

- The rover analyzed lunar soil and rocks, studying their chemical composition and mineralogy, and sent back data and images.
- Chandrayaan-3 demonstrated ISRO's improved landing technology and mission reliability, building on lessons from Chandrayaan-2.

Chandrayaan-4 (Upcoming)

- Will mark a major leap by attempting India's first lunar sample return mission.
- The mission will demonstrate advanced technologies like surface sampling, drilling, sample storage, and docking/undocking in lunar orbit.
- Involves two launch vehicles and five modules, with complex maneuvers including docking in Earth orbit and lunar orbit.
- The descender will collect lunar samples; the ascender will return to dock with the return module, which will then bring samples back to Earth.
- Chandrayaan-4 is a precursor to future crewed lunar missions and India's ambitions for a space station by 2040.
- It will provide India's first direct lunar samples for laboratory analysis, joining the exclusive group of nations (US, Russia, China) that have achieved this feat.

Significance of the Chandrayaan Missions for India

- **Scientific Breakthroughs and Global Contributions:** Chandrayaan-1 confirmed water on the Moon, revolutionizing lunar science. All missions generated valuable data on mineralogy and surface composition, aiding global research on lunar evolution and habitability.
- **Technological Advancement and Innovation:** India mastered deep-space technologies like soft-landing, rover deployment, and communication. Chandrayaan-3's success at the lunar south pole marked a global first and solidified India's place among top spacefaring nations.
- **Strategic and Geopolitical Impact:** Chandrayaan missions enhance India's global standing in space exploration. They offer strategic advantages in lunar resource mapping and position India as a key player in future space economies.
- **Inspiration and National Pride:** The missions sparked scientific curiosity, especially among youth, and boosted public interest in STEM. Chandrayaan symbolizes national achievement and India's rising leadership in science and innovation.
- **Foundation for Future Exploration:** These missions lay groundwork for future goals like sample return, human missions, and Mars exploration. They provide technological know-how and operational experience for more complex interplanetary missions.
- **International Collaboration:** Chandrayaan fosters global cooperation, with instruments from NASA, ESA, and others on board. It strengthens India's role in collaborative space science and builds scientific goodwill internationally.

The Chandrayaan missions have propelled India into the forefront of lunar exploration, delivering major scientific discoveries, advancing indigenous technology, inspiring a new generation, and positioning India as a key player in the future of space exploration and international cooperation.

Bharatiya Antariksh Station (BAS)

Context: The Union Cabinet has given its approval to begin work on the first module of the Bharatiya Antariksh Station (BAS), as part of an expanded scope under the Gaganyaan mission.

About Gaganyaan Mission

The Gaganyaan Programme is India's ambitious human spaceflight mission, led by ISRO, to demonstrate the ability to send humans into space and return them safely.

Mission

- **Objective:** Launch three Indian astronauts into low Earth orbit (400 km) for a three-day mission, with

splashdown in Indian waters.

- **Significance:** Success will make India the fourth nation (after the US, Russia, and China) to independently send humans to space.
- **Scope:** Includes two uncrewed and one crewed mission, approved by the Government. The first crewed flight is expected in 2026.

Technology and Components

- **Launch Vehicle:** The human-rated LVM3 (HLVM3) rocket will be used.
- **Crew Module:** Designed for three astronauts, equipped with life support, crew escape, and safety systems.
- **Key Technologies:** Includes re-entry systems, thermal protection, life support, and a crew escape system.

Bharatiya Antariksh Station (BAS)

- The BAS is India's planned modular space station, led by ISRO, aimed at ensuring long-duration human presence in low Earth orbit (LEO).
- The project will be implemented in phases, beginning with the launch of the first module in 2028 using the LVM3 rocket.
- The station is expected to become fully operational by 2035, with the final configuration consisting of five interconnected modules.

Design & Features

- **Structure:** Five interconnected modules—base, core, science lab, and work areas.
- **Size & Mass:** About 52 tonnes, dimensions 27m × 20m.
- **Orbit:** Positioned at 400–450 km, 51.6° inclination for global access.
- **Crew:** Supports 3–4 astronauts (up to 6 short-term); missions of 3–6 months.
- **Power:** Starts with two large solar panels, more added in later stages.
- **Safety:** Includes a permanently docked escape module for emergencies.

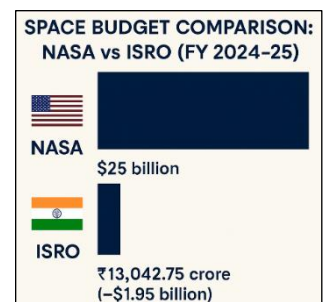
Significance of Space Station for India

- **Scientific Research and Innovation:** BAS will support advanced microgravity experiments in fields like medicine, materials science, and space tech. It will aid Earth observation for disaster response, climate study, and resource tracking.
- **Human Spaceflight Capability:** The station enables long-duration astronaut missions in LEO. Experience gained will support future lunar bases and Mars exploration.
- **Strategic and Global Standing:** BAS places India among top spacefaring nations with permanent space presence. It boosts India's global leadership in space exploration and diplomacy.
- **Technological Development and Industry Growth:** Startups and researchers can test innovations in space, driving tech breakthroughs. It will create jobs and grow high-tech, space-related industries in India.
- **International Collaboration:** BAS allows India to partner with global space agencies for joint missions and research. This strengthens India's presence in international space cooperation.
- **National Security and Capacity Building:** The project builds critical infrastructure and expertise in space systems. It supports national security and promotes technological self-reliance.

Key Challenges for Bharatiya Antariksh Station (BAS)

1. Financial and Budgetary Constraints

- **High Costs:** The total cost of the ISS, including development, assembly, and running costs over 10 years, is estimated at around \$150 billion. Building and operating a space station requires multi-billion dollar investments, which may strain India's current space budget.
- **Low R&D Spending:** India's R&D expenditure is only 0.7% of GDP, limiting the scope for high-end space research and innovation.



- **Sustained Funding Need:** BAS requires consistent, long-term financial support, pushing India to consider international partnerships and private sector participation to bridge funding gaps.

2. Technical and Engineering Complexities

- **Advanced System Requirements:** The station needs new capabilities in life support, radiation shielding, modular integration, and orbital maintenance, going beyond India's existing satellite expertise.
- **Long Development Timeline:** A phased construction with multiple modules increases the risk of technical delays and cost overruns.
- **Docking and Escape Systems:** Developing reliable docking mechanisms and emergency safety systems is critical to ensure crew safety and operational continuity.

3. Human Health and Spaceflight Challenges

- **Astronaut Safety Risks:** Long-duration missions in microgravity pose health threats such as radiation exposure, altered brain structures, fluid shifts, and muscle and bone loss.
- **Psychological and Environmental Stress:** Isolation, confinement, and closed environments can cause mental health strain, requiring well-developed safety protocols and medical support.
- **Need for Robust Contingency Planning:** Emergency protocols must be developed to deal with medical, technical, or environmental crises aboard the station.

4. Industrial and Infrastructure Readiness

- **Limited Private Sector Capability:** India's space industry needs to scale up production and develop specialized components, especially for human-rated systems like habitat modules.
- **Workforce and Skill Development:** Building BAS demands upgrading ISRO's technical base and expanding trained personnel in human spaceflight technologies.

5. Space Environment and Operational Sustainability

- **Space Debris Risk:** The crowded orbital space increases chances of collision with debris, necessitating real-time tracking and avoidance systems.
- **Maintenance and Longevity:** The station will require regular resupply, repairs, and upgrades to remain functional over decades in orbit.

The success of BAS depends on securing stable funding, upgrading ISRO's technical capabilities, and ensuring long-term operational sustainability. India must also navigate geopolitical challenges, adhere to global space norms, and collaborate with experienced spacefaring nations to accelerate progress and establish itself as a major space power.

Nuclear and NanoTech

Small Modular Reactor

Context: The Finance Minister recently announced a ₹20,000 crore 'Nuclear Energy Mission' to develop indigenous Small Modular Reactors (SMR).

About Small Modular Reactors (SMRs)

- SMRs are advanced nuclear reactors with power capacities of up to 300 MW(e) per unit, significantly smaller than conventional nuclear reactors.
- SMRs are designed to be compact, scalable, and can be assembled and installed on-site with prefabricated components, making them a versatile and safer option for nuclear energy generation.
- Currently, only two SMR projects are operational worldwide: Russia's 35 MW Akademik Lomonosov and China's 210 MW HTR-PM.

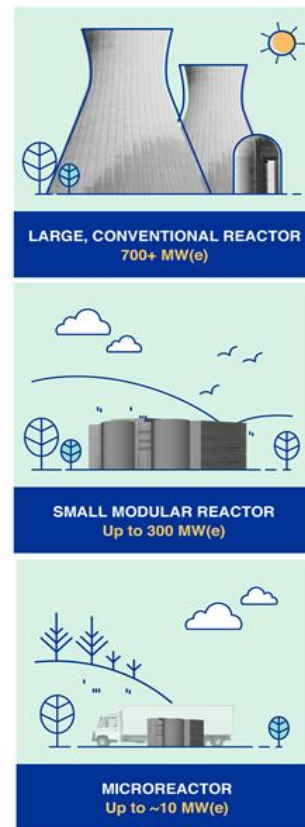
Key Features of Small Modular Reactors (SMRs):

- **Compact and Modular:** SMRs are smaller and easier to install in diverse locations, with modular designs that allow phased deployment as demand grows.

- **Versatile Coolants:** These reactors can use various coolants like light water, sodium, and helium which enhance its safety and efficiency.
- **Efficiency:** SMRs require less frequent refueling, often every 3 to 7 years, compared to the 1 to 2 years typical for conventional reactors
- **Cost-Effective:** Series production lowers costs and construction time, with compact designs allowing deployment in diverse locations.
- **Safety:** Designed to minimize or eliminate the risk of radioactive releases, enhancing environmental safety as SMRs are designed for low-enriched uranium.

Challenges in the Adoption of Small Modular Reactors (SMRs)

- **Cost per unit electricity:** Small Modular Reactors (SMRs), despite their compact design, can have higher per-unit costs (₹7.4–₹31.8/kWh) than large reactors or solar power (₹2.5–₹3.5/kWh), mainly due to fixed infrastructure and regulatory expenses.
- **Initial Costs:** Demonstration units are expensive, and without large-scale adoption, costs may remain high. For instance, a 1,100 MWe large reactor may cost only 3 times more than a 180 MWe SMR but can produce 6 times the power.
- **Licensing and Regulatory Hurdles:** Existing licensing systems are not always suited for new SMR designs, leading to regulatory delays. Evaluating many competing SMR designs puts strain on nuclear safety regulators with limited technical capacity and resources.
- **Technological Uncertainty:** There are many SMR prototypes under development. Without clarity on which ones will be commercialized, investment and regulatory attention may be scattered. The absence of full-scale demonstrators limits confidence in their commercial viability and safety performance.
- **Trust in passive safety:** SMRs rely on passive safety systems, which may not always perform well during extreme events. For example, the NuScale SMR design was found to potentially deplete critical cooling materials during emergencies.
- **Radioactive Waste Management:** SMRs generate as much radioactive waste per unit of energy as large reactors. Despite being smaller in size, they require similar long-term waste disposal infrastructure, which remains a major policy challenge.



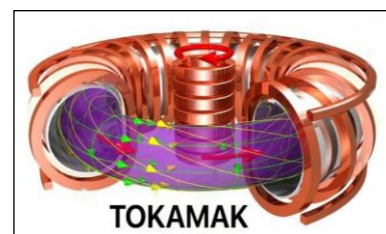
The government's ₹20,000 crore Nuclear Energy Mission signals strong commitment, but its success will depend on coordinated efforts across policy, finance, and technology. With the right safeguards, public engagement, and global cooperation, SMRs can become a vital part of India's energy transition.

ITER

Context: PM Modi visited the International Thermonuclear Experimental Reactor (ITER) facility located in Cadarache, southern France.

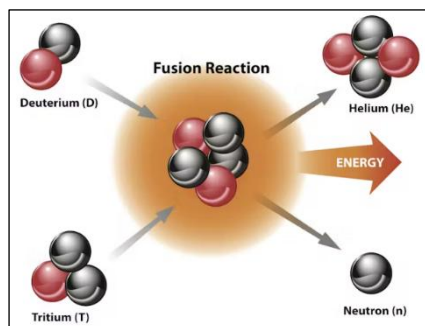
International Thermonuclear Experimental Reactor (ITER)

- The idea for an international joint experiment in fusion was first launched in 1985. It involves the collaboration of 33 countries working together to develop clean and sustainable energy.
- The main objective is to construct the **world's largest tokamak**, a special type of experimental reactor to demonstrate that nuclear fusion can be a safe, large-scale, and carbon-free source of energy.
- The long-term goal is to show that fusion energy can be used to generate electricity, similar to how traditional power plants operate.
- **How It Works:** A tokamak is a doughnut-shaped machine that creates conditions similar to those at the core of the Sun, where fusion occurs. In fusion, light atoms such as hydrogen combine to form heavier atoms like



helium, releasing a huge amount of energy. This energy is absorbed by the reactor walls as heat, which can then be used to produce steam and turn turbines to generate electricity—just like in coal or nuclear power plants.

- **Scientific Principle:** ITER is based on the principle of nuclear fusion, the same process that powers the Sun and stars. In the Sun, fusion of hydrogen atoms not only produces helium but also releases neutrinos and energy.
- **Members:** India, China, Japan, South Korea, Russia, the United States, and the European Union. As per the ITER Agreement (2006), all members share the costs, results, and any intellectual property from the project, including its construction, operation, and eventual decommissioning.



Significance of ITER

- **Future of Clean Energy:** ITER is designed to be a bridge between experimental fusion reactors of today and commercial fusion power plants of tomorrow. It aims to generate clean energy without greenhouse gas emissions (unlike fossil fuels) and without long-term radioactive waste (unlike fission reactors).
- **First "Burning Plasma":** ITER will be the first reactor to produce burning plasma, a state where the fusion reaction becomes self-sustaining. It aims to maintain plasma for 400 to 600 seconds, far exceeding previous fusion experiments.
- **Sustainability and Efficiency:** The reactor is designed to achieve a fusion gain (Q) of more than 10, meaning it will produce 10 times more energy than it consumes. This high gain is essential to make fusion energy a viable and sustainable power source.
- **Advancement of Plasma Science:** ITER is expected to drive significant progress in plasma physics, opening new possibilities in plasma-based technologies across various industries.

India's Contribution to ITER

- India became a full member of the ITER project in 2005, with the aim to enhance its own capabilities in nuclear fusion research.
- India contributes **9% of ITER's operational costs**, as per the agreement among members

Institute for Plasma Research (IPR)

- The IPR under the Department of Atomic Energy, leads India's involvement in the project.
- IPR also manages ITER-India, a specially designated unit responsible for India's contributions to the global project and oversees India's two operational tokamaks – ADITYA-U and SST-1.

ITER-India

- ITER-India acts as the Domestic Agency for the ITER project, coordinating India's contributions and manufacturing responsibilities.
- It is in charge of delivering several key components for the ITER reactor, including: Cryostat (the largest component of ITER), In-wall shielding, Cooling water systems, etc.

Challenges of the ITER Project

- **Radiation and Material Risk:** Fusion reactions emit intense radiation, which can weaken or damage common materials like steel, posing a risk of equipment failure or accidents.
- **Radiation Leakage:** The reactor uses radioactive fuels such as deuterium and tritium. Any mishandling or malfunction could result in radiation leaks and potential safety hazards.
- **Magnet Defects:** High-precision magnets are critical for containing the hot plasma. However, some magnets have experienced cracks and quality issues, which may affect the tokamak's performance.
- **Complex Installation:** The integration of ITER's many critical systems (cooling, diagnostics, vacuum, and magnetic control) remains a massive engineering challenge. Many of these systems are still in development and must work seamlessly together to ensure a stable and controlled fusion reaction.
- **Funding Mechanism:** ITER relies heavily on in-kind contributions, where members supply components instead of cash, adding complexity in standards, timelines, and quality control.

While ITER presents significant engineering and safety challenges, its success could revolutionize global energy systems, ensuring energy security and environmental sustainability for future generations.

Nanotech in Agriculture

Context: In a major boost to sustainable farming, TERI scientists have developed nano sulphur to enhance mustard yield and quality.

What is Nanotechnology?

Nanotechnology deals with the design and application of materials and systems at the nanometre scale (10^{-9} meters), generally between 1 and 100 nanometers. At this scale, materials exhibit unique physical and chemical properties.

Why Indian Agriculture Needs Nanotechnology

- **Addressing Declining Nutrient Use Efficiency:** Nanotechnology enables slow, targeted nutrient release, improving fertilizer efficiency while reducing soil degradation, water contamination, and urea-driven environmental damage.
- **Enhancing Crop Yields and Productivity:** Nano-fertilizers like nano-urea boost nutrient absorption, increase crop yields by up to 20%, and reduce nitrogen leakage into groundwater by up to 50%.
- **Improving Food and Nutritional Security:** Nanofertilizers correct micronutrient deficiencies in Indian soils, improving plant growth, seed development, and contributing to national food and nutrition security.
- **Supporting Sustainable and Climate-Resilient Agriculture:** Nano-based solutions enhance crop resistance to stress, reduce chemical overuse, and support sustainable, organic, and climate-resilient farming practices.
- **Reducing Post-Harvest Losses:** Nanotechnology improves packaging, extends shelf life, and reduces spoilage of perishables, helping minimize food waste and contamination.
- **Enabling Smart and Resource-Efficient Agriculture:** Nanotech offers effective, low-resource solutions for difficult terrains or emergencies, supporting seed/root treatments and enhancing efficiency with fewer inputs.

Nano Sulphur

- Scientists at TERI developed nano sulphur, which increased mustard yield by **30–40%** and oil content by **28–30%**, while reducing the need for traditional sulphur fertilizers by 50%.
- This also improved plant height, branches, and chlorophyll content, offering up to **₹12,000 additional income per acre**.
- Unlike conventional sulphur, which suffers from leaching and low absorption, nano sulphur ensures **90–100% nutrient availability** to the plant.
- It is also eco-friendly, using **plant-promoting bacteria** in its formulation, and could be transformative for sulphur-deficient oilseed-growing states like **Madhya Pradesh, Maharashtra, Gujarat, and Andhra Pradesh**.

Applications of Nanotechnology in Agriculture

- **Nano-Fertilizers:** These improve nutrient delivery with up to 90–100% efficiency, increasing crop productivity with reduced input.
- **Nano-Pesticides:** They ensure precise pest control, reducing chemical usage and preventing harm to beneficial organisms. Example: Nano silver exhibits strong antimicrobial properties.
- **Nano-Biosensors:** Used to track soil health, crop conditions, and environmental parameters in real-time, helping farmers make informed decisions about irrigation, fertilizers, and pest management.
- **Soil Enhancement Nanomaterials:** Clay nanoparticles: Improve soil texture and water retention.
 - **Nanomagnets:** Help remove soil contaminants.
 - **Pollution Remediation:** Nanoparticles can detect and neutralize pollutants in farming areas. Example: UV-activated photocatalysts degrade harmful substances effectively.
 - **Crop Protection:** Silica nanoparticles applied to plant leaves offer protection from excessive heat and ultraviolet exposure.
- **Crop Breeding:** Enables precise gene editing to develop improved crop varieties.
 - **Nano-fibre arrays:** Rapidly deliver genetic material into plant cells.
 - **Single-Wall Carbon Nanotubes (SWNTs):** Can transport DNA and other molecules into plants for targeted treatment or genetic enhancement.

- **Food Processing**
 - **Smart Packaging and Preservation:** Nanocomposites are used to create protective coatings that prevent spoilage and extend shelf life.
 - **Food Safety Monitoring:** Bio-electronic sensors made using single bacterial cells can potentially detect harmful bacteria, toxins, and allergens in food products.

Harms Associated with Nanotechnology in Agriculture

- **Environmental Risks:** Nanoparticles may accumulate in soil, water, and plants, harming beneficial microbes, pollinators, and aquatic life, and potentially disrupting ecosystems and contaminating the broader environment.
- **Human and Animal Health Risks:** Nanoparticles can enter the food chain, accumulate in animal tissues, and pose unknown health risks to humans and livestock, including respiratory, immune, and reproductive issues.
- **Toxicity and Dose-Related Concerns:** At low levels, some nanoparticles support growth, but higher doses can damage plant cells, soil microbes, and nitrogen fixation, raising concerns about chronic exposure effects.
- **Regulatory, Ethical, and Socio-Economic Challenges:** Weak regulations, high costs, labeling gaps, and lack of awareness hinder safe and fair adoption of nanotechnology, especially for small and marginal farmers.
- **Occupational Risks:** Agricultural workers handling nanomaterials face health risks from inhalation or skin exposure, with long-term effects still unknown due to limited occupational safety data

Indian Government Initiatives on Nanotechnology in Agriculture

- **Promotion and Adoption of Nano-Fertilizers:** Government promotes nano-urea and nano-DAP for efficient, eco-friendly nutrient use and import reduction.
- **Digital and Precision Agriculture Integration:** Soil Health Cards promote precise nano-fertilizer use, minimizing waste and environmental damage.
- **National Agricultural Innovation Project (NAIP):** NAIP supports multiple research projects exploring nanotechnology's role in agriculture and allied sectors.
- **Skill Development Training on Nanotechnology (ICAR):** ICAR trains youth under Skill India to synthesize and characterize nanomaterials for agricultural use.
- **Nano Fertilizer Plant (IFFCO, Prayagraj):** IFFCO established India's first Nano Fertilizer Plant at Phulpur to boost domestic nano-urea production.

Moving ahead, responsible development, effective regulation, and farmer-centric outreach will be key to harnessing nanotechnology's benefits while minimizing its risks in agriculture.

Nobel Prizes

Nobel Prizes Chemistry

Context: Nobel Prize in Chemistry 2024 has been awarded to David Baker, Demis Hassabis, and John Jumper for their pioneering work in predicting and designing protein structures using artificial intelligence and computational tools.

- The Royal Swedish Academy of Sciences has decided to award the 2024 Nobel Prize in Chemistry with one half to David Baker and the other half jointly to Demis Hassabis and John M. Jumper



Discoveries that were awarded the Nobel Prize

1. Demis Hassabis and John Jumper (DeepMind, UK/USA)

- Hassabis and Jumper developed AlphaFold, a groundbreaking AI system that accurately predicts the 3D structure of proteins from their amino acid sequences—a problem that puzzled scientists for over 50 years.

- AlphaFold solved the long-standing challenge of protein folding, dramatically reducing the time required to determine protein structures from months or years to just hours or days.
- This breakthrough has accelerated research in medicine, vaccine development, and disease understanding.
- Before AlphaFold, scientists had manually mapped around 1.7 lakh proteins. AlphaFold 2 has since predicted the structures of millions, vastly expanding the scope of biological research.

2. David Baker (USA)

- Developed Rosetta, a software tool that predicts protein structures and helps design entirely new proteins.
- ROSETTA allows researchers to predict a query protein structure from its amino acid sequence, as well as the inverse, i.e., to design an optimal amino acid sequence that will fold into a desired structure.
- His work goes beyond prediction—he can now create synthetic proteins not found in nature.
- These lab-made proteins can be used to create new medicines, enzymes, or materials.
- Baker’s approach is like building custom-made tools at the molecular level to solve specific problems.

Why is this Important?

- Proteins are essential to life—they help in digestion, immunity, oxygen transport, and more. Example: Insulin helps control blood sugar; Haemoglobin carries oxygen.
- Understanding a protein’s structure is key to knowing how it functions. Traditional methods (like X-ray crystallography) were slow and resource-heavy.
- These new tools (AlphaFold and Rosetta) have made protein research faster, cheaper, and more accessible.

Nobel Prize - Physics

Context: Nobel Prize in Physics 2024 has been awarded to John J. Hopfield and Geoffrey Hinton for their foundational contributions that enabled the development of Machine Learning (ML) using Artificial Neural Networks (ANNs).

Discoveries that were awarded the Nobel Prize

1. John J. Hopfield

- Developed the **Hopfield Network**, a type of neural network that mimics how the human brain stores and recalls memories.
- It is a recurrent neural network, meaning information can flow in loops—similar to how humans revisit old memories.
- These networks can store patterns (like images or words) and reconstruct them when only partial information is available. Example: Recognising a blurry photo or completing a half-remembered word.
- Hopfield’s idea was built on Donald Hebb’s hypothesis—“*neurons that fire together, wire together.*” His model showed that neural networks can process and store information efficiently and reliably.

2. Geoffrey Hinton

- Introduced the **Boltzmann Machine**, an early neural network that can learn patterns from data on its own. It’s a type of generative model, meaning it doesn’t just recognise data—it can also generate new data that resembles what it has learned.
- Example: After learning how handwritten digits look, it can generate new examples of digits.
- Boltzmann Machines are important building blocks for deep learning and large AI systems used today.
- Hinton’s work laid the foundation for training deep neural networks that power technologies like image recognition, speech processing, and chatbots.

Why is this Important?

- These discoveries made it possible to build machines that learn and think more like humans.
- They are at the core of many technologies we use today: Voice assistants (like Alexa and Siri) Facial recognition, Self-driving cars, Language translation
- Their work transformed artificial intelligence from theory into powerful real-world applications.

Innovation in India

Context: The Global Innovation Index (GII) 2024 was released by the World Intellectual Property Organization (WIPO). India ranks 39th out of 133 economies in GI 2024.

What is Innovation?

- Innovation is the **process of developing and applying new** ideas, methods, products, or services that bring **meaningful improvements to people's lives, work, or society**.
- It involves **creativity, originality, and problem-solving**, and often leads to better ways of doing things.

Significance of Innovation

- **Drives Economic Growth:** Empirical results show that innovation has a positive impact on economic growth such that a 10% change in innovation will lead to a 5.7% increase in economic growth.
- **Solves Local Problems:** India faces issues like poverty, pollution, and healthcare gaps. Innovation creates affordable, practical solutions suited to Indian needs. Example: Aarogya Setu helped track COVID-19; solar water pumps assist farmers in areas with low electricity.
- **Boosts Social Inclusion:** Innovation connects rural and remote areas to the mainstream economy by: Offering online education; Supporting farmers via apps; Providing healthcare through telemedicine. Example: Zipline uses drones to deliver medical supplies to remote areas. In Rwanda alone, they have completed over 250,000 deliveries.
- **Promotes Self-Reliance (Atmanirbhar Bharat):** To reduce import dependency, India promotes homegrown tech in defense, electronics, and health. Example: ISRO's space missions like Chandrayaan show how India achieved global success at low cost.
- **Encourages Youth and Startups:** With a young population, innovation empowers people to Solve real problems; Start businesses; Lead change. Technology start-ups in India have risen remarkably from around 2,000 in 2014 to approximately 31,000 in 2023.

Key Issues Hindering Innovation Growth in India

- **Low R&D Spending:** India spends just 0.65% of its GDP on research—far behind countries like South Korea (4.8%) and China (2.4%). Private sector contribution is only 37%, compared to over 75% in the US and China.
- **Lack of Researchers:** India has only 253 researchers per million people, far fewer than countries like Denmark, South Korea, UAE.
- **Patent Issues:** Though India granted over 76,000 patents in 2023, 77.7% went to foreigners. Pendency rose by 7.3%, with decisions taking nearly 50 months—making India one of the slower patent offices globally.
- **Poor Patent Use:** Patent filings crossed 100,000 in 2023, but few are commercialized. The income earned from patents remains low compared to investment.
- **Weak Industry-Academia Collaboration:** Colleges and industries in India often work separately. Academic research focuses on theory, while industries seek applied research for quick profits. As a result, few projects lead to market-ready products.
- **Skill Gaps and Talent Drain:** Even with a large youth population, India lacks skilled workers in areas like AI, data science, and IoT. Global Skills Gap Report says 92% of employees in India suffer from lack of industry work skills.
- **Limited Funding for High-Tech Startups:** Deep-tech and hardware startups struggle to get funding. In 2023, deeptech startup funding dropped by 77%. Early-stage funding from Indian investors is still low.
- **Regulatory Challenges:** Even though doing business in India has improved, regulations still slow innovation. Sectors like cryptocurrency still lack clear rules.

Major Government Initiatives

- **Digital India:** Empowers citizens with digital tools, internet access, and governance.
- **Startup India:** Supports startups through funding, tax benefits, and innovation hubs.

- **Atal Innovation Mission (AIM):** Promotes innovation via tinkering labs, incubators, and mentorship programs.
- **Production Linked Incentive (PLI) Schemes:** Encourages manufacturing innovation in electronics, energy, semiconductors, and more.
- **PM-STIAC Missions:** Advances strategic technologies like AI, ocean, quantum, waste management.
- **Digital Public Infrastructure (DPI):** Delivers inclusive digital services through platforms like UPI, Aadhaar.
- **Smart Cities Mission:** Uses AI and IoT to improve urban living systems.
- **Anusandhan National Research Foundation (ANRF):** Formed under the ANRF Act, 2023 to support and promote scientific research and innovation in India.
- **Science, Technology & Innovation Policy (2013):** Aims to build world-class R&D infrastructure and strengthen India's global leadership in select scientific fields.

Strengthening patent commercialization, boosting R&D investments, deepening academia-industry partnerships, closing the skill gap, enhancing access to risk capital, and streamlining regulatory frameworks are critical areas of reform. A focused, **collaborative approach** involving the **government, private sector, academia, and civil society** will be key to unleashing India's innovation potential.

Traditional Knowledge

Context: The 2nd international conference on Communication & Dissemination of Traditional Knowledge (**CDTK-2024**) was jointly organized by CSIR-NIScPR and Gurugram University.

What is Traditional Knowledge (TK)?

- Traditional Knowledge (TK) refers to the knowledge, know-how, skills, and practices developed, sustained, and passed down from generation to generation within a community, often forming a core part of its cultural or spiritual identity.
- TK includes a wide range of fields, including agriculture, ecology, medicine, biodiversity, and cultural expressions such as stories, songs, rituals, and folklore.
- It is typically transmitted orally and collectively owned by the community, reflecting adaptation to local environments over centuries.

Significance of India's TK

- **Sustainable Development:** It plays a vital role in sustainable development, especially in areas like agriculture, health care (Ayurveda, Yoga, Unani, Siddha), environmental management, and biodiversity conservation. Example: Natural pest control methods using neem leaves and cow dung are sustainable practices still followed by Indian farmers.
- **Economic and Social Value:** TK contributes to food security, healthcare, trade, and the livelihoods of millions, especially in rural and indigenous communities. Example: The Hakki Pikki tribe of Karnataka has gained recognition for their herbal hair oil made using traditional recipes, helping them generate income and preserve their traditions.
- **Innovation and Science:** Many modern innovations and medicines are based on or inspired by traditional practices and knowledge systems. Example: The Kani tribe in Kerala shared knowledge of the Arogyapacha plant (*Trichopus zeylanicus*), leading to the development of the anti-fatigue drug Jeevani.
- **Cultural Identity:** TK is integral to the cultural identity and heritage of India's diverse communities, underpinning their social and spiritual life.
- **Global Recognition:** India's rich endowment of TK and biodiversity has attracted international attention. This makes its protection important to prevent misappropriation and ensure benefit-sharing with rightful custodians.

Challenges associated with India's TK

- **Biopiracy and Misappropriation:** There have been numerous cases where foreign entities have patented Indian traditional knowledge without consent or benefit-sharing, leading to loss of rights and benefits for local

communities. Example: In the 1990s, a US company tried to patent the wound-healing properties of turmeric, which has been used in Indian households for centuries.

- **Documentation and Oral Tradition:** Much of India's TK is not formally documented, making it vulnerable to loss, misuse, or misrepresentation.
- **Lack of Legal Protection:** Existing intellectual property rights (IPR) frameworks are often inadequate to protect TK, which is collective, orally transmitted, and not always codified like modern inventions.
- **Benefit Sharing:** Ensuring that communities benefit from the commercial use of their knowledge remains a significant challenge.
- **Erosion and Loss:** Modernization, loss of traditional lifestyles, and lack of transmission to younger generations threaten the survival of TK.

Measures by Government to Protect India's TK

- **Traditional Knowledge Digital Library (TKDL):** Established by the CSIR and the Ministry of AYUSH, the TKDL is a vast database documenting Indian traditional medicinal knowledge in multiple languages. It serves as a tool for patent examiners worldwide to prevent the erroneous granting of patents on Indian TK, effectively combating biopiracy.
- **SVASTIK (Scientifically Validated Societal Traditional Knowledge):** A CSIR-led initiative to scientifically validate traditional Indian knowledge in fields like food, medicine, and agriculture, promoting awareness, trust, and preservation through outreach and publications.
- **Biological Diversity Act, 2002:** This act mandates the formation of Biodiversity Management Committees (BMCs) at local levels to document and protect local biological resources and associated TK.
- **National IPR Policy 2016:** The policy recognizes the importance of protecting TK and provides for its inclusion in the broader IPR framework.
- **International Advocacy:** India has advocated for a sui generis (unique) system of protection for TK at international forums and has pushed for collective rights for TK holders.
- **Defensive Protection:** India has prioritized defensive protection by documenting TK and making it accessible to patent offices globally, thereby preventing unauthorized patents.

To protect and promote India's rich Traditional Knowledge (TK), a multi-pronged approach is essential. This includes strengthening agricultural research for conservation of plant varieties, encouraging herbal gardens, and ensuring fair income for TK practitioners. Integrating TK into education, supporting traditional medicine in public healthcare, and recognizing community experts through incentives will help preserve and mainstream TK for future generations.

Biodiversity Conservation

Living Planet Report 2024

Context: The 2024 Living Planet Report, released by the World Wildlife Fund (WWF), offers a comprehensive overview of global biodiversity, ecosystem health, and the impact of human activities on the natural environment.

Key Findings – WWF Living Planet Report 2024

- **Wildlife Population Decline:** Wildlife populations have declined by an average of 73% between 1970 and 2020. This decline is based on trends observed in nearly 35,000 populations of over 5,000 species.
 - Freshwater species suffered the most (85% drop), followed by terrestrial (69%) and marine species (56%).
- **Regional Trends:** Latin America and the Caribbean saw the highest regional decline (95%), followed by Africa (76%) and Asia-Pacific (60%).
 - Europe and North America saw smaller declines (35–39%) due to earlier environmental damage and some recent recovery efforts.
- **Major Threats to Nature:** **Habitat loss**, largely driven by unsustainable food systems, is the most common threat globally. Other threats include **overexploitation**, **invasive species**, **climate change** (notably in Latin America), and **pollution** (especially in North America and Asia-Pacific).
- **Ecosystem Impact:** Declining species populations weaken ecosystems and reduce their ability to recover from shocks like extreme weather. This undermines the ecosystem services we rely on—like clean water, pollination, food, and climate regulation.
- **Inadequate Current actions:** Over 50% of SDG targets for 2030 are likely to be missed. Climate plans may result in a 3°C rise, far beyond the 1.5°C goal. Biodiversity strategies lack funding and institutional support.
- **Need for Integrated Action:** Addressing climate, biodiversity, and development goals together can reduce conflicts (e.g., over land use) and create win-win solutions for people and the planet.

By transforming systems of conservation, food, energy, and finance we can restore the health of our planet. The future of life on Earth depends not on whether change is possible, but on whether we choose to make it happen—deliberately, urgently, and together.

Key Areas for Action			
Transforming Conservation	Transforming the Food System	Transforming the Energy System	Transforming Finance
Scale up protection	Encourage plant-based diets	Triple renewable energy generation	Stop funding harmful activities
Respect Indigenous Peoples' rights	Reduce global food waste	Avoid harmful impacts of infrastructure	Increase Green Finance
Adopt Nature-Based Solutions	Move funding to sustainable systems	Provide renewable energy solutions	Integrate nature's value

COP16 Convention on Biological Diversity (CBD)

Context: The 16th COP to the Convention on Biological Diversity (CBD) was held in Cali, Colombia.

About COP-16 to CBD

- Around 190 countries participated to advance biodiversity conservation and implement the **30-by-30 target—protecting 30% of Earth's land and oceans by 2030**.
- The main goal was to finalize mechanisms for delivering the Kunming-Montreal Global Biodiversity Framework (KMGBF), adopted in 2022.

Key Outcomes of COP-16

- **Recognition of Indigenous Knowledge:** COP-16 formally acknowledged the crucial role of indigenous peoples and local communities. A new subsidiary body was created to integrate their traditional knowledge and practices into biodiversity conservation.

- **Cali Fund for DSI:** A fund was launched to ensure fair benefit-sharing from the use of Digital Sequence Information (DSI) on genetic resources, especially benefiting indigenous and local communities.
- **Funding for Biodiversity:** A new global target was set to mobilize \$200 billion annually by 2030 for biodiversity protection.
- **National Targets Aligned with KMGBF:** 119 countries submitted national biodiversity targets aligned with the 23 global KMGBF goals.

India's Contributions at COP-16

- **Revised Biodiversity Action Plan:** India unveiled its updated National Biodiversity Strategy and Action Plan (NBSAP), aligned with the KMGBF. The plan outlines 23 national targets and promotes a collaborative “whole-of-government” and “whole-of-society” approach.
- **Financial Commitment:** India has earmarked ₹81,664 crore for biodiversity and conservation activities from 2025 to 2030.
- **Appeal for Global Financial Support:** India stressed the need for international collaboration to mobilize resources, referencing Target 19 of the KMGBF, which aims to generate \$200 billion annually, including \$30 billion through global finance.
- **Plant4Mother Campaign:** Launched to inspire global conservation efforts.
- **International Big Cat Alliance (IBCA):** Highlighted as a major initiative for wildlife protection.
- **Wetlands Conservation:** India increased its number of Ramsar sites from 26 in 2014 to 91, showcasing progress in wetland protection.

Challenges and Gaps at COP-16

- **Insufficient Financial Support:** Developed nations fell short of their pledge to provide **\$20 billion annually by 2025**. Contributions to the Global Biodiversity Framework Fund (GBFF) were minimal, totaling just **\$163 million** during the summit.
- **Uncertainty around the DSI Fund:** While the Cali Fund for Digital Sequence Information was established, disagreements persist over funding contributions and the method for allocating resources.
- **Delays in Planning, Monitoring, Reporting, and Review (PMRR):** These mechanisms vital for assessing both global and national progress are yet to be fully developed.
- **Low Submission of NBSAPs:** Only 44 of the 196 countries submitted updated NBSAPs aligned with KMGBF, although 119 countries reported interim national biodiversity targets.
- **Disputes on Biodiversity Credits:** The use of biodiversity credits and offset mechanisms, introduced under KMGBF saw limited consensus among countries.
- **Incomplete Monitoring Mechanisms:** Progress on finalizing the Monitoring Framework, essential for tracking KMGBF implementation, remained stalled.

The path ahead must focus on turning commitments into action through strong national plans, adequate finance, and inclusive governance. Countries must update their biodiversity strategies (NBSAPs), integrate biodiversity goals into development policies, and ensure transparent monitoring. Indigenous peoples and local communities should be central to conservation, with respect for their knowledge and rights.

Wetlands

Context: Indore and Udaipur have become first two Indian cities to join the global list of accredited wetland cities.

About Wetlands

- As per the Ramsar Convention, Wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.

Wetlands in India

- The country has over 757,000 wetlands with a total wetland area of 15.3 million ha, accounting for nearly 4.7% of the total geographical area of the country.

- Out of this, the area under inland wetlands accounts for 69%, coastal wetlands 27%, and other wetlands (smaller than 2.25 hectares) 4%.

Importance of Wetlands

- **Groundwater Recharge:** Wetlands are crucial freshwater sources in India, aiding groundwater recharge and rainfall absorption. They support irrigation, drinking water, and household needs, with over 95% of freshwater stored in aquifers.
- **Flood and Storm Protection:** Acting as natural buffers, wetlands absorb excess rain and reduce flood risks. Coastal wetlands like mangroves shield against storm surges. During the 1999 Odisha super cyclone, areas with mangroves saw fewer casualties.
- **Biodiversity Hotspots:** Wetlands host diverse flora and fauna, including migratory birds. Around 40% of global species depend on wetlands for breeding and shelter.
- **Water Purification:** Wetlands filter pollutants like nitrogen and phosphorus from agricultural runoff. Plants like Water Hyacinth and Duckweed absorb heavy metals such as iron and copper.
- **Economic Value:** Coastal wetlands contribute two-thirds of India's fish catch. Wetlands support rice farming, honey production (e.g., in Sundarbans), and provide medicinal plants, supporting over a billion livelihoods.
- **Cultural Relevance:** Wetlands like Dal Lake (Kashmir) and Loktak Lake (Manipur) hold religious and cultural significance, and attract tourism.
- **Carbon Sequestration:** Wetlands store 20–30% of global soil carbon. Mangroves can hold up to five times more carbon than upland forests, helping mitigate climate change.



Threats to Wetlands

- **Hydrological Changes:** Altering natural water flow disrupts seasonal levels, habitat connectivity, and nutrient exchange, degrading wetland ecosystems and reducing biodiversity.
- **Catchment Degradation:** Damaged upstream areas cause sedimentation and nutrient runoff, leading to eutrophication, algae growth, and oxygen loss, harming aquatic life.
- **Pollution:** Discharge of untreated industrial waste, sewage, and chemical-laden farm runoff pollutes wetlands, affecting water quality and public health. For example, Robirbazar pond in Bangladesh has become a landfill due to waste dumping.
- **Invasive Species:** Non-native plants and animals like water hyacinth in Assam's Deepor Beel outcompete native species and disrupt wetland ecosystems. Over 3,500 harmful invasive species are documented globally.
- **Encroachment:** Wetlands are drained and filled for urban and industrial use. Najafgarh lake and Pallikaranni marsh have shrunk over 50% due to construction and poor water use.
- **Over-Harvesting:** Excessive resource extraction and harmful fishing or farming methods disturb wetland biodiversity and ecosystem services.
- **Climate Change:** Sea level rise endangers 84% of coastal wetlands; inland wetlands face rising temperatures, altered water cycles, and increased eutrophication.
- **Urbanization:** Around 8% of India's wetlands lie within expanding cities. Mumbai lost 71% of its wetlands, followed by Ahmedabad (57%), Bengaluru (56%), and Delhi-NCR (38%).

Conservation of Wetlands in India

- **Ramsar Convention:** India, a signatory to this global treaty, promotes wetland conservation and sustainable use. India has 91 Ramsar sites in India as of June 2025.
- **Montreux Record:** Wetlands like Keoladeo National Park and Loktak Lake are on this list due to ecological threats, needing priority action.

- **National Wetlands Conservation Programme (NWCP):** Started in 1985-86 to identify and conserve key wetlands, offering states financial and technical support.
- **Wetlands Rules, 2017:** Empower state authorities to identify and protect wetlands while balancing development.
- **Amrit Dharohar (2023-24):** Focuses on Ramsar Site conservation through species protection, nature tourism, livelihoods, and carbon assessment.

Addressing the threats require concerted action from government bodies, NGOs, communities, and individuals. Wetlands are crucial for biodiversity, ecosystem services, and sustainable livelihoods. Conserving these ecosystems is essential for balancing human activities with nature, ensuring a sustainable and resilient future.

Compensatory Afforestation

Context: Comptroller and Auditor General of India (CAG) has flagged that the funds allocated for compensatory afforestation were diverted for other activities by Uttarakhand's Forest divisions.

What is Compensatory Afforestation?

- **Compensatory Afforestation (CA)** means planting trees to make up for forest land that is cleared for development projects like roads, industries, or dams. It ensures that when forests are lost, new ones are grown elsewhere to reduce environmental damage.
- **Mechanism:** When forest land is diverted, the user agency (i.e., the project proponent) is required to fund afforestation over an equivalent or larger area of non-forest or degraded forest land. This includes the cost of planting, maintenance, and long-term monitoring.

Legal and Institutional Framework

- **Forest (Conservation) Act, 1980:** The primary legislation governing compensatory afforestation in India. In June 2022, the Forest Conservation Rules were amended to allow developers to raise plantations on land where the Act is not applicable. Such land can later be swapped to meet compensatory afforestation requirements.
- **Compensatory Afforestation Fund Act, 2016:** Provides the legal framework for managing funds collected from user agencies for afforestation.
- **CAMPA (Compensatory Afforestation Fund Management and Planning Authority):** Oversees the implementation of afforestation activities.
- **CAMPA Fund Distribution:** States deposit the money received from user agencies into the national Compensatory Afforestation Fund (CAF). 90% of the amount is transferred to the respective State CAFs; the remaining 10% is retained to meet administrative costs.

Challenges in Effective Implementation of Compensatory Afforestation

- **Underutilization and Misuse of Funds:** Despite huge collections, the CAMPA funds are often underused due to bureaucratic inefficiencies. CAG found, in Uttarakhand, ₹13.86 crore was diverted to non-afforestation uses like iPhones, laptops, fridges, legal fees, and building renovations.
- **Poor Quality of Afforestation:** Monoculture plantations with limited biodiversity cannot replicate the ecological complexity of natural forests. According to a CAG study, only 33.51% of planted trees survived (below the 60–65% standard set by the Forest Research Institute).
- **Greenwashing Concerns:** Critics argue that CA legitimizes deforestation under the pretext of environmental benefit, masking real ecological loss.
- **Land Availability Issues:** Suitable non-forest land is scarce. Often, afforestation happens far from the original site, failing to restore local ecosystems. Example: Forests cleared in Goa being offset by plantations in Karnataka.
- **Lack of Land Banks:** Many states lack dedicated land for CA. Replanting often repeats on the same land over years, reducing effectiveness.

- **Monoculture Plantations:** Planting commercial species like eucalyptus and teak undermines biodiversity and soil health, unlike native forests with 30–40 species.
- **Implementation Challenges:** CA projects often displace tribal and forest-dependent communities, causing social conflict and violating traditional rights.
- **Monitoring and Data Gaps:** Afforestation success is poorly tracked; survival rates of saplings are rarely monitored, and official data is often unreliable.
- **Marginalization of Local Communities:** A funds bypass gram sabhas, empowering forest departments instead. This undermines local governance and democratic forest management.

Strengthening legal compliance, involving local communities, and ensuring ecological equivalence must guide the future course of CA to truly balance development with environmental sustainability.

Climate Change

Impact of Climate Change on Poor Farmers in India: FAO Report

Context: A recent report by the Food and Agriculture Organization (FAO) sheds light on how climate change disproportionately impacts poor farmers in India.

Key Highlights of the Report

- **Income Disparities:** The report finds that, globally, poor households lose 5% of their income annually due to heat stress and 4.4% due to floods, in contrast to wealthier households. In India, rural poor households are especially vulnerable because their livelihoods are heavily dependent on climate-sensitive agriculture.
- **Structural Inequalities:** The poor farmers often allocate a larger share of their limited resources to sustain agricultural production during adverse events, thereby reducing their ability to engage in off-farm employment. In India, rising temperatures have increased poor households' reliance on agriculture, while their off-farm incomes have decreased by 33%.
- **Gender-Based Income Losses:** Female-headed rural households suffer 8% more income loss from heat and 3% more from floods compared to male-headed households. A 1°C rise in temperature could lead to a 34% higher income loss for women than for men—further widening existing gender disparities.

Policy Recommendations

- **Expand Social Safety Nets:** Strengthen support systems for vulnerable communities, especially through anticipatory social protection that acts before extreme weather events strike.
- **Promote Inclusive Employment:** Remove gender-based barriers, encourage workforce diversification, and introduce mentorship programs to help rural populations access modern job opportunities.
- **Empower Women and Youth:** Adopt gender-transformative policies to challenge social norms, enhance decision-making power, and build socio-emotional skills to improve resilience and adaptability to climate risks.

Government Initiatives

- **National Mission for Sustainable Agriculture (NMSA) and Mission on Strategic Knowledge on Climate Change (NMSKCC):** Launched to achieve a 4% agricultural growth rate and help the country cope with climate impacts.
- **National Initiative on Climate Resilient Agriculture (NICRA):** Implemented by ICAR to conduct research on impact and adaptation of Indian agriculture to climate change.
- **Capacity Building:** Extensive training for farmers, scientists, and extension workers on climate change impacts and adaptation strategies.
- **Employment Schemes:** India pioneered the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), ensuring income security for rural households.
- **Food Security:** During the COVID-19 pandemic, the government launched the PM Garib Kalyan Anna Yojana, providing free food grains to nearly two-thirds of the population.

A coordinated national effort, rooted in equity, resilience, and inclusive growth, is essential to ensure the well-being of India's most vulnerable farmers in a warming world.

COP29 UNFCCC

Context: COP29 was held in Baku, Azerbaijan in November, 2024. This annual summit is organized under the United Nations Framework Convention on Climate Change (UNFCCC) to bring countries together to address global climate issues.

Major Achievements of COP29

- **New Collective Quantified Goal on Climate Finance (NCQG):** An agreement to triple climate finance **for developing countries, setting a new target of \$300 billion per year** by 2035, up from the previous goal of USD 100 billion. The agreement also calls for scaling up total climate financing **from all public and private sources to \$1.3 trillion annually by 2035** to help developing countries mitigate and adapt to climate impacts.
- **Carbon Markets: Operationalizing Article 6:** Rules for both country-to-country trading (Article 6.2) and a centralized UN-managed carbon market (Article 6.4) under the Paris Agreement were finalised.
- **Methane Reduction Declaration:** Over 30 countries endorsed the COP29 Declaration on Reducing Methane from Organic Waste, targeting the waste sector, which contributes 20% of global methane emissions. Notably, India did not sign this declaration.
- **Indigenous Communities:** COP29 adopted the Baku Workplan and extended the mandate of the Local Communities and Indigenous Peoples Platform (LCIPP) group to support Indigenous and local roles in climate action.
- **Adaptation:** Countries urged to submit National Adaptation Plans (NAPs) by 2025; more adaptation funds committed for Least Developed Countries (LDCs) and Small Island Developing States (SIDS).
- **Energy Transition:** The summit advanced the agenda for energy transition, focusing on phasing out fossil fuels, increasing renewable energy deployment, and developing green hydrogen markets.
- **Transparency and Reporting:** Agreements were reached to enhance transparent climate reporting and adaptation measures.
- **Global Stocktake:** COP29 assessed collective progress under the Paris Agreement and called for stronger, more ambitious NDCs to keep the 1.5°C warming limit within reach.

Issues with COP29 Climate Negotiations

- **Inadequate Climate Finance:** The NCQG of \$300 billion/year is far below the \$2.3–2.5 trillion needed annually by developing nations (excluding China). India and others rejected the deal, demanding \$1.3 trillion/year, with \$600 billion as grants or concessional finance.
- **Deadlock on Mitigation Work Programme (MWP):** Disagreements over the future role of fossil fuels stalled the MWP. The final text lacked strong language on fossil fuel phase-out, marking a setback from COP28.
- **Contentious Global Stocktake:** The Global Stocktake, meant to assess progress under the Paris Agreement, faced pushback due to differences on how much progress has been made and how to raise ambition.
- **Weak Progress on Emission Targets:** Emission pledges for 2030 remain insufficient. Global emissions hit a record high in 2023, rising 1.3% from 2022, according to UNEP's Emissions Gap Report 2024.
- **Slow Operationalisation of LDF:** The Loss and Damage Fund has made limited progress, with inadequate funding and delays in implementation, raising concerns among LDCs and SIDS.
- **Postponed NDC Updates:** The next round of updated Nationally Determined Contributions (NDCs) has been delayed to COP30, slowing climate ambition and action.
- **Equity and Responsibility Gaps:** The G7 accounts for 34.5% of global CO₂ emissions since 1850, despite making up just 10% of today's population. Yet, developed countries have shifted the financial burden to all nations. The U.S. still lacks a clear net-zero target date.
- **Fossil Fuel Lobby Influence:** COP29 negotiations were reportedly influenced by fossil fuel lobbies, leading to weaker commitments on fossil fuel phase-out and mitigation goals.

How COP29 Can Benefit India?

- **Strengthening Carbon Markets:** COP29 operationalised Article 6.4, enabling India to trade high-quality carbon credits globally. With digital tools like blockchain and AI, India can boost transparency and attract investments through its domestic carbon market framework.
- **Standardised Carbon Pricing:** Global standards will ensure fair prices for Indian carbon credits, improve investor confidence, and help integrate Indian credits into international markets.
- **Attracting Climate Finance:** The \$300 billion NCQG target, though lower than demanded, still offers scope for India to attract funds for clean energy, resilience, and adaptation efforts.
- **Private Sector Investment:** India's strong policy support, large market, and green growth focus make it a preferred destination for private climate finance in the Global South.
- **Promoting Nature-Based Solutions:** COP29 encouraged sustainable approaches like reforestation, wetland restoration, and mangrove protection. India's MISHTI initiative and increase in mangrove cover reflect its leadership in this area.
- **Supporting Global South Solidarity:** India led Global South voices at COP29 to demand equitable climate finance and supported LDCs and SIDS in climate negotiations.
- **Leveraging Baku-to-Belém Roadmap:** India can use the lead-up to COP30 to showcase its climate efforts, build coalitions for fairer finance, and advocate for innovative funding tools like climate bonds.

India must strengthen climate diplomacy to advocate for fair finance and support for developing nations. Fast-tracking the Loss and Damage Fund and enhancing NDCs in line with the 1.5°C goal are critical.

Paris Agreement

Context: Among the first executive orders that Donald Trump signed after taking over as President on January 20 was to withdraw the U.S. from the Paris Agreement of 2015.

About the Paris Agreement

- It is an international treaty adopted in 2015, during the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) in Paris, France.
- It officially came into effect on November 4, 2016, becoming the legally binding global accord aimed at addressing climate change and its consequences.
- India is a member of the Paris Agreement. It ratified the treaty on October 2, 2016.

Key Features

- **Temperature Goals:** The agreement seeks to limit global temperature rise to "well below" 2°C above pre-industrial levels, with efforts to cap the increase at 1.5°C to minimize climate risks.
- **Nationally Determined Contributions (NDCs):** Each country establishes its own emission reduction targets, which are reviewed and strengthened every five years to enhance climate action.
- **Climate Finance:** At the COP21, nations reaffirmed the commitment made by developed countries to mobilize at least USD 100 billion annually for climate action in developing nations. Originally pledged at COP15 in Copenhagen (2009) and formalized at COP16 in Cancun (2010), this goal was extended at COP21 to remain in effect until 2025.
- **Global Stocktake:** Every five years, countries assess their collective progress toward meeting the agreement's goals.
- **Legally Binding Framework:** While nations have flexibility in setting their targets, they are obligated to submit climate action plans and transparently report their progress.

Impact of US Withdrawal from the Paris Agreement

- **Global Emissions:** The US is the world's second-largest emitter of greenhouse gases. Its withdrawal from the Paris Agreement reduces global emissions reduction efforts by over a third (31.8% as a direct effect and 6.4% as an indirect "leakage" effect, where emissions may increase elsewhere due to the US's absence).
- **Climate Finance and Support for Developing Countries:** The US stopped funding global climate programs like the Green Climate Fund. It **had promised \$3 billion, but gave only a part of it**, leaving poor countries with

fewer resources to fight climate change. Reaching future global funding goals, \$1.3 trillion annually by 2035, becomes harder without the US.

- **International Leadership:** The US exit created a leadership gap in climate talks. Other nations (EU, China, India) are stepping in, but global cooperation is weaker. It damaged the US's image as a reliable climate partner and slowed down negotiations.
- **Domestic Policy Rollbacks:** After leaving the deal, the US relaxed several environmental rules, leading to more emissions at home. These changes make it harder for the US to meet emissions targets and can increase domestic emissions
- **Broader Consequences:** Other countries may have to pay more to cut emissions, while the US benefits economically from fewer restrictions. The trust in the Paris Agreement weakens, making the goal of keeping global warming below 2°C harder to achieve.

India and the Paris Agreement

- India ratified the Paris Agreement in 2016, aligning its climate action with global efforts to limit warming to well below 2°C, ideally 1.5°C, above pre-industrial levels.
- As part of the agreement, India submitted its Nationally Determined Contribution (NDC), which outlines the country's climate targets and strategies for the period up to 2030.
- India has also announced a target to achieve net-zero greenhouse gas emissions by 2070.

India's Paris Agreement Targets		
	Original NDC (2015)	Updated NDC (2022)
Emissions Intensity Reduction	33-35% below 2005 by 2030	45% below 2005 by 2030
Non-Fossil Power Capacity	40% by 2030	50% by 2030
Additional Carbon Sink	2.5-3 bn tonnes CO ₂ by 2030	2.5-3 bn tonnes CO ₂ by 2030

Way Forward for India

- India should continue supporting the Paris Agreement to show global leadership and maintain credibility.
- Climate actions must match India's goals like poverty reduction and access to energy, while following national laws and development plans.
- India should not increase its climate targets too quickly. It should first observe global trends and ensure support is available.
- India must demand promised funds and clean technology from developed countries, as it needs around \$2.5 trillion by 2030 for climate action.

India should work with countries like the EU and China to keep up global climate efforts and join new climate-friendly groups.

Climate Justice

Context: The International Court of Justice (ICJ) began hearings on a case that seeks an advisory opinion on **what responsibilities countries have under international law in addressing climate change**, and **what legal consequences may follow** if they fail to meet those responsibilities.

Background of the Case

UNGA Resolution Initiated by Vanuatu

- The case originates from a resolution passed by the United Nations General Assembly (UNGA) in March 2023, led by Vanuatu, a small Pacific Island nation highly vulnerable to rising sea levels.
- Vanuatu initially proposed seeking an advisory opinion from the International Court of Justice (ICJ) on countries' climate obligations in September 2021.
- The resolution was co-sponsored by 132 countries and received widespread international support.
- India, however, did not join the majority of nations in co-sponsoring the draft resolution.

Key Questions Raised in the Resolution

1. What are the obligations of states under international law to protect the climate system?
2. What are the legal consequences for states that fail to meet these obligations and thereby cause harm to the climate system?

India's Role in the Hearings

- India expressed reservations about whether initiating a judicial process is the most effective approach to achieve shared climate goals.
- According to India, addressing the climate crisis is better achieved through diplomatic and collaborative efforts rather than a top-down judicial mechanism.

Relevant International Legal Instruments

In addition to the core climate treaties—the 1994 UN Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Agreement—the resolution refers to several other legal frameworks, including:

- UN Convention on the Law of the Sea (UNCLOS)
- Convention on Biological Diversity
- Convention to Combat Desertification
- Universal Declaration of Human Rights
- International Covenant on Civil and Political Rights

What is Climate Justice?

- Climate justice is an approach to address climate change that recognizes and seeks to correct the disproportionate impacts of climate change on marginalized, low-income, and vulnerable communities—those who have contributed least to the problem but suffer its worst effects.

Key Features of Climate Justice

- **Equity:** Fair distribution of the costs and benefits of climate action.
- **Accountability:** Richer countries should support poorer countries through finance, technology, and capacity building.
- **Human Rights Focus:** Everyone has a right to a safe and healthy environment.
- **Recognition of Vulnerability:** Special protection for those facing the worst effects, like farmers, indigenous people, and coastal communities.

Significance of the ICJ Climate Change Hearing for Global Climate Justice

- **Legal Clarity on Climate Obligations:** It seeks to define legal duties of states under various international laws (UNFCCC, Paris Agreement, human rights law, UNCLOS, etc.) in the context of climate protection. It aims to address a long-standing gap in the enforceability of climate commitments made through voluntary or political agreements.
- **Strengthens Climate Justice and Equity:** The hearing amplifies the voices of climate-vulnerable nations, especially Small Island Developing States (SIDS), who are most affected despite contributing least to emissions. Could support their demand for “Loss and Damage” compensation from high-emitting developed nations.
- **Potential to Reshape Global Climate Negotiations:** It adds legal weight to the demands for climate finance, technology transfer, and historical responsibility. This may act as a moral and legal tool to pressure developed countries in future COP negotiations and climate talks.
- **Potential Precedent for Climate Litigation:** The ICJ’s advisory opinion could bolster over 2,600 climate-related lawsuits globally. Recent rulings, such as the European Court of Human Rights holding Switzerland accountable for missed emission targets, and India’s Supreme Court recognizing protection from climate impacts as a fundamental right (April 2023), highlight the growing legal momentum.
- **Enhances Role of International Judicial Institutions:** Demonstrates how international courts can play a proactive role in addressing global commons issues. Reflects the shift from diplomatic to legal approaches in climate accountability mechanisms.

As climate change continues to threaten lives and livelihoods, especially in the Global South, judicial forums like the ICJ may increasingly serve as crucial arenas for advancing fairness, responsibility, and long-overdue action.

India Meteorological Department

Context: The India Meteorological Department celebrated its 150th anniversary in January 2025 and launched 'Mission Mausam'.

IMD: Origin and Historical Significance

- Founded in **1875** in response to repeated natural disasters such as a deadly cyclone in Calcutta (1864) and Monsoon failures in 1866 and 1871.
- IMD became the **first national institution for weather science**, bringing all meteorological work under one authority.
- The IMD's mandate includes: **Observations, Forecasting, Warnings, Statistics, Research**
- **Nodal Ministry:** Ministry of Earth Sciences of the Indian Government
- **Headquarters:** New Delhi

Key Achievements and Technological Progress of IMD

Weather Observation and Monitoring

- Replaced mercury barometers with digital barometers by 2023 for safety and accuracy (in line with UNEP's Minamata Convention).
- Installed 200 Agro AWS stations to support agriculture-based weather services.
- Maintains 25 GPS-based stations for precise climate monitoring.

Public Engagement and Communication

- Launched a Crowdsourcing Web Interface (2021) and "Public Observation" App (2022) to allow citizens to share weather updates.
- Focus on gathering real-time information on rain, hail, wind, lightning, and fog from users.

Improved Forecast Accuracy

- Forecast accuracy improved by 40% from 2014 to 2023.
- Doppler Weather Radar (DWR) network expanded from 15 (2014) to 39 (2023).
- Increased coverage area by 35%, aiding timely and accurate weather alerts.

Cyclone Tracking and Early Warnings

- Accurate forecasting helped minimize disaster impacts:
- Examples: Phailin (2013), Hudhud (2014), Fani (2019), Amphan (2020), Biparjoy (2023).
- Notably, cyclone-related deaths reduced from 10,000 in 1999 to zero in recent years (2020–2024).

Technological Innovations

- Launched advanced weather prediction models:
 - **HRRR Model** – predicts short-term rainfall.
 - **EWRF Model** – predicts lightning and rainfall with high detail.
- Introduced '**Mausamgram**' (2024): an interactive tool giving location-specific forecasts.
- Increased Automatic Rain Gauges (ARG): From 1,350 in 2014 to 1,382 in 2023.
- Increased District-wise Rainfall Monitoring Stations: From 3,955 (2014) to 5,896 (2023).

Promoting Indigenous Technology ('Make in India')

- IMD has developed homegrown technologies since 1958.
- Indigenous radar systems, weather satellites (with ISRO), automatic weather stations.
- Introduced Impact-Based Forecasting, Common Alerting Protocol, and a Dynamic Composite Risk Atlas to improve public preparedness.

Challenges Facing the India Meteorological Department (IMD)

- **Increased Unpredictability:** Climate change has made weather patterns more unpredictable, with frequent extreme events like heavy rainfall, droughts, and heatwaves, straining current forecasting systems.
- **Low Resolution:** IMD's 12 km × 12 km resolution hampers highly localized predictions (means forecasters consider 144 sq km area as one unit), especially for rapidly evolving phenomena like thunderstorms.

- **Low Monsoon Forecast Reliability:** Over the last 20 years, IMD's initial monsoon forecasts have shown an average accuracy of just 42%, meaning that in 14 out of 24 years, the actual rainfall deviated by more than $\pm 5\%$ from the prediction.
- **Lower Accuracy for Heavy Rainfall:** Forecast accuracy remains a concern, while heatwaves are predicted with up to 99% accuracy, heavy rainfall forecasts fall below 80%.
- **Sparse Upper-Air Observation Network:** India has only 56 RS/RW (Radiosonde/Radiowind) stations, compared to over 120 in China.
- **Glacial Data Scarcity:** Of over 9,575 glaciers in the Himalayas, fewer than 30 have been studied in detail, limiting the accuracy of hydrological and climate forecasts.
- **Limited 3D Earth system data:** Lack of comprehensive three-dimensional observation systems affects monsoon and extreme weather modeling.

About Mission Mausam

- **Nodal Ministry:** Ministry of Earth Sciences (MoES)
- **Objective:** To transform India into a "weather-ready and climate-smart nation" by enhancing its ability to manage the growing impacts of climate change and extreme weather events. The mission aims to strengthen the resilience of communities through better forecasting and timely warnings.
- **Implementation Timeline:** Phase I: 2024–2026; Phase II: 2026–2031
- **Implementing Agencies:** India Meteorological Department (IMD), Indian Institute of Tropical Meteorology (IITM), Pune, National Centre for Medium-Range Weather Forecasting (NCMRWF), Noida
- **Target Beneficiaries:** Agriculture, Disaster management, Defense, Aviation, Environment, Water resources, Energy and power, Health, Tourism, Shipping and transportation
- **Expected Outcomes:** Mission Mausam is expected to improve the accuracy of short- and medium-range weather forecasts by **5–10%**, thereby enabling better preparedness and risk mitigation across sectors.

Bharat Forecasting System (BFS)

- It is **India's first indigenously developed high-resolution weather prediction model**, launched by the Ministry of Earth Sciences and developed by IITM, Pune.
- This places India ahead of major global peers like the UK, USA, and EU, whose models operate at 9–14 km resolution.
- The BFS is powered by advanced supercomputing systems '*Arka*' (IITM Pune) and '*Arunika*' (NCMRWF, Delhi).

Key features of BFS include:

- Provides panchayat-level weather forecasts for the next two hours (nowcast)
- Offers the world's highest resolution: forecasts at a 6×6 km grid, improved from the earlier **12×12 km grid** (reducing forecast area from 144 sq km to 36 sq km).
- 64% improvement in accuracy over previous models.
- 30% more accurate in forecasting extreme weather events, such as heatwaves, cold waves, cyclones, heavy rainfall, floods, thunderstorms, and lightning across the country.
- It delivers high-resolution forecasts for the entire tropical belt between 30° South and 30° North, covering large parts of Africa, Southeast Asia, and South Asia.

Strengthening IMD's capabilities will require not just technological upgrades, but also institutional reforms, greater investment in research, better data integration, and a renewed focus on timely and clear communication. Building a weather-resilient and climate-smart India depends on how effectively the IMD evolves to meet the demands of a rapidly changing environment.

Marine Heat Wave

Context: Recently, marine heatwaves off the coast of Western Australia caused the death of over 30,000 fish, raising concerns about their increasing frequency and impact on marine life.

About Marine Heat Waves

- Marine Heat Waves (MHWs) happen when the **sea surface temperature in a particular area rises 3–4°C above normal levels for at least five consecutive days.**

- According to the IUCN (2021), the frequency of MHWs has increased by 50% in the last decade, and they now last longer and are more intense.

Causes of Marine Heat Waves

- **Persistent High-Pressure Systems:** When stable high-pressure systems settle over ocean areas, they reduce cloud cover and winds. This allows more sunlight to heat the ocean surface and limits vertical mixing, leading to rapid surface warming.
- **Atmospheric Heating (Surface Heat Flux):** Calm weather and warm air temperatures transfer heat directly into the ocean. This is especially common during prolonged high-pressure conditions.
- **Ocean Currents and Water Movement (Advection):** Shifts in ocean currents can carry warm water into cooler regions. Changes in boundary currents or upwelling zones may raise local sea temperatures and trigger heatwaves.
- **Reduced Ocean Mixing:** Weaker winds or stratification of ocean layers (caused by warming or freshwater input) prevent the mixing of warm surface water with cooler deep water, allowing surface temperatures to rise more quickly.
- **Climate Variability and Global Patterns:** Phenomena like El Niño, the Pacific Decadal Oscillation (PDO), and other long-term climate patterns influence ocean temperatures, raising the chances of marine heatwaves in affected regions.
- **Human-Induced Climate Change:** Rising greenhouse gas emissions have warmed the oceans significantly. According to the IPCC, marine heatwaves have become more frequent and intense since the 1980s, largely due to human activities.
- **Local Environmental Stressors:** Coastal pollution, habitat destruction, and overfishing can alter local marine conditions. These stressors can worsen the effects of warming and make ecosystems more vulnerable to heatwaves.

Impacts of Marine Heat Waves

- **Mass Death of Marine Life:** Marine heatwaves cause large-scale deaths among marine animals, especially those that can't move—like corals, sponges, and algae. Fish, seabirds, and marine mammals are also affected.
- **Coral Bleaching:** High temperatures force corals to expel the algae they rely on for energy, turning them white (bleaching). In the Gulf of Mannar, 85% of corals bleached during a major heatwave.
- **Extreme Weather Events:** Warmer oceans feed more heat and moisture into the atmosphere, increasing the risk of storms and heavy rainfall. In 2024, Hurricane Bery became the earliest Category 5 hurricane ever recorded and caused severe destruction in the Caribbean and parts of the United States.
- **Oxygen Depletion (Deoxygenation):** In shallow waters like those in the Baltic Sea, heatwaves can reduce oxygen levels, making it difficult for marine animals to survive.
- **Disruption of Monsoon Patterns:** Marine heatwaves in the Bay of Bengal can shift the Indian monsoon. For instance, a 2023 heatwave in the northern Bay contributed to extreme rainfall in northwest India while reducing rainfall in central parts of the country.
- **Increased Ocean Acidity:** Warm water holds more hydrogen ions, making the ocean more acidic. This weakens shells and skeletons of marine species like corals, mollusks, and plankton.
- **Loss of Livelihoods and Tourism:** Warmer waters harm fisheries and aquaculture, reduce fish populations, and damage coral reefs that support tourism (snorkeling, diving). In Chile, a marine heatwave led to toxic algal blooms that killed large numbers of farmed salmon, costing the industry nearly \$800 million in lost exports.
- **Rising Sea Levels:** As oceans warm, the water expands—a process known as thermal expansion. This is now the main contributor to sea-level rise in regions like the Indian Ocean, more so than melting glaciers or polar ice.

Way Forward

- **Monitoring & Observation:** Invest in sustained, multi-depth, rapid-response ocean observing systems
- **Predictive Modeling:** Advance models for improved MHW forecasting and risk assessment

- **Climate Mitigation:** Reduce global greenhouse gas emissions through policy and innovation
- **Ecosystem Adaptation:** Restore/protect habitats, adapt fisheries and conservation strategies
- **Societal Preparedness:** Develop early warning systems, public awareness, and community response plans
- **Research & Collaboration:** Support interdisciplinary research and global data sharing

Pollution

Water (Prevention and Control of Pollution) Amendment Act, 2024

Context: The Environment Ministry has notified the Water (Prevention and Control of Pollution) (Manner of Holding Inquiry and Imposition of Penalty) Rules, 2024 under Water Act 2024.

About the Water (Prevention and Control of Pollution) Amendment Act, 2024

- The Water Act, 2024 was passed by the Parliament in February 2024, **amending the Water (Prevention and Control of Pollution) Act, 1974.**
- The amendment **aims to decriminalise several violations, replacing criminal penalties with fines.**
- **Objective:** To rationalise criminal provisions, ensuring that citizens, businesses, and companies do not face imprisonment for minor, technical, or procedural defaults.
- **Applicability:** The Amendment applies to Himachal Pradesh, Rajasthan, the Union territories, and any other state that adopts the Act.

About the Water (Prevention and Control of Pollution) Act, 1974

- This Act aims to stop water pollution and sets up Central and State Pollution Control Boards (CPCB and SPCBs) to monitor and control the discharge of pollutants into water bodies.
- **CPCB:** Sets pollution standards and offers technical advice.
- **SPCB:** Enforces the rules and can take legal action against violators.
- **Industrial Regulations:** Industries must get approval from the State Board before starting operations and follow pollution control standards.
- **Penalties for Non-Compliance:** Breaking the law can lead to factory closure, fines, or jail time up to six years.

Features of Water (Prevention and Control of Pollution) Amendment Act, 2024

- **Industry Setup without Prior Consent:** The Central Government can exempt certain industries from needing prior approval from SPCBs.
- **Issuing Guidelines:** The Centre can issue rules, with CPCB's help, on how States should grant or cancel industrial approvals.
- **Tampering Monitoring Devices:** Penalty of ₹10,000 to ₹15 lakh and jail up to 6 years for tampering with pollution-monitoring devices.
- **SPCB Chairman Appointment:** The Centre will decide how SPCB chairpersons are chosen and their service terms.
- **Penalties:** Offences are decriminalised; violators may face ₹10,000 to ₹15 lakh fine. Jail up to 3 years if fine is not paid.
- **Adjudicating Officer:** A senior officer (Joint Secretary or above) will be appointed to decide penalties.
- **Appeals:** Appeals can be made to the National Green Tribunal within 60 days after paying 10% of the fine.
- **Court Complaints:** Courts can take up cases if the adjudicating officer files a complaint.

Significance of the Amendments

- **Reduced Regulatory Burden:** Exemptions for select industries help streamline processes, eliminate redundant surveillance, and ease the load on regulatory bodies. This enables smoother business operations without compromising environmental safeguards.
- **Promoting Trust-Based Governance:** By decriminalizing minor offenses, the amendment promotes ease of doing business, reducing the fear of imprisonment for minor defaults.

- **Uniform Appointment Processes:** Establishing uniform qualifications and procedures for appointing chairpersons of state boards ensures transparency and prevents inefficiency due to political influence.
- **Sustainable Development:** The amendment aims to strike a balance between economic growth and environmental sustainability, essential for long-term prosperity.

Issues with the Amendments

- **Centralization of Power:** The amendment is seen as increasing central government control over the functions of SPCB as well as selection of officials in state boards, which could undermine the federal structure of India.
- **Decriminalization of Offenses:** By replacing most imprisonment provisions with fines, the bill may reduce the deterrent effect against polluting activities.
- **Ease of Doing Business vs Environmental Protection:** Critics argue that the amendments favor industries by easing business processes at the expense of environmental governance.
- **Weakening of Enforcement Powers:** The amendments cap penalties for environmental violations and shift adjudication powers from Pollution Control Boards (PCBs) to designated officers. This dilutes the authority of PCBs, reducing the deterrent effect on industries violating pollution norms.
- **Persistent Water Pollution Issues:** Little over half of India's 605 rivers were found to be polluted by the Central Pollution Control Board in 2022.

Engaging stakeholders through consultations with environmental experts, industry representatives, and civil society organizations is crucial to refine the amendments and address any concerns. Additionally, implementing training and capacity-building programs for Pollution Control Boards can improve the effective enforcement of environmental regulations.

Air Pollution in India

Context: The World Air Quality Report 2024 by IQAir highlights severe pollution in India, with 13 of the world's 20 most polluted cities located in the country.

Air Pollution

- Air pollution refers to the presence of harmful chemical, physical, or biological substances in the air that disrupt its natural balance.
- Key sources include vehicle emissions, industrial activities, burning of fossil fuels, and wildfires.
- Pollutants like PM, CO, O₃, NO₂, and SO₂ are linked to serious respiratory illnesses and increased mortality rates.

Sources of Air Pollution in India

- **Transport Sector:** The transport sector is the leading source of air pollution in most Indian cities. Vehicle numbers rose from 0.3 million in 1951 to 159.5 million by 2012. Major pollutants include Carbon Monoxide (CO), Nitrogen Oxides (NO_x), and fine dust (PM_{2.5}). Delhi (37%), Mumbai (30%), and Kolkata (61%) face high PM from road dust.
- **Industrial Sector:** Industrialisation has led to heavy emissions of suspended particles (SPM), SO₂, NO_x, and CO₂. The CPCB has marked seven "critical" polluting industries, such as iron, cement, and paper. Rajkot (42%) and Pune (30%) are among the top cities for industrial PM_{2.5} emissions.
- **Agriculture:** Agriculture emits harmful gases like ammonia (NH₃), methane (CH₄), and nitrous oxide (N₂O) from fertilisers and animal waste. Stubble burning in Punjab and Haryana causes winter smog in Delhi. Traditional "slash-and-burn" methods contribute to photochemical smog and poor visibility.

Key Highlights of the World Air Quality Report 2024 for India

- **World's Most Polluted Capital:** Delhi has once again been ranked as the world's most polluted capital, surpassing other cities in the National Capital Region (NCR) in 2023.
- **Decline in PM_{2.5} Levels:** India's average PM_{2.5} concentration in 2024 was 50.6 µg/m³ – a 7% drop from 2023 (54.4 µg/m³).
- **Most Polluted City:** Byrnihat in Meghalaya recorded the highest annual PM_{2.5} level at 128.2 µg/m³.

Major Pollution Sources:

- **Crop Stubble Burning:** Contributed 60% of PM_{2.5} during peak pollution periods.
- **Other Sources:** Vehicular emissions, industrial pollution, and construction dust were also major contributors

- **Power Plants:** Thermal power plants produce 69% of India's electricity, making them major polluters. From 1947 to 1997, SO₂, NO_x, and PM emissions rose nearly 50 times. In the NCR, these plants emit 281 kilotonnes of SO₂ annually, 16 times more than the 17.8 kilotonnes released by burning 8.9 million tonnes of paddy straw.
- **Waste and Biomass Burning:** About 80% of municipal solid waste is dumped in open landfills. This results in harmful emissions like methane (CH₄), ammonia (NH₃), and toxic smoke. In Delhi, burning garbage releases 5300 tonnes of PM₁₀ and 7550 tonnes of PM_{2.5} annually.
- **Domestic Sector:** Many Indian homes still use firewood, cow dung, and charcoal for cooking. This causes high indoor pollution, especially in rural areas. In 2017, 60% of India's population was exposed to household pollution (HEI report).
- **Construction and Demolition:** Construction dust adds to particulate pollution in cities. Delhi generates 5000 tonnes/day of construction waste. Post-construction emissions also contribute to long-term pollution unless green building methods are adopted.

Impact of Air Pollution

- **Health Effects:** Air pollution remains a major public health concern, contributing to 8.1 million deaths globally in 2021, with India and China accounting for nearly half (2.1 million and 2.3 million deaths respectively, as per the State of Global Air Report 2024). It is linked to a range of health problems including respiratory infections, asthma, chronic obstructive pulmonary disease (COPD), cardiovascular conditions, and gastrointestinal disorders.
- **Economic Consequences:** Air pollution hampers economic growth by lowering worker productivity, reducing consumer participation, increasing healthcare expenses, and shortening the life span of infrastructure and machinery. These combined effects slow down overall GDP expansion.
- **Impact on Renewable Energy:** Pollutants in the air diminish the effectiveness of solar panels by obstructing sunlight. Additionally, rising temperatures caused by pollution reduce the performance of photovoltaic systems. Projections indicate that between 2041 and 2050, India could see a 2.3% decline in solar efficiency, resulting in an estimated annual loss of at least 840 GWh of electricity.
- **Environmental Damage:** Air pollution contributes to climate change by releasing greenhouse gases. It also causes acid rain and toxic build-up in ecosystems, endangering both flora and fauna. Excess nitrogen from polluted air weakens vegetation, while ground-level ozone impairs crop productivity by disrupting the process of photosynthesis.

Steps Taken for Improvement of Air Quality

- **National Clean Air Programme (NCAP):** Launched in 2019 to reduce PM₁₀ by 40% by 2025-26 across 131 cities through city-specific action plans, funding support, and multi-scheme convergence.
- **City Action Plans (CAPs):** All 131 cities implement CAPs targeting local pollution sources like vehicles, dust, and industries; 88 cities improved air quality since 2017-18 baseline.
- **Vehicular Emission Control:** BS-VI fuel standards enforced since 2020; EV adoption supported via FAME-II; expressways divert traffic; RFID toll collection helps curb vehicular emissions.
- **Alternative Fuels – SATAT:** SATAT promotes compressed bio-gas (CBG) production to substitute fossil fuels, aiming for cleaner transport fuels and rural employment generation.
- **Stubble Burning Mitigation:** ₹2,440 crore spent since 2018 on crop residue equipment; 2 lakh machines, 39,000 CHCs deployed; financial aid supports straw-based fuel plants.
- **Air Quality Monitoring:** India operates 1,447 air monitoring stations; CPCB issues daily AQI, forecasts, and analysis via centralized control room and online bulletins.
- **Construction & Waste Management:** Anti-smog guns, dust control at large sites, bioremediation of legacy waste, and strict rules for MSW and C&D waste enforced nationwide.

To combat air pollution, India must enforce emission norms, expand clean fuel use, curb stubble burning, regulate construction dust, invest in public transport, and upgrade air monitoring. Strengthening NCAP, promoting awareness, supporting innovation, and enhancing inter-state coordination are essential to protect health, environment, and ensure sustainable urban development across the country.

Namami Gange Programme

Context: CBDT has notified NMCG as an authority under the Income Tax Act, granting it tax exemptions to support the Namami Gange Programme.

About Namami Gange Programme

- It is an integrated conservation mission approved as a **'Flagship Programme'** by the Union Government in 2014, with a budget outlay of ₹20,000 crore.
- The programme is administered by the Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, to achieve two **primary objectives**:
 - **Effective abatement of pollution**
 - **Conservation and rejuvenation of the National River Ganga**
- The programme is implemented by the **National Mission for Clean Ganga (NMCG)** and its state-level counterparts, known as State Programme Management Groups (SPMGs).
- NMCG serves as the implementation wing of the **National Ganga Council (NGC)**, which replaced the former National Ganga River Basin Authority.
- The NGC was established in 2016 under the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016.
- The **NGC is headed by the Prime Minister** and oversees all efforts related to the cleaning and rejuvenation of the Ganga River.
- A three-tier mechanism has been established for effective project monitoring:
 - A **high-level task force** chaired by the **Cabinet Secretary** at the national level, assisted by NMCG.
 - A **state-level committee** chaired by the **Chief Secretary**, assisted by the respective SPMG.
 - A **district-level committee** chaired by the **District Magistrate**.

Key Achievements under Namami Gange Programme

- **Sewage Treatment:** 3,446 million litres per day (MLD) of sewage treatment capacity created through 127 projects, with 152 sewage treatment plants (STPs) completed.
- **Water Quality Improvement:** Biological Oxygen Demand (BOD) levels have improved, notably in the Kannauj–Varanasi stretch, moving from Priority Risk Stretch (PRS) III to PRS V.
- **Financial Management:** 82% of the allocated budget has been disbursed, and the Hybrid Annuity Model has been adopted to ensure long-term project sustainability.
- **River-Front Development:** Modernization and beautification of riverfront areas, including ghats and crematoria, have been undertaken.
- **River Surface Cleaning:** Systematic efforts have been made to remove floating solid waste from the river surface.

Challenges in Namami Gange Programme

- **Low Sewage Treatment Coverage:** As of now, treatment plants can handle only 20% of sewage generated in the five major Ganga-basin states.
- **Slow Project Implementation:** Only 2,665 MLD sewage treatment capacity has been commissioned so far. STPs and sewer networks form 80% of the total project budget, yet many are delayed.
- **Flawed or Outdated Project Reports:** Several Detailed Project Reports (DPRs) required revision, delaying execution. DPRs are critical for defining roles of Centre, State, and contractors.
- **Funding Gaps and Delays:** Despite project approvals worth ₹37,396 crore, only ₹14,745 crore had been disbursed to states by June 2023.
- **Enforcement and Regulatory Gaps:** Weak enforcement of pollution laws for industries, municipalities, and religious activities leads to continued environmental violations.
- **Limited Community Engagement:** Community participation is minimal, with public awareness not translating into sustained behavioural change or local stewardships

Moving forward, sustained political will, improved inter-state coordination, efficient fund utilization, stricter enforcement, and stronger community participation will be crucial to achieving a clean and vibrant Ganga ecosystem.

Environmental Impact Assessment (EIA)

Context: The Supreme Court has barred the Centre from giving ex-post facto environmental clearances or regularising violations of the 2006 EIA notification.

What is Environmental Impact Assessment (EIA)?

- EIA is a **systematic process of evaluating the potential environmental effects (positive and negative) of a proposed project before it is approved.**
- The EIA process ensures that decision-makers consider these likely effects at the earliest possible stage, aiming to avoid, reduce, or offset adverse impacts and to promote sustainable development

Significance of EIA:

- **Promotes Sustainable Development:** Helps balance economic growth with environmental protection.
- **Reduces Environmental Damage:** Identifies and limits harm to nature early on.
- **Prevents Disasters:** Flags risks like floods and landslides before projects begin.
- **Enhances Transparency and Accountability:** Involves the public and builds trust in decisions.
- **Legal and Regulatory Compliance:** Ensures projects follow environmental laws and avoid disputes.
- **Supports Informed Decision-Making:** Offers reliable data to choose safer project options.

Legal Framework for EIA in India

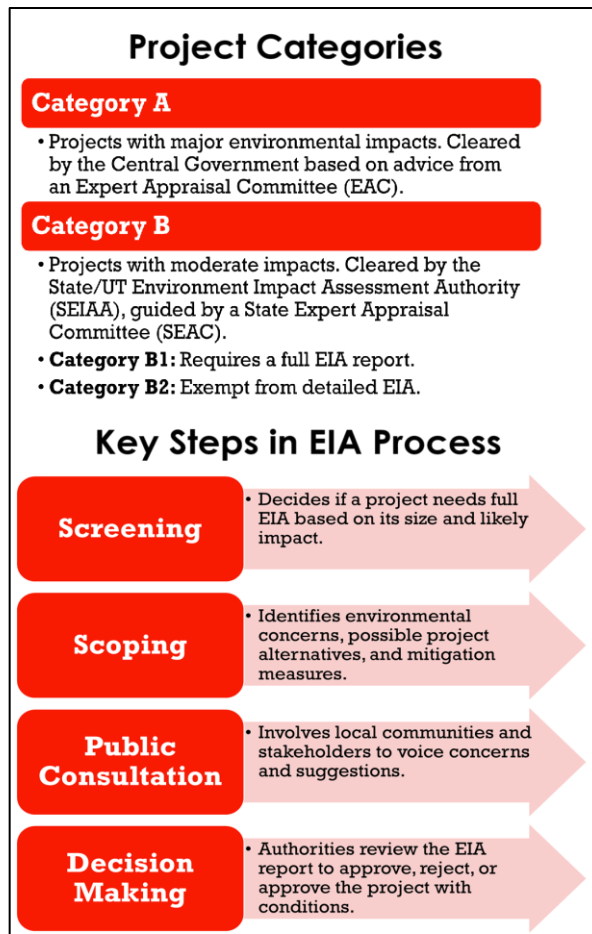
- **Based on Environment (Protection) Act 1986**, India's first official **EIA Notification was issued in 1994**, which:
 - Made EIA mandatory for several large-scale projects.
 - Required prior environmental clearance before starting a project.
- In **2006**, a **revised EIA Notification** was introduced to:
 - Address procedural gaps.
 - Categorise projects based on impact levels.
- In 2020, the government proposed a draft update to make the process more transparent and efficient.

Supreme Court on EIA

- **TN Godavarman v Union of India (1997):** Court stressed EIA's role in protecting forests.
- **MC Mehta v Union of India (1996):** Court highlighted EIA's importance in controlling water pollution.
- **Centre for Environmental Law v Union of India (2018):** Court emphasized public participation in the EIA process.
- **Vanashakti v. Union of India (2025):** SC barred the Centre from granting ex-post facto environmental clearance to mining projects or regularising violations of 2006 EIA notification.

Issues with the Environment Impact Assessment (EIA) in India

- **Weak Legal Status:** The EIA framework is implemented through a "notification" under the EPA, 1986. It lacks the strength of a law passed by Parliament, meaning less scrutiny, less accountability, and more executive control.



- **Lack of Public Participation:** Public consultation is weak and poorly timed—it happens only once after the draft EIA report is ready, giving little room for local input. Notices are often not in local languages, excluding many. The 2020 draft further reduces consultation time from 45 to 40 days, limiting public feedback.
- **Exemptions:** Several environmentally harmful projects, such as highways of strategic and defence importance, are exempted from undergoing full environmental assessment.
- **Conflict of Interest:** The 1994 EIA Notification allowed government-recognized private consultants to conduct assessments, often without restrictions, enabling biased or unqualified consultants to approve projects without proper environmental cost-benefit analysis, raising concerns about credibility and conflict of interest.
- **Standardized Terms of Reference (ToRs):** In many cases, generic ToRs are issued, ignoring local ecological, geographical, or social contexts. For instance, ToR regarding building a highway through Western Ghats is same as building one in plains.
- **Weak Monitoring and Compliance:** There is no independent body to monitor environmental compliance once a project is approved. Many Environmental Management Plans (EMPs) are not made public, especially in sensitive sectors like nuclear energy.
- **Ignoring Other Environmental Laws:** EIA is not well-integrated with other important laws such as: Forest Rights Act, 2006; Biological Diversity Act, 2002; PESA Act, 1996
- **Delayed Integration of EIA:** In India, EIA is typically conducted after the project design and approvals are nearly complete. This delay makes it difficult to introduce major changes or reject the project, as significant resources have already been invested.

India aims for developed status by 2047 and global climate leadership. A balanced, efficient EIA system is key to achieving both. Reforms should reduce clearance delays, enhance public participation, and consider an independent authority and standalone law. Growth and sustainability must go hand in hand.

Renewable Energy

India Achieves 100 GW Solar Energy Milestone

Context: As of January 2025, India has successfully crossed the 100 GW solar energy capacity mark, a major step toward the broader goal of 500 GW non-fossil fuel capacity by 2030.

Key Highlights

- Solar capacity expanded from just 2.82 GW in 2014 to 100 GW in 2025, reflecting a strong policy push and investment in clean energy. The total installed solar capacity now stands at 105.65 GW.
- India added 24.5 GW of solar power in 2024 alone, double the capacity added in 2023.
- India plans to install 500 GW of renewable energy by 2030, with solar power as a key contributor. India now ranks third in the world for total installed solar capacity.
- Major contributors to solar growth include Rajasthan, Gujarat, Tamil Nadu, Maharashtra, and MP.

Key Factors Behind the Growth of Solar Energy in India

- **Government Policies and Initiatives:** Schemes like the National Solar Mission, and PM-KUSUM offer subsidies, tax incentives, and infrastructure for solar projects. Renewable Purchase Obligations (RPOs) push distribution companies to buy renewable power.
- **Falling Costs and Better Technology:** Solar panel prices have declined due to better manufacturing and scale. Efficiency improvements, storage tech, and better grid integration make solar more reliable and cost-effective.
- **Geographic Advantage:** India gets 300 sunny days a year and high solar radiation (4–7 kWh/m²/day). Dry, unused land in states like Rajasthan and Gujarat is ideal for solar farms.
- **Energy Demand and Rural Electrification:** Rising demand from a growing economy and population. Solar offers a reliable solution for rural and off-grid areas, supported by government electrification drives and mini-grid projects.
- **Environmental and Climate Goals:** India targets 500 GW of non-fossil energy by 2030 under the Paris Agreement. Solar helps cut carbon emissions and reduce fossil fuel dependence.

- **International Partnerships:** Through the International Solar Alliance (ISA), India has drawn global funding and tech support. Such partnerships have boosted India's position among the top solar producers.
- **Industrial and Corporate Demand:** Businesses are switching to solar to reduce energy costs and meet green goals, driving growth in rooftop and utility-scale solar.
- **Use of Wastelands:** Covering just 3% of India's wastelands with solar panels could generate 748 GW, showing huge untapped potential.

Major Challenges Faced by Solar Energy in India

- **Land Acquisition and Usage:** Solar farms need large land areas, up to 75 times more than nuclear, causing conflicts with farming and the environment. Land acquisition is slow due to regulatory delays and competing land use.
- **Grid Integration and Infrastructure:** India's grid struggles with variable solar supply, needing upgrades like smart grids and better storage. Affordable, large-scale energy storage remains a key challenge.
- **Import Burden:** India has imported nearly \$1.1 billion worth of solar modules in FY24 and 50% of the imported value was from China which creates a significant trade imbalance between the two countries.
- **Policy and Regulatory Hurdles:** Delays in approvals and land clearances slow projects. Inconsistent policies across states create uncertainty for developers.
- **Financial and Investment Barriers:** High upfront costs deter small users. Limited financing and payment delays from discoms reduce investor confidence.
- **Environmental and Resource Concerns:** Mining for solar materials harms land and emits carbon. Water needed to clean panels is scarce in dry regions.

Major Government Initiatives

- **PM Surya Ghar: Muft Bijli Yojana (PMSGMBY):** Subsidies and loans for 1 crore rooftop solar homes, with free electricity up to 300 units.
- **Model Solar Village Program:** Allocates ₹1 crore per village to promote rural solar adoption and energy self-sufficiency.
- **Solar Park Scheme:** Develops 50 solar parks (37.5 GW capacity) with infrastructure to attract large private investments.
- **Production-Linked Incentive (PLI) Scheme:** ₹24,000 crore to boost domestic manufacturing, reduce imports, and create jobs in the solar industry.
- **Grid Connected Solar Rooftop Scheme:** Promotes urban and rural rooftop solar with subsidies, net metering, and distributed power generation.
- **Green Energy Corridor Scheme:** Invests in transmission lines and substations for integrating solar and other renewables into the grid.
- **International Cooperation via ISA:** India's ISA leadership drives global clean energy investment, technology sharing, and diplomatic collaboration.

Going forward, India must focus on technological innovation, smart policy reforms, and sustainable practices like agrivoltaics and solar waste recycling. Strengthening domestic manufacturing and modernizing grid infrastructure will be crucial to meeting the 2030 target of 500 GW non-fossil fuel capacity while ensuring energy security, environmental sustainability, and economic growth.

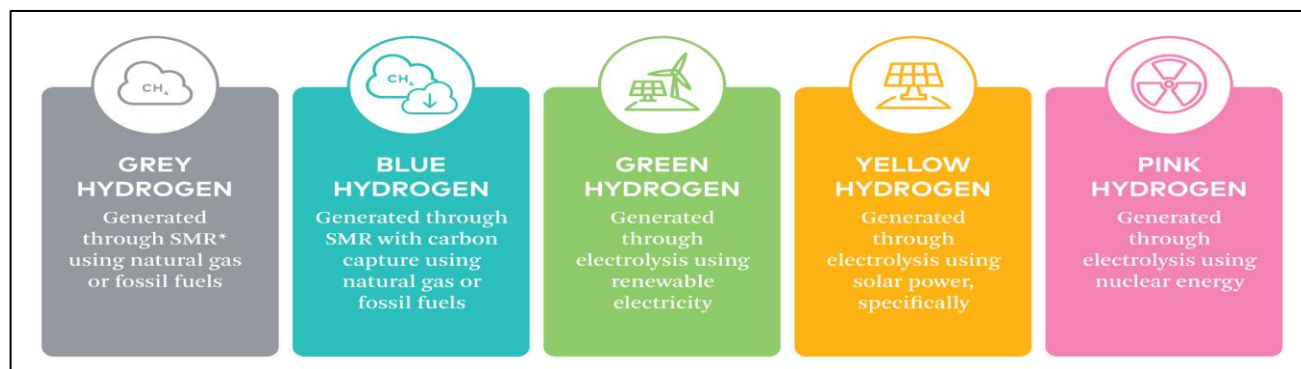
Green Hydrogen in India

Context: The MNRE launched a Green Hydrogen Certification Scheme under the National Green Hydrogen Mission and notified emission offset rules under the Carbon Credit Trading Scheme.

What is Green Hydrogen (GH₂)?

- Green Hydrogen (GH₂) is a clean fuel made by splitting water (H₂O) into hydrogen (H₂) and oxygen (O₂) using electricity from renewable sources like solar, wind, or hydropower.

- The process is called electrolysis, and it does not produce greenhouse gases, making it environmentally friendly.
- Hydrogen is a colourless, odourless, and highly flammable gas, and is the lightest and most abundant element in the universe.
- GH2 can also be produced from biomass (organic matter) through a method called gasification.



How is Green Hydrogen Produced?

1. **Alkaline Electrolysis:** Uses an alkaline liquid (like KOH) to conduct electricity. Low cost, but requires nickel or platinum, which are expensive metals.
2. **Proton Exchange Membrane (PEM) Electrolysis:** Uses a solid membrane instead of liquid. Fast and efficient, but expensive due to precious metal use.
3. **Solid Oxide Electrolysis:** Works at very high temperatures (700–1000°C). Can co-produce hydrogen and carbon monoxide, but needs special materials and is complex.

Advantages of Green Hydrogen

- **Zero Carbon Emissions:** Replacing fossil-fuel hydrogen with green hydrogen could cut 830 million tonnes of CO₂ annually, equal to UK and Indonesia's combined emissions.
- **Decarbonize Hard-to-Abate Sectors:** GH2 decarbonizes steel, cement, aviation, and shipping, where direct electrification is difficult or inefficient.
- **Energy Storage & Grid Stability:** Hydrogen stores excess renewable energy, ensuring grid reliability and addressing solar and wind intermittency.
- **Economic Growth & Jobs:** The cumulative value of the green hydrogen market in India could be \$8 billion by 2030 and \$340 billion by 2050, creating jobs across production, transport, and storage.
- **Energy Security & Independence:** GH2 reduces dependence on imported fossil fuels, allowing countries to use domestic renewable resources for cleaner energy systems.
- **Versatility & Flexibility:** Green hydrogen powers vehicles, industries. It can be turned into ammonia or synthetic fuels for shipping and aviation.
- **Supports UN SDGs:** GH2 helps meet 6 of 17 UN SDGs, including clean energy (SDG 7), climate action (SDG 13), and industry innovation (SDG 9).

Challenges in Green Hydrogen Adoption

- **High Production Costs:** Producing green hydrogen through electrolysis currently costs between \$4.10 and \$7 per kilogram, while gray hydrogen costs only \$1–\$3 per kilogram.
- **Complex Storage Requirements:** Hydrogen is difficult to store safely. In gas form, it needs high-pressure tanks (350–700 bar), and in liquid form, it must be cooled to –252.8°C, which is costly and energy-intensive.
- **Shortage of Skilled Workforce:** India may require nearly 2.83 lakh trained professionals for roles in hydrogen system design, installation, and operations, yet there is a significant gap in skilled manpower today.
- **Water Dependency:** Electrolyzing water to produce hydrogen uses around 9 litres of water per kilogram of hydrogen. This raises concerns in regions facing water scarcity.

- **Lack of Global Standards:** There is no universal agreement on how to define or regulate green hydrogen's carbon content, safety norms, or transport procedures, leading to inconsistencies across countries and barriers to international trade.

About National Green Hydrogen Mission (NGHM)

- Launched in January 2023 with a budget allocation of ₹19,744 crore (approx. \$2.4 billion), the NGHM aims to make India a global hub for green hydrogen by 2030.
- **Target:** Achieve 5 million metric tonnes (MMT) of annual green hydrogen production capacity by 2030, with the potential to reach 10 MMT if export markets expand.
- **Associated Goals:** Add 125 GW of renewable energy capacity, Attract over ₹8 lakh crore (approx. \$100 billion) in investments, Create over 600,000 jobs, Reduce fossil fuel imports by ₹1 lakh crore. Abate nearly 50 MMT of annual greenhouse gas emissions.
- **Phased Implementation**
 - **Phase I (2022–2026):** Focus on building demand, ramping up electrolyzer manufacturing, and launching pilot projects in steel, mobility, and shipping.
 - **Phase II (2026–2030):** Aim for cost parity with fossil hydrogen, expand commercial-scale projects, and develop infrastructure such as hydrogen hubs and refueling stations.
- **Regulatory and Infrastructure Support**
 - **Green Hydrogen Certification Scheme (GHCI):** Ensures transparent and credible certification of green hydrogen production, verified by accredited agencies.
 - **Environmental Clearance Exemption:** Green hydrogen and green ammonia plants are exempt from mandatory environmental clearance, expediting project implementation.
 - **Hydrogen Hubs:** Kandla, Paradip, and Tuticorin ports are being developed as green hydrogen hubs to facilitate production and export.
 - **Pilot Projects:** Initiatives include hydrogen-powered trucks, trains, and refueling stations.

India must cut green hydrogen costs to \$1/kg by 2030 through affordable renewables, local manufacturing, and R&D. Incentives like PLI for green steel, \$1 billion R&D investment, digital certification, and standards via BIS and PESO are vital. A dedicated inter-ministerial body with expert leadership is needed to effectively implement and scale the National Green Hydrogen Mission.

Disaster Management

Tourism in the Indian Himalayan Region (IHR)

Context: Uttarakhand's Panchachuli peaks face environmental stress as over 28,000 pilgrims visited Adi Kailash region, with tourism numbers steadily increasing.

About Indian Himalayan Region (IHR)

The Indian Himalayan Region (IHR), covering 13 states and UTs like Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, and northeastern states, is known for its stunning landscapes, biodiversity, cultural heritage, and spiritual sites. It supports varied tourism forms—spiritual, adventure, eco, and cultural.

Key Features of IHR Tourism:

1. Diverse Attractions:

- **Spiritual Tourism:** Hosts sites like Kedarnath, Badrinath, and Buddhist monasteries (like Hemis, Tabo) drawing millions of pilgrims.
- **Adventure & Nature:** Offers trekking, rafting, mountaineering, and wildlife experiences.
- **Cultural Tourism:** Rich ethnic diversity, festivals, and crafts enhance the cultural appeal.

2. Rising Popularity:

- Tourism in the region grew by 7.9% annually (2013–2023).
- Tourist numbers have reached 100 million/year, projected to touch 240 million by 2025.
- A shift is seen toward peaceful, offbeat destinations and longer stays, especially among youth (18–40 years).

Impact of Indian Himalayan Region (IHR)

A. Environmental Impacts

- **Vegetation and Biodiversity Loss:** Tourism activities such as trekking, road and resort construction, and off-trail movement have led to deforestation, habitat fragmentation, and a measurable 15–20% decline in forest cover in high-tourism areas. Native species are increasingly replaced by invasives like *Lantana camara*.
- **Soil Degradation:** Heavy foot traffic and improper waste disposal compact the soil, reduce fertility, and accelerate erosion. This disrupts nutrient cycling and plant regeneration, threatening ecosystem stability.
- **Waste Management Issues:** Around 70% of tourist waste is improperly disposed of, leading to soil and water pollution. Non-biodegradable waste alters soil properties and harms plant growth.
- **Water and Air Pollution:** Poorly designed infrastructure and increased vehicular movement contribute to air and water pollution, further stressing the fragile Himalayan environment.
- **Climate Change Exacerbation:** Unsustainable tourism practices add to the impacts of climate change in this ecologically sensitive region.
- **Inadequate Environmental Governance:** Current environmental clearance systems fail to account for the Himalayan region's unique ecological fragility. Projects continue without proper regional assessment, increasing disaster vulnerability and ecological stress.

B. Socio-Economic Impacts

- **Economic Benefits:** In states like Uttarakhand, West Bengal, Tripura, Assam, and Meghalaya, the tourism sector has been contributing more than 10 per cent to the GDP.
- **Overtourism and Resource Strain:** The rapid surge in tourists—projected to rise from 100 million to 240 million by 2025—is placing unsustainable pressure on local water, waste, and transport infrastructure, especially in states like Uttarakhand and Himachal Pradesh.
- **Cultural Pressures:** The influx of tourists can strain local traditions and cultural integrity, sometimes leading to the replacement of traditional, eco-friendly infrastructure with inappropriate modern constructions.

Key Government Initiatives for the Indian Himalayan Region (IHR)

- **National Mission for Sustaining the Himalayan Ecosystem (NMSHE):** Focuses on assessing the region's vulnerability to climate change through scientific research and promoting ecological sustainability.
- **Indian Himalayas Climate Adaptation Programme (IHCAP):** Aims to strengthen Indian institutions in climate science, risk assessment, and adaptation planning for resilient development in the Himalayas.
- **SECURE Himalaya Project:** Promotes sustainable management of alpine pastures and forests, conservation of endangered species like the snow leopard, and livelihood support for local communities.
- **Himalayan State Regional Council (by NITI Aayog):** Facilitates coordinated planning and sustainable development among Himalayan states through policy guidance and inter-state cooperation.

To protect the fragile ecology of the Indian Himalayan Region while supporting its development, India must adopt an integrated and region-specific approach. Establishing a dedicated "Himalayan Authority," promoting sustainable tourism, improving water security, reforming the EIA process, and blending traditional knowledge with modern science are crucial for ensuring long-term resilience and sustainability.

Wildfires

Context: Wildfires in Los Angeles have killed several people, forced over 130,000 evacuations, and destroyed homes. India also faces significant challenges due to forest fires.

What is Forest Fire?

A forest fire (also called a wildfire) is an uncontrolled fire that spreads through vegetation such as forests, grasslands, and shrubs. These fires can occur naturally or be caused by human activity.

Forest Fires in India

- As per the Global Wildfire Information System, **forest fires in India rose from 21,288 (2012) to 22,137 (2022).**
- **95%** of forest fires are **human-induced**, while only 5% are due to natural causes like lightning.
- According to Global Forest Watch, **India lost 1.65 million hectares of forest to fires between 2001 and 2023**, ranking 45th out of 215 countries in tree cover loss due to wildfires.
- **Fire-prone areas (ISFR 2023):** (% of total Forest Cover and Scrub)
 - **1.45%:** Extremely fire-prone
 - **9.89%:** Very highly fire-prone
 - **16.63%:** Highly fire-prone

Types of Forest Fires

- **Surface Fire:** Burns dry leaves, grass, and shrubs on the ground. Most common and least damaging.
- **Crown Fire:** Spreads through the tops (canopy) of trees. Very dangerous and fast-spreading.
- **Ground Fire:** Burns under the ground, affecting roots and soil. Hard to detect and extinguish.

Region	Key Reasons for Forest Fires
Western & Eastern Ghats	• Despite high moisture, fires occur in moist deciduous and semi-evergreen forests. • Driven by biotic pressures (human interference, grazing, resource extraction). • Total Burnt Area in Nov 2023- June 2024: Andhra Pradesh: 5,286.8 km² (highest), Karnataka: 2,088.4 km², Tamil Nadu: 1,322.7 km²
North-Western Himalayas	• Dominance of pine forests with flammable litter (pine needles). • Graziers use fire to regenerate grasslands. • Total Burnt Area in Nov 2023- June 2024: Uttarakhand: 1,808.9 km² Himachal: 783.1 km²
Central India	• Annual fires in dry/moist deciduous teak and sal forests. • Fire used to aid collection of non-timber forest products. • Total Burnt Area in Nov 2023- June 2024: Maharashtra: 4,095.0 km² • Chhattisgarh: 3,812.3 km², MP: 3,172.1 km², Odisha: 2,463.7 km²
North-East India	• Shifting cultivation (slash and burn) by local communities. • Fires worsen due to rugged terrain and limited firefighting capacity. • Total Burnt Area in Nov 2023- June 2024: Meghalaya: 463.9 km², Assam: 419.2 km², Manipur: 285.2 km²

Causes of Forest Fires

A. Natural Causes

- **Dry Fuel:** Dry leaves, twigs, and dead wood catch fire easily. Some trees (like pine) contain resins that burn quickly.
- **Moisture Levels:** Dead wood burns more easily than live trees due to lower moisture content.
- **Wind Speed:** Wind adds oxygen to fires and spreads them by pushing flames toward dry fuel. It can also create sparks through bamboo friction or rolling stones.
- **Lightning:** A natural spark from lightning can ignite dry forests, especially in hilly or forested areas.
- **Volcanic Lava:** Lava from volcanic eruptions can cause fires, though this is rare in India.

B. Man-made Causes (Over 90% in India)

- **Negligence:** Campfires, burning waste, discarded cigarettes, or faulty equipment can unintentionally cause fires.
- **Arson:** Fires are sometimes set intentionally for clearing land, illegal activities, or revenge.
- **Shifting Cultivation:** In many tribal regions, forests are cleared and burned to prepare land for farming.
- **Villager Practices:** Fires are lit to keep wild animals away, cook food, or stay warm.
- **Climate Change:** Rising temperatures and dry spells due to global warming make forests more fire-prone.

Impacts of Forest Fires

A. Positive Impacts

- **Forest Floor Cleaning:** Fires remove dry leaves and debris, allowing sunlight to reach the ground and promoting new plant growth.
- **Nutrient Recycling:** Burning trees and plants return nutrients to the soil, improving soil fertility.
- **Supports Germination:** Some seeds (e.g., alder, Clematis, jack pines) require heat, ash, or smoke to germinate.
- **Helps Fire-Dependent Species:** Fire reduces competition for space and nutrients, benefiting species that depend on open areas.

- **Animal Habitat Creation:** Controlled fires create hollow logs and open patches, useful for nesting and shelter.
- **Supports Food Chains:** Some species, like the Karner blue butterfly, depend on fire-adapted plants like wild lupine for food.

B. Negative Impacts

- **Loss of Forest Cover:** Fires destroy vegetation, reducing green cover in forests and savannas. Primary forest loss in India due to fires was around 950 hectares in 2024.
- **Climate Change Contribution:** Forests act as carbon sinks. Fires release stored CO₂, intensifying global warming. Between 2000 and 2020, global wildfires contributed about 7.32 billion metric tons of CO₂ annually, which is ~18.5% of the CO₂ emissions from fossil fuels.
- **Wildlife Harm:** About 3 billion animals were killed or displaced, including iconic and endangered species such as koalas, kangaroos due to Australia Bushfires (2019–2020).
- **Ecological Degradation:** The 1998 severe fires in Russia resulted in the loss of most ecological functions over more than 2 million hectares for 50–100 years.
- **Air Pollution:** Forest fires release smoke, soot, and gases, worsening air quality. The 2023 Canadian wildfires released more carbon in five months than Russia or Japan emitted from fossil fuels in all of 2022.
- **Soil Erosion:** The absence of plant cover after fires leads to erosion by wind, rain, and sun. High-severity and frequent fires can result in the loss of 2–2.5 cm of soil per event.
- **Livelihood Loss:** In India, an estimated 100 million forest dwellers rely on Minor Forest Produce (MFP), such as food, medicine, and fuel, for their survival. Fires disrupt this vital resource base.
- **Degradation of Forest Quality:** Frequent fires convert evergreen forests into grasslands or poor-quality deciduous forests.
- **Increased Flood Risk:** Removal of undergrowth leads to soil runoff and higher chances of flooding.

Government Initiatives

- **National Action Plan on Forest Fires (NAPFF):** Launched by MoEFCC to engage local communities and reduce fire incidents.
- **Forest Fire Prevention & Management Scheme:** A centrally sponsored scheme for creating fire lines, water tanks, and conducting awareness campaigns.
- **Forest Fire Alerts (FSI):** The Forest Survey of India (FSI) sends real-time alerts using satellite-based MODIS sensors.
- **Disaster Management Plan for Forest Fires:** Coordinates national and state agencies for fire disaster response and planning.
- **FSI Van Agni Geo-Portal:** Monitors large-scale fires across India through geospatial data.

Measures to Mitigate Forest Fires

- **Education & Awareness:** Educate forest users and communities about fire risks. Involve locals in fire prevention through awareness drives and enforcement.
- **Fuel Removal:** Regular clearing of dry leaves and pine needles to reduce fire spread, with community participation.
- **Early Detection:** Install watch towers in remote areas for quick fire spotting and response.
- **Restrict Hazardous Activities:** Caution nomadic and local communities against unsafe fire practices, especially during dry seasons.
- **Use of Technology:** Deploy remote sensing, fire forecasting tools, and real-time monitoring systems.
- **Equip Firefighters:** Establish fire control rooms with trained staff and modern equipment, especially for hard-to-reach areas.

Cloudburst

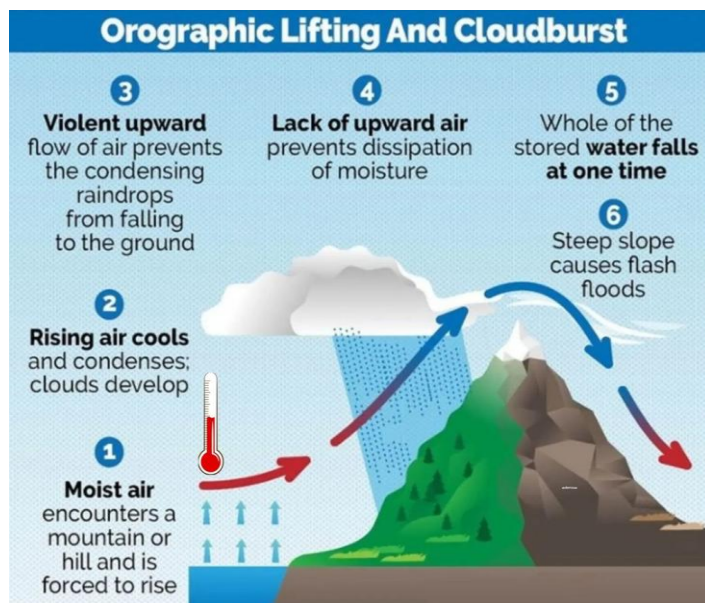
Context: A cloudburst in Ramban, Jammu & Kashmir, triggered flash floods and landslides, resulting in casualties and structural damage.

What are Cloudbursts?

- A cloudburst is an extreme weather event where a very large amount of rain falls in a short period over a small area. It is localised and intense, often resulting in flash floods, landslides, and widespread damage.
- Not every instance of heavy rain is called a cloudburst, it must meet a specific condition.
- **Definition:** When 10 cm or more rainfall occurs within one hour over an area of approximately 10 km x 10 km, it is classified as a cloudburst. Similarly, 5 cm of rain in 30 minutes over the same area would also qualify as a cloudburst.

Main Causes of Cloudbursts

- **Orographic Lifting and Mountain Terrain:** When warm, moist air is forced to rise over mountains or hills (like in the Himalayas), it cools and forms thick rain clouds. This process, called orographic lifting, is a major reason why cloudbursts often happen in hilly regions.
- **Cumulonimbus Clouds and Strong Updrafts:** Cloudbursts are usually linked to cumulonimbus clouds—tall clouds that can hold large amounts of moisture. Powerful upward winds (updrafts) in these clouds stop raindrops from falling. When these winds weaken, a large volume of rain is suddenly released.
- **Cold Air Intrusion:** Sometimes, cold air enters a warm cloud, quickly cooling the moisture inside and causing sudden, intense rainfall.
- **Collision of Air Masses:** When warm, moist winds (like monsoon winds) meet cool, dry winds (such as western disturbances), the clash can lead to the formation of low-pressure areas and trigger heavy rain over a short time.
- **High Humidity and Moisture in the Air:** When the atmosphere holds a lot of moisture (due to high humidity), the chances of heavy rainfall events, including cloudbursts, increase.



Major Examples of Cloudbursts

- **Uttarakhand (July 2021):** Cloudbursts in Chamoli, Uttarkashi, and Pithoragarh led to flash floods and landslides, causing loss of lives and severe damage to infrastructure.
- **Himachal Pradesh (August 2020):** Cloudbursts in Kullu, Lahaul-Spiti, and Kinnaur triggered landslides and flash floods, damaging roads, bridges, and homes.

Consequences of Cloudbursts

- **Flash Floods:**
 - Flash floods are sudden and intense surges of water that occur during or shortly after heavy rainfall. They usually begin within 3 to 6 hours of a cloudburst and are most often caused by intense thunderstorms but can also result from dam failures or mudslides.
 - The risk and impact of flash floods depend on factors like rainfall intensity, terrain, land use, vegetation cover, soil type, and existing moisture levels. These floods can sweep away vehicles, homes, and people, causing widespread damage and loss of life.
- **Landslides:**
 - A landslide is the sudden movement of rock, earth, or debris down a slope, often triggered by heavy rainfall. Cloudbursts increase the risk of landslides by loosening soil and increasing ground water pressure.
 - In India, landslides account for about 8% of global fatalities, with 847 deaths and thousands displaced between 2001 and 2021, according to IIT-Madras. About 13.17% of India's land is prone to landslides, with

4.75% classified as very highly susceptible. Sikkim is the most landslide-prone state, while Kerala has over 14% of its area in the highest risk category.

- **Mudflows:**
 - A mudflow is a type of fast-moving landslide involving thick, dense, and heavy flows of water mixed with mud, silt, and debris. These flows are highly destructive, capable of carrying large rocks and depositing thick layers of sediment.
 - Unlike normal water streams, mudflows are shorter in distance but more forceful, and often leave permanent damage in their path.

NDMA Guidelines for Effective Mitigation of the Impact of Cloudbursts

- **Early Warning Systems:** Install Doppler radars and real-time monitoring tools to issue alerts and forecast cloudbursts up to 3 hours in advance.
- **Disaster Preparedness:** Prepare emergency plans with evacuation routes, shelters, and communication systems; conduct regular drills and train local response teams.
- **Infrastructure Improvement:** Strengthen drainage, embankments, and buildings to withstand heavy rainfall and prevent flooding in vulnerable cloudburst-prone areas.
- **Land-Use Planning:** Regulate construction and prevent development in ecologically fragile and landslide-prone zones.
- **Community Awareness and Sensitisation:** Educate communities on cloudburst risks, safety measures, and involve them in disaster planning using local knowledge and awareness campaigns.

Threats from State and Non-state actors

India-China Patrolling Agreement along LAC

Context: In a significant diplomatic breakthrough, India and China have agreed to resume patrolling at key friction points along the Line of Actual Control (LAC) in eastern Ladakh. This marks progress after prolonged military tensions following the 2020 Galwan Valley clash.

Key Highlights of Agreement

- **Restoration of Patrolling in Depsang and Demchok:** Both nations agreed to restore patrolling rights in Depsang Plains and Demchok (issues predating the 2020 standoff). Indian troops will resume access to Patrolling Points (PP) 10–13 and Charding Nullah.
- **Agreed Patrolling Protocols:** Patrolling will resume up to traditional LAC points, with Indian patrols occurring twice monthly. Patrol groups will be limited to 14–15 personnel to avoid confrontations.
- **Other Friction Points:** Currently, friction points remain in eastern Ladakh: PP 14 (Galwan), PP 15 (Hot Springs), PP 17A (Gogra), the north and south banks of Pangong Tso.
- **Confidence-Building Measures:** Regular commander-level meetings and joint consultations are planned. Both sides aim to reduce troop presence along the LAC, starting in winter.



Significance of the Agreement

- **Reviving Diplomatic Engagement:** The agreement rekindles hopes for the early restoration of diplomatic and bilateral political ties. Its significance is underscored by the fact that, until recently, China was unwilling to even discuss certain friction points, despite agreeing to disengage with others.
- **Strategic Importance of Depsang Plains:** Located about 30 km southeast of the strategically vital Daulat Beg Oldie post near the Karakoram Pass, Depsang Plains holds major tactical value. In an otherwise mountainous region, its flat terrain can be used by either side for rapid military mobilization, similar to the Spanggur Gap in the Chushul sub-sector.
- **Towards Disengagement and De-escalation:** The agreement marks the beginning of a phased process: first disengagement, followed by de-escalation, and eventually, de-induction of forces. Currently, both nations maintain 50,000–60,000 troops each in the region.

While **major flashpoints like Galwan Valley and Pangong Tso remain unresolved**, the pact demonstrates a mutual willingness to engage in confidence-building and restore military and diplomatic normalcy. This development could pave the way for broader stability along the Line of Actual Control and help rebuild trust in bilateral relations.

Crackdown on Civil Society and NGOs in India

Context: Following recent investigations, the Income Tax Department found that several NGOs allegedly violated provisions of the FCRA, leading to the cancellation of their FCRA licenses.

About Foreign Contribution Regulation Act (FCRA), 2010

About	• Enacted in 1976; amended in 2010. • Regulates acceptance and use of foreign funds by individuals, associations, and NGOs to prevent foreign influence.
Authority	Ministry of Home Affairs (MHA)

What is a Foreign Contribution?	• Donation, transfer, or delivery from a foreign source in the form of: Articles (except personal gifts under ₹1 lakh), Currency (Indian/foreign), Securities • Exception: NRIs donating from personal savings via banking channels are excluded.
Who Can Receive Foreign Funds?	• Must have a clear cultural, economic, educational, religious, or social objective • Includes individuals, HUFs, associations, Section 8 companies (non-profit organizations) • Must have FCRA registration or prior government approval • Only 20% of funds allowed for administrative expenses
FCRA Requirements	• Open FCRA account at SBI, New Delhi Main Branch • Registration valid for 5 years; renewable upon compliance • Can be cancelled for false info or misuse (re-registration banned for 3 years) • Suspension allowed for up to 180 days • Orders can be challenged in High Courts
FCRA 2022 Amendments (Exemptions)	• Citizens can receive up to ₹10 lakh per year from foreign relatives without informing authorities • If amount exceeds ₹10 lakh, must notify government within 90 days • Politicians, judges, journalists, etc., not prosecuted for delay in notification regarding such funds

Need for NGO Regulation

- **Misuse of Funds:** In 2009, 883 NGOs were blacklisted for fund misappropriation.
- **Religious Influence:** Of the 3.3 million registered NGOs, 25% are religion-based. Unregulated, some may engage in coerced conversions under the guise of religious service.
- **National Security Concerns:** Former PM Manmohan Singh blamed foreign-funded NGOs for protests against the Kudankulam nuclear plant, which was cleared by expert panels and deemed safe.
- **Preventing Business Activity under the Guise of Charity:** Regulatory frameworks help distinguish genuine charitable work from profit-making activities disguised as NGOs, thereby protecting the integrity of the sector.
- **Allegations of Stalling Economic Growth:** Government agencies, including the Intelligence Bureau, have claimed that the protests and campaigns led by some NGOs have negatively impacted GDP growth by 2-3%, especially by delaying or blocking major infrastructure and industrial projects.

Concerns with FCRA Implementation

- **Restrictive Control:** Over 20,000 FCRA licenses have been cancelled since 2014, including those of Rajiv Gandhi Foundation and CARE India, limiting civil society operations.
- **Reduced Funding Access:** The number of NGOs that receive foreign funds reduced from 18,304 in 2016–2017 to 18,235 in 2017–2018 and 17,540 in 2018–2019.
- **Silencing Dissent:** NGOs working on sensitive issues (e.g., human rights, environment) like Oxfam India have been targeted, raising concerns of stifled activism.
- **Administrative Burden:** Remote NGOs must manage a bank account in New Delhi to receive foreign donations, complicating their operations.
- **Global Reputation:** International bodies have criticized the FCRA for undermining democratic freedoms. Freedom House downgraded India to an “electoral autocracy” due to declining civil liberties.
- **Political Influence:** Concerns remain over political bias in granting or denying FCRA registration, potentially misused to suppress unfavoured groups.

Moving forward, it is crucial to strengthen oversight mechanisms to prevent misuse of foreign contributions and simplify FCRA registration for legitimate NGOs. Ensuring the registration process remains free from political influence and encouraging transparent reporting on fund utilization are essential steps. These measures will enhance regulation effectiveness and foster trust in the NGO sector.

Anti-Terrorism Conference

Context: A two-day anti-terror conference was held in New Delhi, inaugurated by the Union Home Minister and organized by the National Investigation Agency (NIA).

Highlights of the Conference

- **Focus Areas:** Terror Funding through Organized Crime in Northeast India, Encrypted Apps, Gang-Terror links, and Social Media Misuse.
- The Home Minister announced plans for a national counter-terrorism policy and highlighted a 70% drop in terror incidents since 2014.
- Improved coordination has reduced terrorists' operational lifespan from two years to just a few days.
- Violence has significantly declined in Jammu & Kashmir, Naxal-affected regions, and the Northeast.
- A model structure for Anti-Terrorism Squads (ATS) and Special Task Forces (STF) was proposed for states and UTs, with flexible SOPs to suit local needs.

What is Terrorism?

- Terrorism can be termed as the systematic use or threatened use of violence to intimidate a population or government for political, religious, or ideological goals.
- According to Section 113 of the Bharatiya Nyaya Sanhita (BNS), a terrorist act is any act committed in India or abroad with the intention to: (a) Threaten the unity, integrity, and security of India, (b) Intimidate the general public or a segment, (c) Disturb public order.

Causes and Contributing Factors for Terrorism in India

- **Ethno-Nationalist Tensions:** Certain regions in India have a history of ethnic and separatist movements seeking independence, sometimes resorting to terrorism to advance their goals. Militancy in Jammu and Kashmir and Punjab for separate states are such examples.
- **Cross-Border Terrorism:** Terror groups often receive backing from neighboring countries, especially Pakistan, through funding, training, and arms. In 2008, India's NSA reported 800 active terror cells operating across the country.
- **Religious Motivations:** Groups motivated by religious ideologies, such as Islamist militants in Kashmir and radical factions in other regions, have perpetrated major attacks. The 2008 Mumbai attacks and the 2025 Pahalgam attack are prominent examples.
- **Proliferation of Terror Groups:** India has faced threats from a wide array of terror organizations. The South Asia Terrorism Portal lists 180 groups that have operated in India over the past 20 years, with 38 currently banned under Indian law.
- **Narcoterrorism:** It is estimated that ~15% of the money generated from narcotics trade was used to finance terror activities during the early decades of Kashmir's armed insurgency.
- **Socio-Economic Disparities:** Marginalization, lack of development, and high unemployment rates in certain regions make populations more susceptible to radicalization and recruitment by terrorist organizations.
- **Political Factors:** Weak law enforcement, political instability, and corruption can create environments where terrorist groups can flourish.

Terrorism Financing

Terrorism financing refers to raising and managing funds to support terrorist activities. Cutting off these financial channels is crucial to weaken terror networks.

Major Sources in India:

- **Drug Trafficking:** Heroin from the Golden Crescent (Pakistan, Iran, Afghanistan) is smuggled into India, especially Punjab, funding groups like the Taliban.
- **Extortion & Kidnapping:** Businesses and individuals are targeted for ransom or protection money, particularly in insurgency-hit regions.

- **Counterfeit Currency:** Fake Indian currency is circulated to destabilize the economy and finance operations.
- **Charity Fronts:** Groups like Jamaat-ud-Dawa pose as charities to collect funds that are diverted to terror activities.
- **Criminal Nexus:** Terrorists often partner with organized crime networks for smuggling weapons, drugs, and humans to raise money.

Counter-Terrorism Strategies in India

A. Tactical Responses

- **Surgical Strikes & Hot Pursuits:** Targeted cross-border operations are carried out to destroy terror camps and deter future attacks. Example: Operation Sindoor (2025): Following the Pahalgam attack, India launched air and missile strikes on 9 terror camps.
- **Intelligence-Based Operations:** Operations are based on timely intelligence to stop attacks before they happen. Agencies like Multi-Agency Centre (MAC) and state police share real-time data to act swiftly. Example: Intelligence input enabled the 2016 strikes and helped foil many planned attacks.
- **Reduced “Shelf Life” of Terrorists:** Quick response forces like NSG and special police units neutralize terrorists soon after attacks. Example: Post-Uri and Pulwama, key operatives were eliminated within days.

B. Policy & Institutional Measures

- **National Investigation Agency (NIA):** Leads major terror investigations (e.g., 26/11, Pulwama) and can prosecute cross-border crimes.
- **State-level Anti-Terrorism Squads (ATS) and Special Task Forces (STF):** Handle local threats with focused intelligence and action.
- **Standard Operating Procedures (SOPs):** MHA has issued SOPs and model frameworks to guide state police in dealing with terror threats uniformly and effectively.
- **Inter-Agency Coordination:** After 26/11, the Multi-Agency Centre (MAC) was set up for better intelligence sharing between central and state bodies. Joint drills and meetings now ensure faster response times.

C. Community-Centric Approaches

- **Winning Hearts and Minds:** Security forces organize civic programs—medical camps, sports events—to build trust in conflict regions like Jammu & Kashmir.
- **Youth Engagement:** Programs like Udaan provide training and jobs to youth in vulnerable areas, steering them away from extremist paths.
- **Counter-Radicalization & De-Radicalization:** Police and civil society run awareness and rehabilitation programs, especially in prisons and high-risk communities.

Challenges in Counter-Terrorism Implementation

- **Evolving & Transnational Terrorism:** Terror groups constantly adapt using tech like drones, encrypted apps, and cryptocurrencies.
- **Fragmented Bureaucracy:** India’s divided central-state bureaucratic structure leads to weak coordination and intelligence sharing. Local police often lack training, resources, and are vulnerable to political interference.
- **Resource Constraints:** Despite high threat levels, India’s counter-terror units face shortages in funds, equipment, and training. 33% posts in the NIA are vacant as of 2022.
- **Legal Gaps & Weak Enforcement:** Laws exist for issues like narco-terrorism and terror financing, but enforcement is weak. Regulatory oversight of drones, crypto, and encrypted apps needs strengthening, alongside better inter-agency coordination.
- **Inter-Agency & Global Coordination** Although systems like MAC and joint drills exist, real-time intelligence sharing and unified responses remain difficult. Success requires sustained cooperation across central, state, and international stakeholders.

- **Counter-Radicalization Challenges:** Community outreach struggles with trust deficits, especially in conflict areas. Online radical propaganda spreads fast, making it harder to engage youth and prevent recruitment without an all-society approach.
- **Tech & Cyber Threats:** Terrorists exploit AI, encrypted platforms, and drones faster than agencies can respond. Cyber resilience and upgrading tech capabilities are urgent but demand high investment.
- **Judicial Challenges:** . Under the UAPA, 4,690 persons were arrested between 2018 and 2020, but only 3% were convicted. Even with NIA's success, overall prosecution remains time-consuming and vulnerable to procedural issues.

Going forward, India must balance hard security measures with inclusive development, youth engagement, and international cooperation to dismantle the roots of terrorism and ensure long-term national security.

Armed Forces (Special Powers) Act (AFSPA)

Context: AFSPA was extended in Manipur, Nagaland, Arunachal Pradesh by the Union Ministry of Home Affairs (MHA).

Armed Forces (Special Powers) Act (AFSPA) 1958

- **Purpose:** An Act enacted to confer special powers upon members of the armed forces in disturbed areas within the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura—regions situated in the northeastern sector of India.
- **Power to Declare Disturbed Areas (Section 3):** The Governor of a State, Administrator of a Union Territory, or the Central Government may, through a notification in the Official Gazette, declare the whole or any part of a State or Union Territory as a “disturbed area.” A disturbed area is one in such a dangerous or unstable condition that the use of armed forces in aid of civil power is deemed necessary.
- **Special Powers of the Armed Forces (Section 4):** Any commissioned officer, warrant officer, non-commissioned officer, or person of equivalent rank in the armed forces is granted “special powers” under AFSPA. These powers must be exercised with due caution and responsibility.
- **Special Powers Under AFSPA:** Ban gatherings of 5+ people, Use force/firearms after warning, Arrest without warrant, Search without warrant, Seize firearms
- **Legal Immunity:** Armed forces personnel operating under AFSPA are protected from legal prosecution unless the Central Government grants prior sanction for such action.

Arguments in Favour of AFSPA

- **Ensures Security in Disturbed Areas:** AFSPA enables the armed forces to tackle insurgency and terrorism in high-conflict zones where civil authority alone may be insufficient.
- **Grants Essential Operational Powers:** The Act provides powers to arrest, search, and use force after warning which are crucial for swift action in volatile and lawless regions.
- **Legal Protection for Armed Forces:** AFSPA shields personnel from prosecution for duty-related actions, ensuring they can operate confidently in dangerous and unpredictable environments.
- **Boosts Morale and Confidence:** Legal safeguards reassure soldiers, boosting their morale and allowing them to perform efficiently without fear of arbitrary legal consequences.
- **Strengthens Border and National Security:** AFSPA aids in protecting India's borders by enabling coordinated action against cross-border threats and insurgent infiltration.
- **Constitutionally Upheld with Guidelines:** The Supreme Court upheld AFSPA in 1997 with checks like periodic review and state consultation before declaring an area disturbed.
- **Allows for Judicial Accountability:** The 2016 SC ruling clarified that AFSPA does not grant total immunity and excesses by forces can be judicially reviewed.

Arguments Against AFSPA

- **Undermines State Autonomy:** Law and order being a state subject, AFSPA's imposition often causes friction, particularly when Centre overrides state assessments. AFSPA allows the Centre to declare areas "disturbed" without state consent, weakening the federal structure and overriding elected state governments.
- **Encourages Excessive Force:** Section 4 permits armed forces to use lethal force after a warning, often leading to disproportionate and fatal encounters.
- **Violates Civil Liberties:** AFSPA permits arrests and searches without warrants, bypassing legal safeguards and risking arbitrary detention and human rights abuse.
- **Lacks Accountability Mechanisms:** Section 7 bars prosecution without prior sanction, allowing security forces to operate with near-complete immunity from legal action.
- **Documented Human Rights Violations:** The 2013 Hegde Commission found all seven deaths it investigated in Manipur to be extrajudicial killings, pointing to systemic abuse.
- **Reminiscent of Colonial Laws:** AFSPA is likened to the Rowlatt Act for enabling detention on suspicion, a practice incompatible with modern democratic norms.
- **Violates Constitutional Rights:** The Act contradicts Articles 14, 19, 21, 22, and 25 of the Constitution, which guarantee equality, freedom, and due process.
- **Contravenes International Law:** AFSPA breaches global human rights standards under UDHR, ICCPR, and the Convention Against Torture, attracting international criticism.

Key Recommendations of Various Committees

Jeevan Reddy Committee (2005)	Second ARC (2007)	Santosh Hegde Commission (2013)
• Repeal AFSPA. • Incorporate required provisions into the Unlawful Activities (Prevention) Act, 1967. • Define armed forces' powers clearly. • Establish grievance cells in every district where armed forces are deployed.	• Recommended repeal of AFSPA in its 5th Report on Public Order. • Emphasised the need for alternative, rights-based legal mechanisms.	• Review AFSPA every six months to assess its necessity. • Amend UAPA to handle terrorism without over-relying on AFSPA. • Security forces should not have blanket immunity; allow investigation of alleged excesses.

While AFSPA has played a significant role in counter-insurgency and maintaining public order in disturbed regions, it has also drawn serious criticism for alleged human rights violations and lack of accountability. A revised framework rooted in the rule of law, oversight, and respect for civil liberties is essential to ensure both national security and democratic integrity.

Vibrant Villages Programme-II

Context: The Union Cabinet has approved Phase II of the Vibrant Villages Programme (VVP) for the comprehensive development of strategic villages located along international land borders (ILBs).

Vibrant Villages Programme-II (VVP-II)	
Type	Central Sector Scheme with 100% funding from the Union Government (Unlike VVP-I, which was Centrally Sponsored)
Coverage	Strategic villages along international land borders (ILBs) in 17 States/UTs (Excludes northern border blocks covered under VVP-I in 2023–24)
Objective	• Improve living conditions • Provide livelihood opportunities • Control trans-border crime • Integrate border populations as 'eyes and ears' for internal security
Key Features of VVP-II	
Infrastructure Development	• Roads, housing, sanitation, drinking water, SMART classrooms • All-weather road connectivity under PMGSY-IV

Value Chain & Livelihoods	• Support for cooperatives and self-help groups (SHGs) • Outreach tailored to border region needs for sustainable livelihoods
Welfare Schemes	• Implement and converge existing welfare schemes in identified villages • Ensure full coverage using the convergence model
Cultural & Tourism Promotion	• Organise fairs, festivals, awareness camps, and national day celebrations • Boost tourism and preserve local heritage
PM Gati Shakti	• Use the PM Gati Shakti platform for coordinated planning and effective implementation

Key Reasons for VVP

- **China's Border Infrastructure Advantage:** China has built over 628 "Xiaokang" border villages, combining civilian housing with military outposts. There is rapid development of expressways, railways, airports, and helipads in Tibet near the Indian border.
- **India's Strategic Gaps:** Limited border infrastructure hampers troop movement and logistics, especially in high-altitude areas. India's military has only 4-5 months of operational window due to weather constraints, compared to China's 8 months.
- **Infrastructure Issues:** Many border villages lack all-weather roads, reliable electricity, telecom connectivity, and basic amenities, making them isolated and underdeveloped.
- **Livelihood Opportunities:** Limited economic activities lead to outmigration and stagnation. VVP focuses on creating sustainable livelihood opportunities through value-chain development, tourism, and support for cooperatives and self-help groups.
- **Internal Security:** Border populations are crucial for national security. By improving living conditions and assimilating these communities, VVP aims to involve villagers as the "eyes and ears" of border guarding forces, helping to control trans-border crime and enhance surveillance.
- **Countering Outmigration:** By making border villages self-reliant and vibrant, VVP acts as a strategic counter to population outmigration, which can otherwise weaken India's presence in sensitive border areas.
- **Cultural and Social Integration:** VVP also promotes cultural vibrancy and national integration through community events, fairs, and national day celebrations, fostering a sense of belonging and patriotism among border residents.

The Vibrant Villages Programme is not just about rural development, it's a strategic necessity. By modernising India's border villages, improving connectivity, and empowering local communities, the programme aims to secure India's sovereignty, counter China's infrastructure advantage, and enhance national security along one of the world's most sensitive borders.

New Strategic Doctrine

Context: The Indian Prime Minister has announced a new strategic doctrine following Operation Sindoor, marking a significant shift in India's approach to counterterrorism.

Key Changes in India's Security Doctrine

Operation Sindoor marks a significant transformation in India's National Security Doctrine. The shift reflects a stronger, more proactive approach to counter-terrorism and national defence. The doctrine now rests on three core pillars, each redefining India's strategic and military posture.

1. Response on India's Terms

- India has adopted a firm stance of retaliating strongly and swiftly against any terrorist attack, choosing the time and place of response on its own terms.
- For Example, India targeted nine major terror hubs in Pakistan and Pakistan-occupied Jammu & Kashmir (PoJK), including the headquarters of Lashkar-e-Taiba and Jaish-e-Mohammed.

- **Significance:**
 - This lowers the threshold for military response, sending a strong message that no provocation will go unanswered.
 - It increases the military and economic costs for states supporting terrorism.
 - Acts as a deterrent for future cross-border attacks.

2. No Tolerance for Nuclear Blackmail

- India has made it clear that it will not be deterred by nuclear threats and will respond decisively to terrorism, even if it is shielded under the nuclear umbrella.
- For Example: India maintained its posture even after Pakistan's ambassador to Russia warned of using the full military arsenal, including nuclear weapons, if India retaliated or disrupted Pakistan's water supply.
- **Significance:**
 - Marks a shift from the earlier doctrine of strategic restraint to strategic assertiveness.
 - Affirms India's uncompromised right to self-defence, regardless of nuclear intimidation.

3. No Distinction Between Terrorists and Their Sponsors

- India now regards terrorist groups and the states that support them as a single hostile entity, eliminating the traditional separation between non-state actors and state actors.
- For Example: Operation Sindoor extended beyond PoJK, hitting deep inside Pakistan's mainland, including regions like Punjab province and Bahawalpur, signalling that state support for terrorism is itself a target.
- **Significance:**
 - Declares state-sponsored terrorism as a form of war conducted by proxy.
 - Strengthens global messaging that harbouring terrorists will have consequences.
 - Enhances India's credibility and leadership in global counter-terrorism efforts.

The New Normal in India's Response to Terrorism

- **Operation Sindoor as a Defining Moment:** Operation Sindoor marks a shift in India's counter-terrorism doctrine, establishing a new standard for military response. It lowers the threshold for future action, signalling India's increased offensive readiness and willingness to strike proactively.
- **India in the Global War on Terror:** PM Modi framed India's response within the broader global anti-terror narrative, drawing parallels to post-9/11 counter-terror actions. By targeting groups like Jaish-e-Mohammed and Lashkar-e-Taiba, India positions itself as a responsible global actor in the fight against terrorism.
- **Showcasing Military Superiority:** India demonstrated its technological and strategic edge, successfully destroying Pakistani drones and airbases using precision missile strikes and advanced air defence systems. Deep strikes on key targets in Pakistan exposed vulnerabilities and reaffirmed India's military superiority.
- **Global Messaging: "This is Not the Era of Terrorism":** To counter narratives of aggression, PM Modi adapted his signature line: "This is not the era of war" to "This is also not the era of terrorism." He called for global unity and zero tolerance towards terrorism, reinforcing India's commitment to peace and security.
- **Firm Red Lines on Pakistan Dialogue:** India reiterated its clear position:
 - No dialogue with Pakistan unless the discussion is strictly on terrorism or Pakistan-occupied Kashmir (PoK).
 - Terror and talks, including trade and water sharing, cannot go hand in hand.

Key Concerns

- **Escalation Risks and Destabilization:** Striking deep into Pakistan increases risk of uncontrolled escalation between nuclear powers, especially during tense periods with chances of miscalculation or misjudgment.
- **Transparency and Democratic Oversight:** Critics highlight lack of transparency, absence of parliamentary debate, and unclear objectives, calling for democratic scrutiny over major military operations and doctrinal shifts.
- **Over Reliance on Military Solutions:** Focus on military retaliation may ignore terrorism's root causes, undermining long-term peace efforts, dialogue, and political solutions needed for lasting conflict resolution.

- **Copying Foreign Models:** Doctrine mirrors Israeli strategy, which may not suit India's unique context; critics warn of unintended consequences, including diplomatic backlash and humanitarian concerns.

India's strategic future post-Operation Sindoor requires clear response thresholds, controlled escalation, and repeatable, tech-driven actions. Strengthening jointness, economic levers, and global partnerships is key. A codified doctrine, narrative control, and civil-military synergy will ensure India remains assertive, responsible, and resilient in an evolving security environment.

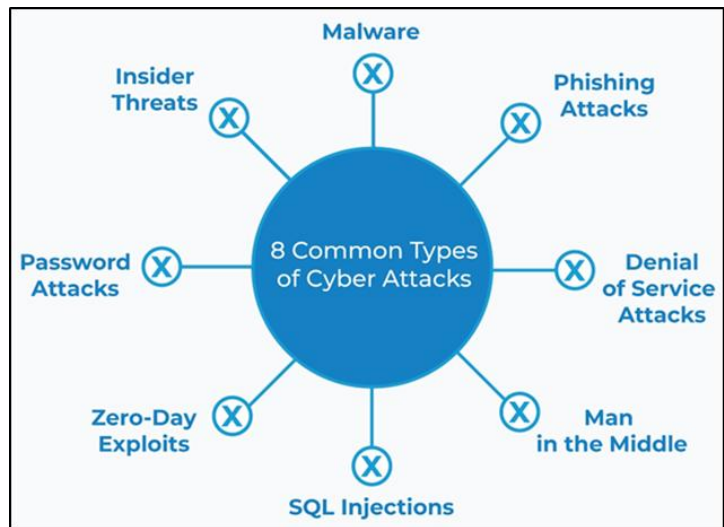
Cyber Security

Cyber Crimes

Context: According to the 2023-24 annual report of the Department of Personnel Training (DoPT), a crucial defence unit was affected by a ransomware attack in 2023.

About Cybersecurity

- **Cyberspace** refers to the digital environment where computers, networks, and data storage systems exist and interact. It includes everything connected to the internet and includes the virtual space where digital communication occurs.
- **Cyber threats** include malicious activities aimed at disrupting, damaging, or gaining unauthorized access to these systems and information within cyberspace.
- **Cybersecurity** involves practices, technologies, and processes designed to protect computer systems, networks, and data from unauthorized access, cyber-attacks, damage, or theft.



Need of Cyber Security in India

- **Rapid Digitization:** As of March 2025, India had over 969 million internet users, reflecting its fast-paced digital transformation. With increased use of eCommerce and FinTech, cyber threats have expanded, making cybersecurity more critical than ever.
- **Rising Cyber Attacks:** In 2024, India recorded an average of 2,807 cyberattacks per week, a 33% rise from 2023. At least 700 people fall for cyber frauds per day in Delhi alone.
- **Economic Impact:** Cyber incidents can cause heavy financial and reputational damage. A 2024 report pegged the average cost of a data breach in India at Rs 19.5 crore.
- **Securing Critical Infrastructure:** Key systems like power grids, hospitals, and transport networks need strong protection. The 2023 ransomware attack on Mumbai's power grid highlighted this urgent need.
- **Personal Data Protection:** Sensitive data like Aadhaar and credit card numbers are increasingly at risk. In 2023, Personal information of approximately 81.5 crore Indians leaked on the dark web.
- **Threats from New Technologies:** Emerging tools like AI and IoT bring new risks. Deepfake videos went viral during Operation Sindoor, falsely showing the Pakistani PM admitting defeat. Such misinformation can mislead the public and create geopolitical tension.
- **Evolving Nature of Threats:** Cybercriminals are using more innovative and inventive techniques to exploit vulnerabilities. E.g. **Ransomware-as-a-Service (RaaS)**- "rent" ransomware tools to non-technical users

Mechanisms of Cyber Security in India

- **Legal Framework for Cyber Security in India**
 - **IT Act 2000:** Provide the legal framework for cyber security in India, defines cybercrimes, penalties, and procedures for investigation and prosecution.

- **National Cybersecurity Policy 2013:** Outlines the framework for ensuring the security and integrity of India's cyber space.
- **National Digital Communication Policy 2018:** Aims to ensure the sovereignty and security of digital communications in India.
- **Digital Personal Data Protection Act, 2023:** Protects data privacy by mandating user consent, limiting data collection, ensuring accountability for breaches, and enforcing security standards. It also restricts personal data transfers.
- **Institutional Framework for Cyber Security in India**
 - **India's Computer Emergency Response Team (CERT-in):** Responding to cyber security incidents and providing guidance on best practices.
 - **National Critical Information Infrastructure Protection Centre:** Focuses on protecting critical infrastructure from cyber threats.
 - **Indian Cyber Crime Coordination Centre (I4C):** Coordinates efforts to combat cyber-crimes across various law enforcement agencies.
 - **Cyber Swachta Kendra:** To promote cyber hygiene and awareness among citizens.
- **Recent Initiatives for Cyber Security in India**
 - **Operation Chakra:** Conducted by the Central Bureau of Investigation (CBI), this operation targeted cyber-enabled crime networks.
 - **Cyber Surakshit Bharat (CSB):** This initiative by the Ministry of Electronics and Information Technology (MeitY) aims to spread awareness about cyber-crimes.
 - **KAVACH-2023:** A national-level hackathon that identifies innovative ideas to enhance cyber security.

Challenges to Cyber Security in India

- **Weak Law Enforcement:** India's cybersecurity framework is scattered, with poor coordination and weak implementation. The IT Act lacks clarity. From 2020–2022, out of 1.67 lakh registered cybercrime cases, only 2,706 (1.6%) led to convictions.
- **Understaffed Police Units:** For example, Delhi's 15 cyber crime police stations, with only **700 personnel, had to handle over one lakh cases last year**, highlighting the severe manpower shortage.
- **Shortage of Experts:** Despite being the second-largest internet user base, India faces a 30% shortage in skilled cybersecurity professionals.
- **Borderless Threats:** Cybercriminals operate globally, making tracking and legal action difficult. Nearly 45% of India's cyber crimes originate from Southeast Asian countries like Cambodia, Myanmar, and Laos.
- **Sophisticated Attacks (APTs):** **Advanced persistent threats which are** long-term, targeted cyberattacks, such as the 2021 China-linked breach of India's power sector, are becoming more common.
- **Device Diversity:** A wide range of devices (PCs, phones, IoT) with different security standards makes uniform protection difficult.
- **Police Unawareness:** Many local police units lack the training to handle complex cybercrime cases effectively.

Moving forward, it is important to enhance information sharing and coordination among key agencies like DRDO, NTRO, CERT-In, RAW, and IB to effectively combat cyber threats. Embracing a Public-Private Partnership (PPP) model for cybersecurity can safeguard critical information infrastructure within the private sector.

Money Laundering and Prevention

Prevention of Money Laundering Act (PMLA), 2002

Context: Recently, the Supreme Court curbed the Directorate of Enforcement (ED) power to arrest under the Prevention of Money Laundering Act (PMLA).

About Prevention of Money Laundering Act (PMLA), 2002

- The PMLA is a significant legislative framework in India aimed at combating money laundering and related financial crimes. The Act came into force on July 1, 2005, following its assent on January 17, 2003.

- The PMLA establishes the legal basis for the confiscation of property derived from money laundering activities and imposes obligations on various entities to prevent such crimes.

Key Provisions

- **Definition of Money Laundering:** The Act defines money laundering as engaging in or assisting with activities related to the proceeds of crime. This includes any process that involves the concealment, possession, acquisition, use, projection, or claiming of proceeds from criminal activities as legitimate.
- **Proceeds of Crime:** The Act specifies that "proceeds of crime" include any property derived or obtained, directly or indirectly, as a result of criminal activity related to scheduled offenses.
- **Powers of the Enforcement Directorate (ED):** The ED is empowered to conduct investigations, make arrests, and seize assets related to money laundering offenses. The Act grants the ED significant authority to ensure compliance and enforce the provisions of the PMLA.
- **Reporting Obligations:** Financial institutions, banks, and intermediaries are mandated to verify the identity of clients, maintain transaction records, and report suspicious transactions to the Financial Intelligence Unit - India (FIU-IND).
- **Adjudicating Authority and Appellate Tribunal:** The Act establishes an Adjudicating Authority to handle cases related to money laundering and an Appellate Tribunal for appeals against the orders of the Adjudicating Authority.
- **Attachment of Property:** The Act allows for the attachment of property believed to be involved in money laundering activities. This includes a prohibition on the transfer, conversion, or movement of such property.
- **Penalties:** The PMLA prescribes stringent penalties for offenses related to money laundering, including rigorous imprisonment for a minimum term of three years and this may extend up to seven years along with a fine of up to Rs 500,000.
- **Maintenance of Records:** Reporting entities are required to maintain records of all transactions for a minimum of five years, ensuring that relevant information is available for investigation.

Key Amendments in PMLA

- **2009 Amendment:** Added IPC Section 120B (criminal conspiracy) to PMLA schedule, allowing ED to act in conspiracy cases even if the main offence isn't listed. Gave ED international jurisdiction to trace laundered money.
- **2012 Amendment:** Moved the Prevention of Corruption Act to Part A of the PMLA schedule, imposing stricter bail norms. Part A includes serious crimes like corruption, terrorism, drug trafficking, and IT Act violations.

Concerns regarding PMLA

- **Deviation from Original Purpose:** The PMLA was initially aimed at combating the laundering of drug money. However, it now includes a wide range of offences unrelated to drug trafficking, which are either ordinary offences listed in the IPC or for which there are special laws in force like Prevention of Corruption Act.
- **Undermining Rights:** The ED's non-disclosure of Enforcement Case Information Reports (ECIR) denies the accused their right to be informed of charges, affecting their right to life and liberty. Treating minor crimes with the same severity as serious offenses violates the fundamental right to equality.
- **Potential for Misuse:** There are worries about the potential misuse of the PMLA by authorities for political or personal vendettas. The broad powers granted to enforcement agencies can be exploited, leading to arbitrary actions against individuals and entities.
- **Presumption of Guilt:** Unlike the fundamental principle of "innocent until proven guilty," the PMLA requires the accused to prove their innocence to secure bail. The bail provision under Section 45 is stringent, which says that a judge can give bail only when he is satisfied that the accused is innocent, making it difficult for accused individuals to secure bail, leading to prolonged detention without trial.
- **Federalism Concerns:** The Act allows the ED to investigate without state consent, unlike other central agencies like the CBI. This undermines the federal principles and the Basic Structure Doctrine of the Constitution.

- **Expanded Definition:** The PMLA (Amendment) Act, 2012 has enlarged the definition of money laundering by including activities such as concealment, acquisition, possession and use of proceeds of crime as criminal activities. The Act gives enough room to punish a person for merely possessing proceeds of a crime, even if they are paltry.

Related Cases

- **Pavana Dibbur v. ED (2023):** The Supreme Court highlighted procedural violations and misuse of the PMLA, stressing the need for strict adherence to legal standards by the Enforcement Directorate and other authorities.
- **Vijay Madanlal Choudhary v. Union of India (2022):** The Supreme Court affirmed that the stringent bail provisions are reasonable and align directly with the objectives of the PMLA Act. It also upheld the constitutionality of the PMLA.
- **ED v. V.C. Mohan:** The Supreme Court overturned a Telangana High Court decision granting anticipatory bail, emphasizing that bail under the PMLA should be assessed based on its specific provisions, not as ordinary offenses under the IPC.
- **Pankaj Bansal v. Union of India:** The Supreme Court ruled that non-compliance with mandatory requirements during arrests could render such arrests illegal, emphasizing the need for transparency and adherence to legal protocols

The PMLA has been amended to include various offenses beyond drug-related money laundering, raising concerns about deviations from its original intent. This evolution reflects the complexities of addressing money laundering while striving to maintain fairness and justice.

Role of Media and Social Media on Security

Hoax Bomb Threats on Social Media

Context: The Ministry of Electronics and Information Technology (MeitY) has issued an advisory urging social media platforms to take greater responsibility in curbing threats against flights operating from India.

What is Social Media?

- Social media refers to **websites and applications that enable users to communicate**, share photos, videos, and other content online, fostering real-time interaction and community engagement.
- Major platforms include **Facebook, X, Instagram, WhatsApp**, and YouTube, each serving as a hub for personal, professional, and community networking.

Negative Implications of Social Media on the Security of India

- **Spread of Misinformation and Fake News:** Social media platforms in India have facilitated the rapid dissemination of misinformation and fake news, often leading to public unrest, communal tensions, and even violence. Notable incidents, such as the **WhatsApp lynchings in 2017-2020**, underscore how false narratives can escalate into real-world harm.
- **Radicalization and Extremism:** Terror groups use platforms like Telegram to spread extremist ideas and recruit youth. In Kerala, around 40-50 youths were radicalized online and joined ISIS, highlighting the security threat.
- **Cybercrime and Data Security:** Social media has led to more cybercrimes like fraud, identity theft, and phishing. Deepfake videos make scams harder to detect. In 2024, a total of 2,92,800 cyber fraud incidents were reported in India, resulting in a loss of ₹2,054.6 crore
- **Election Interference and Political Manipulation:** Digital platforms are used to spread fake news during elections to influence voters. For example, Meta, which owns WhatsApp and Facebook, approved 14 AI-generated electoral ads with hate language during 2024 LS election campaigns.
- **Challenges for Law Enforcement:** Encrypted apps like WhatsApp and Signal make it hard for police to trace messages or catch criminals. This limits efforts to stop terrorism, crime, and illegal content online. A gang of 11 robbers in Odisha avoided detection for a year by using WhatsApp calls, blocking access to call records.

- **National Security Risks:** Foreign actors use social media to spread false information and disturb peace in India. Deepfakes and online campaigns can influence public perception and threaten national stability. After Operation Sindoor, social media platforms in India saw a deluge of fake posts, videos, and images pushed by Pakistan.

Measures Taken at Various Levels

- **Information Technology Act, 2000:** Provides powers to block unlawful content and mandates platforms to assist in investigations.
- **IT Rules, 2021 (Intermediary Guidelines):** Obligates platforms to identify the “first originator” of messages. Mandates quick takedown of flagged content (within 36 hours).
- **Indian Cyber Crime Coordination Centre (I4C):** Enhances coordination among law enforcement agencies.
- **CERT-In (Computer Emergency Response Team):** Tracks cyber threats and provides early warnings.
- **National Technical Research Organisation (NTRO):** Conducts technical surveillance of cyber threats.
- **Awareness Campaigns:** Government initiatives like Cyber Surakshit Bharat and Digital Literacy Campaigns help people identify and report threats.

To safeguard national security, India must strike a balance between freedom of expression and regulation, backed by digital awareness, strong laws, and responsible tech practices.



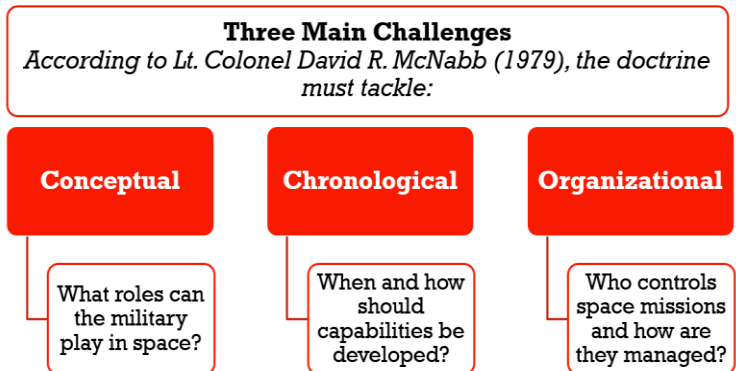
Security Forces

India Working on Military Space Doctrine

Context: CDS Gen. Anil Chauhan said India will release its Military Space Doctrine in 2–3 months to strengthen space-based defence preparedness.

What is the Military Space Doctrine?

- Military Space Doctrine refers to the official guiding principles and strategies that direct how a country’s military plans and carries out operations in outer space.
- Just as airpower once transformed warfare, space is now being recognized as a vital new domain for national defense and global security.



Key Components of Military Space Doctrine

Strategic Vision and Purpose	Defines the role of space in national defence. Aims to ensure security, avoid surprise attacks, and maintain freedom of space operations.
Types of Space Missions	• Force Enhancement: Improves communication, navigation, and surveillance for all forces. • Space Support: Manages launch and maintenance of satellites. • Space Defence: Protects space assets (e.g., ASAT weapons).

	• Space Situational Awareness: Tracks threats and objects in orbit.
Organisational Structure	Sets up dedicated agencies and coordination systems for military space operations.
Technological Capabilities	Develops advanced space tools such as: • Secure satellite networks • High-resolution surveillance • Cyber and electronic warfare tools • Anti-satellite weapons

Need for a Space Security Doctrine

Space is no longer used only for peaceful purposes like communication and weather tracking. It is increasingly being used for military activities.

- **Space as a New Battlefield:** NATO officially recognised space as its fifth operational domain in 2019, alongside land, air, sea, and cyber. Countries like the US and Russia have created special space forces and written strategies (doctrines) to maintain space dominance.
- **Lack of Global Agreement:** Efforts to form rules for peaceful and responsible use of space have failed. For example, a 2023 UN Working Group, focused on the non-militarization of space failed to reach a consensus, showing growing mistrust among major countries.
- **India's Geopolitical Risks:** India faces risks from neighbours like China and Pakistan. China is rapidly expanding its space activities under projects like the "Space Silk Road." The Chinese military has also added special divisions for space and cyber warfare, raising security concerns for India.
- **Emerging Threats:** New threats include orbital attacks, electronic warfare, and cyberattacks on satellites. India needs secure and strong space-based systems to face such dangers.
- **Need for Institutional Framework:** As India's space activities grow, there must be coordination between civil, commercial, and military uses of space. A formal Space Security Doctrine will provide structure and direction to all space-related defence efforts.

India's Key Developments in Space Security

1. Commitment to International Space Norms: India follows major global space treaties, ensuring responsible use of outer space:

- **Outer Space Treaty (1967):** Prohibits placing weapons in space.
- **Rescue Agreement (1968):** Ensures astronaut safety.
- **Liability Convention (1972):** Holds countries liable for space damage.
- **Registration Convention (1974):** Mandates registering space objects.
- **Moon Agreement (1979):** Encourages peaceful use of the Moon and celestial bodies.

India is a member of the Inter-Agency Space Debris Coordination Committee (IADC) and follows the 2008 Debris Mitigation Guidelines to reduce space junk.

2. Institutional and Strategic Developments

- **Integrated Space Cell (2010):** Established to coordinate space efforts between the Department of Space and the Indian Armed Forces.
- **GSAT-9 (South Asia Satellite) (2017):** Used space diplomacy to strengthen regional ties (excluding Pakistan), showcasing India's leadership in the region.
- **Defence Space Agency (DSA) (2018):** Formed to deal with space-based military threats. Key roles:
 - Drafting India's Military Space Doctrine.
 - Creating a unified satellite communication system.
 - Identifying and countering threats from both state and non-state actors.
- **ASAT Test (Mission Shakti) (2019):** India demonstrated its anti-satellite capability, becoming the fourth country (after the US, Russia, and China) with such power.

3. Policy and Private Sector Involvement

- **Indian Space Policy (ISP) (2023):** Though it mentions national security only briefly, it opened the door for greater private sector participation. Key agencies created under ISP:
 - **ISRO:** Continues its focus on research and development.
 - **InSPACe:** Regulates and promotes private space activities.
 - **NewSpace India Limited (NSIL):** Handles the commercial use of ISRO's technology.
 - **Department of Space:** Overall coordination and governance.

4. Modern Defence Infrastructure

- **52-Satellite ISR Constellation (Approved):** A planned group of 52 satellites for Intelligence, Surveillance, and Reconnaissance (ISR).
 - 31 satellites to be built by private firms.
 - To be developed in partnership with ISRO.
 - Aims to close operational gaps and enhance readiness for future space threats.

India's journey towards becoming a space-ready military power reflects its strategic vision to safeguard national interests in an increasingly contested space environment. By developing clear doctrines, encouraging private sector participation, and integrating civil and defence capabilities, India is building a resilient and future-ready space architecture. These efforts not only strengthen national security but also position India as a responsible and capable space power on the global stage.