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JUNE 2024 TO
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What is it?

The Quarterly Revision document is a curated document designed to reinforce the learning and revision process for your Civil Services Examination preparation.

The document gathers all the insightful articles covered in our latest three Monthly Current Affairs magazines, providing you with a comprehensive but precise resource to revisit the pivotal topics.

Who is it for?

The aspirants preparing for the Civil Services Examination have diverse backgrounds, age groups, work and familial engagements.

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Brief Background: Each article has a brief background that sets the stage for understanding and analysis.



Analysis and Key Information: These sections provide you with critical perspectives and multifaceted viewpoints and facts.



Test Your Learning: A set of 5 MCQs and 2 descriptive questions for each section, allowing you to assess your understanding and also to aid effective retention of key concepts/facts.

We sincerely hope that the Quarterly Document will act as a catalyst for your continuous learning. Complimenting it with PT 365 and Mains 365, will significantly boost your confidence in the preparation journey.

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**All the Best,
Current Affairs Team,
Vision IAS**

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POLITY



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1.1. INDIAN CONSTITUTION, PROVISIONS AND BASIC STRUCTURE

1.1.1. Coalition Government



CONTEXT

Recently concluded 2024 General Elections of Lok Sabha resulted in formation of a coalition government at the centre as no political party got a clear majority in the Lower House of the Parliament.

ANALYSIS



Significance of Coalition Government

- ▶ **Broader representation** of interests and regions, promoting more inclusive policies and programs.
- ▶ **Coalition partners provide checks and balances**, reducing risks of authoritarianism and hasty policy decisions.
- ▶ **Foster consensus building** through negotiation, leading to widely accepted policies.
- ▶ **Encourage vibrant debates in Lok Sabha** and increase accountability of government.
- ▶ **Enhance states' bargaining power** and promote decentralized governance (Cooperative federalism)

Challenges due to Coalition Government

- ▶ **Political instability:** Divergent interests of coalition partners lead to frequent disagreements, e.g., Fall of the first NDA government in 1998.
- ▶ **Policy paralysis:** E.g., Left parties withdrawing support from UPA-I over the Indo-US nuclear deal in 2008.
- ▶ **Myopic decision-making:** Frequent changes in HRD Ministry (2004-2014) caused inconsistent education policies.
- ▶ **Compromise on ideologies:** Parties may dilute core ideologies to maintain coalitions.
- ▶ **Regionalism:** Regional parties push for state-specific benefits and resource allocation.
- ▶ **Influence on foreign policy:** E.g., Stalled Teesta Water Agreement in 2011.

Way Forward

- ▶ **Political stability:** Amend legislative rules to adopt a constructive vote of no confidence (NCRWC).
- ▶ **Election of Prime Minister:** Provide for a mechanism for election of Leader of Lok Sabha, along with election of Speaker, under Rules of Procedure who may be appointed as Prime Minister. (NCRWC)
- ▶ **Transparency in functioning of coalition:** Mandate public reporting on Common Minimum Program and introduce "coalition impact assessments."
- ▶ **Long-term policies:** Use of constitutional bodies like Inter-State Council and non-partisan bodies like NITI Aayog in national policy formulation that transcends coalition politics.



Read From Essential Material

Chapter 8th, 'Politics in India since Independence' of class XII NCERT

BRIEF BACKGROUND

About Coalition Government

- ▶ Refers to a **political arrangement** where **multiple parties collaborate to form a government** when **no single party secures a clear majority** in the legislature.
- ▶ **Factors contributing for Coalition Government in India:** Multi-party system, regional diversity and rise of state parties, anti-incumbency factors, etc.
- ▶ It can form through **two main routes:** Pre-election alliances and Post-election coalitions

Coalition governments in India

1977: First coalition government (Janta Government) at Union level.

1989: Start of era of coalition politics (almost 25 years).

1999-2004: NDA became first coalition government to completed 5 year term.

2024: Re-emergence of coalition politics at Centre.

1.1.2. Internal Emergency



CONTEXT

The year 2024 marks the beginning of 50th year since imposition of internal Emergency on June 25, 1975.

ANALYSIS



Reasons for imposing Internal Emergency (1975-77)

- ▶ **Economic context:** Prices increased by 23% in 1973 and 30% in 1974, caused hardship to people.
- ▶ **Students' protests in Gujarat and Bihar:** Impact politics of two States and national politics.
- ▶ **Conflict with Judiciary:** Government and ruling party had many differences with judiciary like appointment of Justice A. N. Ray as CJI.

Implications/Criticism of imposing Internal Emergency (1975-77)

- ▶ **Political Impact**
 - ▷ **Suspension of Civil Liberties:** Government gets power to curtail/restrict all or any of FRs during emergency.
 - ◊ Newspapers were subjected to pre-censorship. Press Council was abolished, and many journalists, activists were imprisoned.
 - ▷ **Centralization of power:** Practically suspended federal distribution of powers and all powers are concentrated in hands of union government (PM Office). Thus, altering legislative power of states.
 - ◊ **42nd CAA, 1976** extended duration of Lok Sabha from five to six years.
 - ▷ **Crackdown on Dissent:** Opposition leaders were arrested without trial under laws like Maintenance of Internal Security Act, 1971 (MISA).
- ▶ **Social Impact:**
 - ▷ **Misuse of Power:** There was widespread torture, custodial deaths, authoritative slum clearance drives without adequate resettlement plans, displacing thousands of people.
 - ▷ **Impact on organisations:** Religious and cultural organizations like Rashtriya Swayamsevak Sangh, etc. were **banned on apprehension of disturbance to social and communal harmony.**
 - ▷ **Forced Sterilizations:** Push for population control and family planning intersected with citizens' rights to personal autonomy and reproductive freedom.
- ▶ **Institutional Impact:**
 - ▷ **Judicial Independence:** It was compromised, with judges who were perceived as unsupportive of government being transferred or side-lined.
 - ◊ Government introduced **42nd CAA, 1976** aimed at limiting scope of judicial review.
- ▶ **Erosion of trust:** Arbitrary use of powers during Emergency eroded citizens' trust in governmental institutions.



Read From Essential Material

Chapter 6th, 'Politics in India since Independence' of class XII NCERT

BRIEF BACKGROUND

Types of Emergencies

National Emergency (Article 352)

President's Rule (State or Constitutional Emergency) (Article 356)

Financial Emergency (Article 360).

Procedure of Proclamation of Emergency

- ▶ **Approval:**
 - ▷ It must be **approved by both houses of Parliament within one month** from date of its issue.
 - ▷ If approved by both houses, **Emergency continues for 6 months** and can be **extended to an indefinite period** with an approval of the Parliament for every six months. (44th Amendment Act 1978)
 - ◊ If **dissolution of Lok Sabha** takes place **during period of six months** without approving further continuation of the emergency, then **proclamation survives until 30 days from first sitting** of Lok Sabha after its reconstitution, provided Rajya Sabha in the meantime approved its continuation.
 - ▷ Every resolution approving the proclamation of emergency, or its continuance must be passed by **either House of Parliament by a special majority.** (44th Amendment Act 1978)
- ▶ **Revocation**
 - ▷ Revoked by **President at any time by a subsequent proclamation.** Such proclamation does **not require parliamentary approval.**
 - ▷ Resolution for disapproval of continuation of National Emergency is required to be **passed by Lok Sabha by simple majority.**

Changes brought after Internal Emergency through 44th Amendment Act, 1978

- ▶ **Written approval:** Emergency can be proclaimed **only on basis of written advice** by Cabinet to President.
- ▶ **Fundamental Rights (FRs):** Restricted scope of Article 359 i.e. Right to protection in respect of conviction for offences (Article 20) and right to life and personal liberty (Article 21) **remain enforceable during emergency.**
 - ▷ It **omitted right to property as a FR** and made it a **constitutional right under Article 300A.**
- ▶ **Term of Lok Sabha:** Back to **5 years** from 6 years by amending Articles 83 and 172.
- ▶ **Removal of Article 275A:** It dealt with power Government of India to deploy any armed force of Union or any other force to deal with any grave situation of law and order in any State.
- ▶ **Judicial review:** All doubts and disputes arising out of or in connection with **election of a President or Vice-President** shall be inquired into and **decided by Supreme Court.**

Conclusion

- ▶ The suppression of dissent and curtailment of civil liberties during Emergency underscore citizens' role in safeguarding democracy. Further, there is need to strengthen checks and balances within democratic framework to prevent concentration of power and uphold democratic principles.

1.1.3. Sub-classification of Schedules Castes (SC)



CONTEXT

Recently, a 7-Judge Constitutional Bench of SC, in **State of Punjab & Others v Davinder Singh & Others case**, held that **sub-classification of SCs is permissible** to grant separate quotas for more backwards within SC categories.

- ▶ Previously, in 2014, SC in **Davinder Singh v. State of Punjab** referred appeal to reconsider judgment in **E.V. Chinnaiiah Case (2004)** to a 5-judge Constitution Bench.
 - ▷ In 2020, a 5-Judge Constitution Bench of SC ruled that **E.V. Chinnaiiah judgement**, which prohibited sub-categorization of SCs, **requires reconsideration.**

ANALYSIS



Key highlights of Judgment

- ▶ **Sub-classification within SCs does not violate Article 341(2)** because castes are not per se included in or excluded from the List.
- ▶ **Scope of sub-classification of SCs:**
 - ▷ Objective of any form of affirmative action including sub-classification is to provide **substantive equality of opportunity** for backward classes.
 - ▷ **State can sub-classify based on inadequate representation** of certain castes. However, State must establish that the **inadequacy of representation of a caste/group is because of its backwardness.**
 - ▷ **State must collect data on inadequacy of representation** in "services of the State".
- ▶ State cannot act on its whims or political expediency and its **decision is amenable to judicial review.**
- ▶ State is **not entitled to reserve 100% of seats** available for SCs in favour of a group to exclusion of other castes in President's List.
- ▶ **SCs notified under Article 341(1)** are **heterogeneous groups** of castes, races or tribes with **varying degrees of backwardness.**
- ▶ Four of seven judges on Bench separately opined that government **should extend "creamy layer principle"** to SCs and STs.
 - ▷ **However, opinions do not constitute a direction to government to implement creamy layer concept**, as issue did not directly arise in this case.

BRIEF BACKGROUND

Important Judicial Pronouncement

- ▶ **Indra Sawhney vs. Uoi (1992):** 9-judge bench of SC emphasized that Government must exclude 'creamy layer' within OBC category from benefits of reservations.
- ▶ **E.V. Chinnaiiah vs. State of Andhra Pradesh (2004):** SC held that sub-classification of SCs amounted to tinkering with Presidential List, and was therefore, violative of Article 341(2) which exclusively vests power in Parliament.
- ▶ **Jarnail Singh vs. Lachmi Narain Gupta (2018):** SC opined that application of creamy layer concept to Articles 341 and 342 does not tinker with Presidential List.

Arguments for sub-classification	Arguments against sub-classification
<ul style="list-style-type: none"> ▶ Substantive equality: Weakest first approach to empower most marginalised among SCs and STs. ▶ Governance: Sub-classification would ensure diverse and efficient governance. ▶ Heterogeneous groups: Prevalence of diverse groups and their varied struggles and degrees of discrimination within the category of SCs. ▶ Legislative competence of Legislatures: Article 341 empowers President to designate communities as SCs, but after designation, state legislative competence is activated under Articles 246 in light of FRs enshrined under Articles 15(4) and 16(4). 	<ul style="list-style-type: none"> ▶ Unity and solidarity: Could divide SC community, weakening their collective voice and bargaining power. ▶ Purpose of reservation for SCs: Reservation as reparation for historical injustice and not for economic welfare. ▶ Stigma of caste discrimination might not fade away with economic mobility: e.g., Oxfam’s India Discrimination Report 2022 highlights caste-based discrimination in access to credit. ▶ Data limitations: Absence of credible and comprehensive caste census data of various caste groups. <ul style="list-style-type: none"> ▷ Socio Economic and Caste Census (SECC) 2011 was refused to be made public citing entire dataset is flawed and census unreliable. ▶ Potential for misuse: Apprehensions of “potential political tinkering” by parties in power in States to expand vote banks.

Conclusion

In wake of recent SC judgment, it is crucial for policymakers to engage in comprehensive dialogue with all stakeholders, including SC community representatives, legal experts, and social scientists.

In this regard, Government may constitute commission on lines of G. Rohini Commission (constituted for sub-categorization OBCs) to find a solution that addresses disparities within SC category while preserving unity and collective progress of community as a whole.

Current Affairs Quarterly Revision (June to August 2024)



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1.2. COMPARISON OF CONSTITUTIONAL FEATURES

1.2.1. India and France



CONTEXT

French President formally accepted the resignation of Prime Minister and asked him to continue running the caretaker government until the appointment of the next government.



ANALYSIS



Similarities between Constitution of India and France

- ▶ **France became a republic** from a monarchy following French Revolution.
 - ▷ India was inspired by French revolution.
- ▶ **Both countries have a written constitution** which is based on Ideals liberty, equality and fraternity outlined in French Revolution.
- ▶ Both countries have **popular sovereignty with universal adult franchise and a bicameral parliament**.
 - ▷ In France, the National Assembly members are elected for five years by direct suffrage, while Senate members are elected indirectly, renewable every three years..
- ▶ **Provision of emergency** is also enshrined in Constitution of both countries.

Contrasting Features of Constitution of India and France

Specification	India 	France 
President is Head of State	President is elected indirectly for a period of five years with no term limit .	President is elected for a term of five years by direct universal suffrage with two consecutive terms.
System of Government	Parliamentary system .	Semi-Presidential with significant powers held by President .
Prime Minister (PM) is Head of Government	<ul style="list-style-type: none"> ▶ Constitution provides for Council of Ministers (CoM) Headed by PM to aid and advise President. ▶ Strength, roles and Responsibilities of CoM is provided in Constitution. 	<ul style="list-style-type: none"> ▶ President appoints PM and members of government (on recommendation of PM). ▶ Purview, competences, responsibilities and tasks of each minister are not fixed. They are freely determined by PM and President.
Justice system	Integrated judicial system	Divides judicial authority between legal and administrative jurisdictions.
Involvement of Civil Society	No provision	Involves civil society in governance through a consultative assembly



1.2.2. India and Nepal



CONTEXT

Recently, Shri K. P. Sharma Oli was sworn in as Nepal's Prime Minister for the fourth time to lead a new coalition government.

ANALYSIS



- ▶ Since monarchy's abolition in 2008, Nepal has experienced 14 governments, highlighting its instability.
- ▶ Unlike Quasi-Federal republic of India, Nepal's 2015 constitution established it as a **federal democratic republic**. However, Constitution of both countries has **many similar features**.

Constitutional Similarities Between India and Nepal

- ▶ **Secular State:** Both protect religious freedom.
- ▶ **Fundamental Rights (FRs):** Comprehensive FRs, including socio-economic rights to Citizens.
- ▶ **Bicameral Parliament:** Executive branch is accountable to legislature.
- ▶ **Head of Government:** President is ceremonial head, while Prime Minister is real head of government.
- ▶ **Affirmative Action:** Includes provisions for marginalized groups to promote inclusivity.
- ▶ **Other Features:** Every adult citizen has right to vote, multi-party-political system, constitutional supremacy and an independent judiciary, with Supreme Court as ultimate interpreter of Constitution.

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1.3. ISSUES AND CHALLENGES PERTAINING TO THE FEDERAL STRUCTURE

1.3.1. Demand for New States



CONTEXT

Recently, June 2 marks the **ten years of formation of Telangana State**.

- Also, Bhil tribe demanded an independent tribal state i.e., Bhil Pradesh, comprising parts of Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra

ANALYSIS



Factors driving Demand for New States in post-independence India

- Linguistic diversity:** For instance, creation of Maharashtra and Gujarat in 1960.
- Regional disparities:** E.g. Demand for Vidarbha region of Maharashtra.
- Cultural identity:** For example, demand for Statehood for Bodoland region of Assam has been raised mainly on issue distinct tribal culture of region, which is different from rest of State.
- Administrative efficiency:** Smaller states are perceived to enhance governance and administrative efficiency.
 - Example: Demand of Harit Pradesh from Uttar Pradesh.

Argument in favour for creation of new states

- Effective administrative efficiency:** Efficient administration ensures resource utilization, as seen in Telangana, where paddy production rose from 4.57 million metric tonnes (mmt) in 2015 to over 20 mmt in 2023.
- Innovation:** Smaller states foster governance innovations, like Kerala's Organic Farming Mission inspired by Sikkim's success.
- Trade:** Small States like Uttarakhand, Himachal Pradesh and Goa tend to trade more than larger state like Uttar Pradesh, Madhya Pradesh etc (Economic Survey 2016-17).
- Better Development:** Regional disparities have narrowed, with Uttarakhand reducing multidimensional poverty from 17.67% in 2015-16 to 9.67% in 2021 (Multidimensional Poverty Index 2023, NITI Aayog).

Argument in against for creation of new states

- Economic Strain:** Establishing a new state's infrastructure demands substantial financial resources. For example, building infrastructure in Andhra Pradesh's capital, Amravati, is estimated to cost ₹40,000 crore.
- Resource Allocation:** Dividing resources like water and power can cause disputes, as seen in Andhra Pradesh and Telangana over Krishna River water.



Read From Essential Material

Chapter 7th, 'Indian Constitution at Work' of class XI NCERT

BRIEF BACKGROUND

Procedure for Formation of New States

- Article 3:** Provisions for formation of new States and alteration of areas, boundaries or names of existing States. As per this,
 - Power:** Parliament may by law form a new State by separating territory from any State, uniting two or more States, uniting parts of States and uniting any territory to a part of any State.
 - Presidential Recommendation:** Such Bill shall be introduced in either House of Parliament only on President's recommendation.
 - Consultation with State Legislatures:** Before recommending a Bill, which affects area, boundaries or name of any of States, President shall refer this Bill to Legislature of that State to express its view within a specified time.
- Parliament can create a new state through ordinary legislation (i.e. with simple majority).

State Reorganization Commission/ Committees

- S.K. Dhar Commission, 1948:** Recommended re-organization on basis of administrative convenience rather than linguistic factor.
- JVP Committee 1948:** Rejected language as basis for reorganization of states.
- Fazl Ali Commission, 1953:** Identified 4 factors for state reorganization i.e.
 - Preservation and strengthening of unity and security of country.
 - Linguistic and cultural homogeneity.

- ▶ **Boundary Disputes:** New state boundaries can ignite territorial conflicts, like the **Belgavi dispute between Karnataka and Maharashtra**.
- ▶ **Pandora box:** It can further lead to demand for and creation of other new states.

Way ahead

- ▶ **Development:** Steps should be taken for **equitable development** within existing states, addressing economic disparities and grievances fueling statehood demands.
- ▶ **Create Expert committee:** By **engaging all stakeholders** to investigate the demand/ impact of creation of new states.
- ▶ **Economic viability:** A new state should only be created if it can fund at least 60% of its expenses from inception.
- ▶ **Develop Clear Guidelines:** **Focussing on economic and social viability** rather than political considerations for creation of new states.

- ▶ Financial, economic and administrative considerations.
- ▶ Planning and promotion of welfare of people and nation as a whole.
- ▶ **Fazal Ali Commission** recommended for formation of **14 states and 6 UTs**.
- ▶ Parliament implemented its recommendations through **Constitution (7th Amendment) Act, 1956**.

1.3.2. Special Packages



CONTEXT

Recently, Chief Ministers of Bihar and Andhra Pradesh had demanded special financial packages for their respective States.

- ▶ Special Packages for both states Bihar and Andhra Pradesh were **announced in Union Budget 2024-25. Announcements made:**
 - ▶ **Irrigation and Flood Mitigation:** Financial support of **Rs. 11,500 crore** to projects such as the **Kosi-Mechi intra-state link** and other schemes in Bihar.
 - ▶ **Purvodaya: Vikas bhi Virasat bhi:** Plan for endowment rich states in the Eastern parts covering **Bihar, Jharkhand, West Bengal, Odisha and Andhra Pradesh** for generation of economic opportunities to attain Viksit Bharat.

ANALYSIS



Need for giving special packages to states

- ▶ **To offset fiscal shock.** E.g. Revenue grants to Andhra Pradesh after bifurcation.
- ▶ **To rebuild infrastructure,** provide relief in states impacted by natural disasters like floods, earthquakes etc. E.g. Centre released funds for Tamil Nadu in aftermath of Cyclone Michaung.
- ▶ **To channelize resources in poorer regions** of country for balanced regional development.
- ▶ **For human development.** E.g. As per Bihar government estimates, an additional 2.5 lakh crore rupees over five years are required for welfare of 94 lakh poor families.
- ▶ **To address continued revenue deficit** in several states e.g. Since 2015-16, seven states have persistently reported revenue deficit.

Issues with granting Special Packages to States

- ▶ **Fiscal prudence:** Providing special packages would potentially **increase fiscal burden** on Centre and also on other States.
- ▶ **Governance issues:** Poor state governance can lead to mismanagement and fund leakage.
- ▶ **Dependency risks:** Short-term benefits might discourage structural reforms, fostering reliance on central aid.
- ▶ **Federal issues:** Unequal distribution can strain Centre-state relations and fuel conflicts.



Read From Essential Material

Chapter 7th, 'Indian Constitution at Work' of class XI NCERT

BRIEF BACKGROUND

About Special Packages to States

- ▶ It provides additional financial assistance to states facing geographical and socio-economic challenges.
- ▶ Constitution includes provisions for specific state issues, particularly through Articles 371A to 371H, which grant special status and privileges to certain states.
- ▶ On contrary, **special packages are purely discretionary.**
 - ▶ It is an **additional grant under Article 282, which falls under 'Miscellaneous Financial Provisions'.**

- ▶ **Social Unrest:** Perception of unfair distribution of benefits might lead to social unrest and dissatisfaction among different communities in state.

Way ahead

- ▶ **Develop clear framework:** For special package allocation based on measurable criteria like poverty, infrastructure deficits etc.
- ▶ **Create Customized development plans:** To meet each state's specific needs, focusing on areas like infrastructure and employment.
- ▶ **Public-Private Partnerships:** Engaging private sector to mobilise additional funding, expertise and to reduce fiscal burden on centre.
- ▶ **Monitoring:** Enhance monitoring, plug leakages, and ensure efficient resource utilization.
- ▶ **Decentralization:** By providing greater fiscal autonomy, decision-making authority, and prioritizing spending as per local needs, it can reduce demand for special packages.
 - ▷ E.g. 14th FC recommended that Centre should intervene in schemes where there are large externalities or national priorities involved.

1.3.3. Central Bureau of Investigation (CBI)



CONTEXT

Recently, Supreme Court in **State of West Bengal v. Union of India case (2024)** upheld maintainability of West Bengal government's suit against Union over registration and investigation of cases by CBI despite revocation of its general consent in 2018.

- ▶ In suit (filed under **Article 131**), State **accused the Union of constitutional overreach and violation of federalism by unilaterally employing CBI without State's prior consent.**
 - ▷ Article 131 deals with **Supreme Court's original jurisdiction in a dispute between Centre and one or more states.**

ANALYSIS



Concerns associated with CBI

- ▶ **Vacant posts:** For instance, **total of 1709 posts are vacant in CBI** against its sanctioned strength of 7295 as of March 2023. (Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice report)
- ▶ **Lack of transparency:** Details of cases registered with CBI, progress made in their investigation are **not available in public domain.**
- ▶ **Withdrawal of Consent:** Consent of State government is a prerequisite for any investigation making its investigation dependent upon states approval (DSPE Act (Section 6)).
 - ▷ **Nine States have withdrawn general consent,** hampering investigation of cases.
- ▶ **Loss of credibility:** Criticised for its mismanagement of cases involving prominent politicians and mishandling of several sensitive cases like **Bofors scandal, Hawala scandal,** etc.
- ▶ **Administrative hurdles:** For conducting investigation on Central Government employees (Joint Secretary level and above), prior approval of Central Government is required, hindering its capacity to combat corruption at higher levels of bureaucracy.
- ▶ **Funding issues:** Inadequate investment in training, equipment, and under-utilisation of funds, adversely hampers CBI effectiveness.

BRIEF BACKGROUND

Central Bureau of Investigation (CBI)

- ▶ **Genesis:** Established in 1963 on recommendation of **Santhanam Committee** on Prevention of Corruption (1962-64).
- ▶ **Ministry:** Ministry of Personnel, Pension & Public Grievances.
- ▶ **Status:** Non-statutory and Non-constitutional body.
 - ▷ It is governed by Delhi Special Police Establishment (DSPE) Act, 1946.
- ▶ **It is premier investigating police agency** in India, which coordinates investigation on behalf of Interpol Member countries.
- ▶ **Consent of State for CBI**
 - ▷ **General:** CBI is not required to seek fresh permission every time it enters that state in connection with investigation or for every case.
 - ◊ **Section 6 of DSPE Act** empowers state government to **give or deny consent to CBI officer.**
 - ◊ Apart from West Bengal, other states like Punjab, Telangana etc. have also withdrawn their general consent.
 - ▷ **Specific:** CBI would have to apply to state government in every case.

- ▶ **Lack of autonomy:** CBI operates under **administrative control of DoPT** and government's significant role in appointing senior officials, raises concerns about agency's independence.

Way ahead

- ▶ **Recommendations of Parliamentary Standing Committee on Personnel, Public Grievances, Law And Justice**
 - ▶ **Director of CBI should monitor progress made in filling up of vacancies** on quarterly basis.
 - ▶ **Maintain a case management system** which would be a centralised database (accessible to general public) containing details of cases registered with it and progress made in their disposal.
 - ▶ **Need to enact a new law and define status, functions and powers of CBI** and lay down safeguards to ensure objectivity and impartiality in its functioning.
 - ▶ **Percentage of officers inducted through deputation** at level of Inspector of Police be **restricted to 10%** and **40% officers** may be recruited **through Direct Recruitment/Limited Departmental Competitive Examination**.
 - ▶ Publish **case statistics and annual reports** on its website.
 - ▶ **State's consent clause'** should be removed only in such cases that are considered to be a threat to nation's security and integrity.

Important Judicial Pronouncement related to CBI

- ▶ **Common Cause vs Union of India, 2019:** SC held that Central Government shall appoint CBI Director on recommendation of Committee consisting of
 - ▶ Prime Minister (Chairperson);
 - ▶ Leader of Opposition recognized as such in Lok Sabha or where there is no such Leader of Opposition, then, Leader of single largest Opposition Party in that House (Member).
 - ▶ CJI or Judge of SC nominated by CJI (Member).
- ▶ **Vineet Narain v Union of India (1997):** Commonly called the Jain Hawala Case—SC had struck down the 1969 "Single Directive" of the Union Government, a consolidated set of instructions issued to the CBI by various ministers on the modalities of initiating and registering cases.
- ▶ **CPIO CBI versus Sanjiv Chaturvedi, 2024:** Delhi HC held that Section 24 permits disclosure of information regarding allegations of human rights violations and corruption and exemption provided to scheduled organisations does not totally exempt CBI from purview of RTI Act.



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1.4. ELECTIONS IN INDIA

1.4.1. Proportional Representation

CONTEXT

Recently, experts in India have called to consider Proportional Representation (PR) for Lok Sabha and State Assembly elections instead First-Past-The-Post (FPTP) electoral system.

ANALYSIS

Difference between First-Past-The-Post (FPTP) and Proportional Representation

Parameters	FPTP (Simple majority system)	Proportional Representation (PR)
Geographical unit	Country is divided into small geographical units called constituencies or districts.	Large geographical areas are demarcated as constituencies ; entire country may be a single constituency.
Representation	Every constituency elects one representative.	More than one representative may be elected from one constituency.
Voting Process	Voter votes for a candidate.	Voter votes for party
Seat Distribution	<ul style="list-style-type: none"> ▶ A party may get more seats than votes in legislature. ▶ Winning candidate may not secure majority (50%+1) of votes. 	Every party gets seats in legislature in proportion to percentage of votes it receives.
Examples	U.S., U.K., Canada, India (Lok Sabha and State Legislative Assemblies).	Israel, Netherlands.
Benefits	<ul style="list-style-type: none"> ▶ Simple to understand. ▶ Facilitates formation of stable government. ▶ Encourages voters from different social groups to come together to win an election in a locality. 	<ul style="list-style-type: none"> ▶ Ensures representation of all parties based on their vote share. ▶ Fairer treatment of minority parties and independent candidates. ▶ Fewer votes are wasted as more people's preferences are taken into account.
Concerns	<ul style="list-style-type: none"> ▶ Over or under-representation of political parties compared to their vote share. ▶ Does not ensure due representation for minorities (small groups). 	<ul style="list-style-type: none"> ▶ Can lead to fragmented legislatures with multiple small parties. ▶ May result in coalition governments which can be less stable in parliamentary democracy.

Reasons for not adopting PR system by Constitution

- ▶ **Difficulty for voters to understand PR system** due to its complexity.
- ▶ **Unsuitability to parliamentary government** due to tendency of system to multiply political parties leading to instability in government.
- ▶ **Highly Expensive** and does not give any scope for organising by-elections.
- ▶ **Eliminates intimate contacts** between voters and representatives.
- ▶ **Increases the significance of party system** and decreases that of voter.

Read From Essential Material

Chapter 3rd, 'Indian Constitution at Work' of class XI NCERT

Current Affairs Quarterly Revision (June to August 2024)

Way ahead

- ▶ **Law commission Recommendation (170th report):** It had suggested that **25% of seats may be filled through PR system** by increasing strength of Lok Sabha.
 - ▷ Incorporating MMPR system for incremental seats or allocating at least 25% from each State/UT could alleviate apprehensions of smaller states (Meghalaya) about FPTP system dominance by larger States.
- ▶ **Increasing number of seats based on 2026 Delimitation Exercise:** Over five decades, uneven population growth **complicates LS seat allocation by population**, undermining federal principles and causing state disenchantment.

BRIEF BACKGROUND

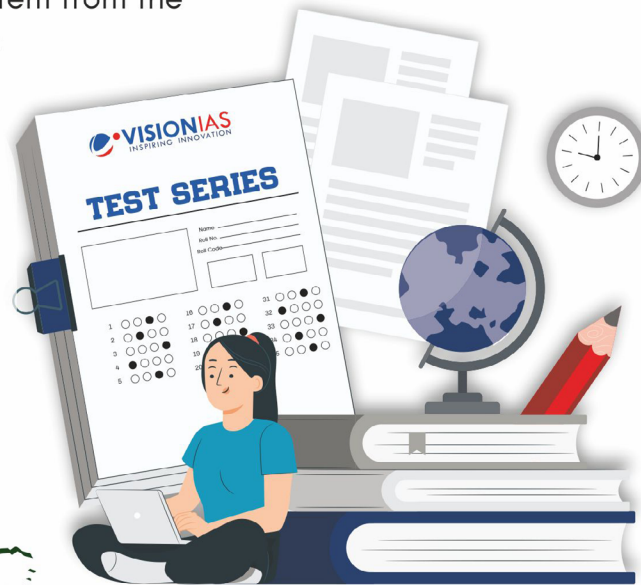
Types of Proportional Representation

- ▶ **Single Transferable Vote System:** Voter rank candidates in order of preference. Adopted for election of members to Rajya Sabha and state legislative council and for electing President and Vice- President.
- ▶ **List System:** Voters vote for party (and not individual candidates) and then parties get seats in proportion to their vote share.
- ▶ **Mixed Member Proportional Representation (MMPR):** One candidate is elected through FPTP system from each territorial constituency. There are also additional seats that are filled based on various parties' percentage of votes.

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1.5. GOVERNANCE

1.5.1. Auditing of Local Bodies



CONTEXT

Recently, International Centre for Audit of Local Governance (iCAL) was inaugurated in Rajkot, Gujarat.

ANALYSIS



About Local Self Governance and its Audit

- ▶ **73rd and 74th Constitutional Amendment Act, 1992** added Part IX (Eleventh Schedule) and IX-A (Twelfth Schedule) respectively which contains provisions on local self-governance.
 - ▷ In 2020, **Ministry of Panchayati Raj developed Audit Online application** to conduct online audit of panchayat accounts, ensure accountability in utilisation of funds at ground level.
- ▶ **Constitutional Provisions:** Article 243 G; Article 243J; Article 243 Z.
- ▶ **Current Auditing Mechanism of Local Bodies**
 - ▷ CAG's mandate for audit of Local Bodies flows from **CAG's (Duties, Powers and Conditions of Service) Act, 1971.**
 - ◊ CAG exercises **control and supervision** over proper **maintenance of accounts and auditing** for all three levels of PRIs/ULBs.
 - ▷ It is done through **Examiner of Local Fund Accounts (ELFA) or Director of Local Fund Accounts (DLFA)** in most states. It **audits utilization of funds** granted by state government to local bodies.

BRIEF BACKGROUND

About iCAL

- ▶ It is the first in country and aims to **set global standards for auditing local governance bodies.**
- ▶ It is a collaborative platform for **policymakers and auditors** and would **serve as a centre of excellence** for capacity building of auditors.
- ▶ It acts as a **knowledge centre and think-tank for addressing governance issues** at grassroots levels.

Need for iCAL in India

- ▶ **Enhance collaboration** among 2.5 lakh panchayats and 8,000 ULBs, and exchange knowledge, promote best practices etc. (CAG)
- ▶ **Aligned with Global practices** as 40 countries have their respective Supreme Audit Institutions.
- ▶ **To assist Local Governments** in achieving SDGs.
- ▶ **Foster community engagement** in addressing global challenges (climate change) in effective policy implementation.
- ▶ **Address inefficiencies in fund utilization**, as most municipalities do not use their audited financial statements for cash flow management. (RBI)

Importance of Auditing of Local Bodies

- ▶ **Financial accountability:** Safeguard public funds by detecting fraud and adherence to financial regulations.
- ▶ **Performance evaluation:** Audits serve as **critical performance evaluation tool for evaluating local bodies' performance** against established benchmarks.
- ▶ **Service delivery:** Audit findings can enhance public service delivery and strengthen grassroots democracy
- ▶ **Democratic participation:** Auditing activity **strengthens governance by increasing citizens engagement** e.g. social auditing under Mid-Day Meal Scheme.
- ▶ **Public trust:** Auditors **enhance government accountability, integrity, operations, and public confidence.**
- ▶ **Decentralisation:** Findings on devolution of functions, funds and functionaries strengthens decentralization.

Issues associated with Auditing of Local Bodies

- ▶ **Poor Record Keeping:** Local bodies' financial records are incomplete, inconsistent, and further **lack uniform auditing standards across different states and local bodies.**
- ▶ **Lack of qualified auditors:** This can lead to inadequate or superficial audits, missing critical issues.
- ▶ **Overlapping Jurisdictions:** Division of auditing responsibilities between different agencies, like state audit departments, local government auditors, and CAG can create confusion and inefficiencies.
- ▶ **Out-dated procedures:** In many states, local bodies continue using outdated formats/procedures for account maintenance, despite significant increases in their powers and responsibilities. (Eleventh FC)
- ▶ **Low Awareness** of audit processes and their significance.

Way ahead (2nd ARC Recommendations)

- ▶ **Simplified Standards:** Audit and accounting standards for Panchayats should be prepared in a simple, comprehensible manner for PRIs' elected representatives.
- ▶ **Institutional Independence:** DLFA or any auditing agency should be independent of State administration.
- ▶ **Legislative Scrutiny:** Audit reports on local bodies should be presented and discussed by a separate State Legislature committee, similar to the Public Accounts Committee.
- ▶ **Information Access:** DLFA or designated authority should have access to necessary records by incorporating suitable provisions in State Laws governing local bodies.
- ▶ **Capacity Building:** Each State should ensure local bodies have the capacity to meet accounting and auditing standards

1.5.2. Mission Karmayogi



CONTEXT

Recently, Capacity Building Commission launched in 2021, as part of National Programme for Civil Services Capacity Building (NPCSCB) - Mission Karmayogi has completed three years.

ANALYSIS



Significance of NPCSCB - Mission Karmayogi

- ▶ **Professional Growth:** Evolving roles of civil servants offer opportunities for officers to strengthen their behavioural, functional and domain competencies enhancing professional growth.
- ▶ **Uniform Training Approach:** It harmonises training standard nationwide, promoting uniform approach in regulating capacity-building through shared resources.
- ▶ **Reducing Training Cost:** Encourage Central Ministries to prioritize online courses, invest resources in co-creating learning processes, and reduce spending on foreign training.
- ▶ **Inspiring to-be Civil Servants:** Mission Karmayogi's values and ideals would inspire ethical conduct in aspiring civil servants, reducing dishonesty in Civil Services examination.
- ▶ **Ease of Doing Business:** Creating policies and delivering services conducive to economic growth.
- ▶ **Citizen-centric:** Shift from traditional rule-based governance to role-based approach will foster teamwork, and enhance service delivery.

Concerns associated with NPCSCB - Mission Karmayogi

- ▶ **Scalability:** Scaling training and capacity-building initiatives could be challenging due to 1.5 crore government officials at various levels.
- ▶ **Over-centralization:** Centralized training framework may face resistance from states, impacting implementation and desired outcomes.
- ▶ **Resistance:** Indian bureaucracy is alleged to be status-quoist, reluctant to change, thus hindering large-scale reforms.
- ▶ **Relevance to Job Functions:** Designing training modules for civil servants, tailored to address specific issues, needs, and demands of citizens poses a challenge.
 - ▷ E.g., issues faced by civil servants in Himalayan states differ significantly from those in desert areas.

Conclusion

Mission Karmayogi democratize the training process and address issues in existing system like complexity and red-tapism, silo culture etc. Further, constant evolving training programs to match needs to civil servants, cooperation with states etc. can reform civil services and empower them to deliver services effectively and efficiently.

BRIEF BACKGROUND

About NPCSCB - Mission Karmayogi

- ▶ NPCSCB aims to create a professional, well-trained and future-looking civil service that is imbued with a shared understanding of India's developmental aspirations, national programs and priorities.
- ▶ **Guiding Principles of Mission Karmayogi**
 - ▷ Shift from rule to role based training and demand-driven capacity building.
 - ▷ Establishment of unbiased systems of evaluation: Under Mission Karmayogi, there will be objective, fair and independent assessments to determine performance.
 - ▷ Democratizing and enabling continuous, lifelong learning opportunities.
 - ▷ Move beyond silos in Government
- ▶ **Integrated Government Online Training (iGOT) Karmayogi Platform:** It is a comprehensive online portal to guide government officials in their capacity building journey.

Other initiatives taken for Civil Servants

- ▶ **National Standards for Civil Service Training Institutions.**
- ▶ **Aarambh**, first ever common foundation course for civil servants training.
- ▶ **National Training Policy.**

1.5.3. Lateral Entry in Civil Services



Why in the News?

A recent UPSC advertisement for recruitment to **45 lateral entry posts of Secretary and Joint Secretary** at the Centre was withdrawn.

ANALYSIS



Advantages of lateral entry system

- ▶ **Addressing Shortfall of Officers:** Only 442 IAS officers are working with Centre, against required strength of 1,469 officers (2023-24 Demands for Grants report of DoPT).
 - ▷ Baswan Committee (2016) had supported lateral entry considering shortage of officers.
- ▶ **Increase in efficiency and governance:** Lateral entry “brings competition to established career bureaucracy” (NITI Aayog).
- ▶ **Inclusion of Domain Experts:** Hiring individuals with experience in economics, finance, and technology like robotics, Cryptocurrency, etc. could bring fresh perspective to public policy.
- ▶ **Dealing with Departmental Necessities:** Certain ministries/departments are required to work in tandem with private sector like civil aviation, environment, climate change, etc.

Issues associated with Lateral Entry

- ▶ **Short-Term Focus:** Appointments for 3 to 5 years may lead to short-term policy goals, lacking long-term vision and impact.
- ▶ **Conflict with Constitutional mandate:** Recruitment being outside purview of India’s reservation policy affects larger goal of **social justice and equity**.
 - ▷ Lateral entries have been kept out of the reservation ambit by treating each vacancy as a single post.
 - ▷ According to the 13-point roster, reservations do not apply if the number of vacancies is up to three. This system is often manipulated by advertising each department’s post individually, effectively bypassing the reservation policies.
 - ◊ **Supreme Court in Akhilesh Kumar Singh Vs Ram Dawan & Others (2015)** held that reservations to single post cadre amounts to **100% reservation** and **violates Article 16(1) and 16(4)**. Hence, it was held that the question of reservation will arise only when there is plurality of post in the cadre.
- ▶ **Conflict of Interest:** Private sector individuals may influence government decisions for profit, risking “revolving door” governance (public officers switching between public service and lobbying roles).
- ▶ **Accountability issues:** Holding private sector appointees accountable is difficult due to their short tenure.
- ▶ **Lack of grassroots-level experience:** Administrative rules require diverse experiences, not just specialized skills, and understanding local dynamics is crucial.
- ▶ **Political interference:** Political interference in Selection process may promote nepotism and favouritism.

Way forward

- ▶ **Establishing Public Administration University:** It can create a large pool of aspiring civil servants and enable serving bureaucrats to attain deep knowledge of country’s economy, increased domain expertise etc.
- ▶ **Deputation to Private Sector:** Deputation of IAS and IPS officers in private sector will bring in domain expertise and competition.
- ▶ **Institutionalize goal setting and tracking for each department:** Utilization of **Capacity Building Commission and Mission Karmayogi** to impart mid-career training aligning with role of officers.

BRIEF BACKGROUND

About Lateral Entry

- ▶ It offers recruitment to persons from **outside usual bureaucratic setup** for certain posts in government departments at mid or senior-level positions.
- ▶ It is unlike **traditional hiring system** where posts are filed based on **merit** through an exam conducted by UPSC.
- ▶ It is **different from appointment of private sector employees** for advisory roles.
 - ▷ **Example:** Appointment of **Chief Economic Advisor of India**, usually a prominent economist.
- ▶ It is **contractual employment for 3 to 5 years** (extension of tenure based on performance).
- ▶ Countries like Australia, USA, and the UK follow **both the direct entry (via exam) and lateral entry**.

Evolution of Idea of Lateral Entry in India

- ▶ **First ARC (headed by Morarji Desai), 1966:** Mooted the idea.
- ▶ **Second ARC:** Recommended for its institutionalization.
- ▶ **Parliamentary Standing Committee (headed by Shashi Tharoor) in 2016:** Recommended inclusion of eminent persons from various fields.
- ▶ **Three-year Action agenda by NITI Aayog (2017), and Report of Sectoral Group of Secretaries on Governance (2017):** Recommended induction at middle and senior management levels.
- ▶ **Lateral entry recruitments were announced in 2018.**

- ▶ **Fostering Career Management in Civil Services:** Civil Servants should be allowed for acquiring knowledge **across sectors in initial years** followed by specialised knowledge in specific domains.
- ▶ **Two-Tier entry system:** D. Subbarao (former RBI Governor) recommended a two-tier entry into IAS, first usual at 25-30 years followed by 37-42 years via lateral entry.
 - ▷ Such mid-level hiring can bring in expertise from diverse fields into civil services.

1.5.4. Citizen Participation towards Good Governance



Why in the news?

Recently, MyGov platform completed 10 years.

ANALYSIS



How Citizen Participation helps in Good Governance?

- ▶ **Accountability and Transparency:** For instance, RTI empowers citizens by providing them information to hold government officials and agencies accountable for their actions.
- ▶ **Service delivery:** For instance, community participation in evaluation of Delhi government's Mohalla Clinics improved access to quality healthcare.
- ▶ **Fosters Inclusivity:** Fosters belonging, amplifies diverse voices, and promotes equity and social justice.
 - ▷ For instance, MGNREGA Social audit helps in prioritisation of voices of poor.
- ▶ **Trust-building:** Example, Gram Sabhas fosters community trust at the grassroot level.
- ▶ **Innovation:** For instance, Mysuru- based firm has been granted a patent for their innovative solution to use plastic waste to make environment friendly interlock tiles or pavers that are stronger than cement.

BRIEF BACKGROUND

About MyGov Platform

- ▶ MyGov is a **Citizen Engagement Platform** which collaborates with multiple Government bodies/ Ministries to **engage with citizens for policy formulation and seeks opinion of people** on issues of public interest and welfare.
- ▶ **Major MyGov Campaigns**
 - ▷ **LiFE Campaign:** To engage individuals in addressing environmental degradation and climate change.
 - ▷ **Stay Safe Online:** Launched by MeitY during India's G20 presidency to **educate citizens, including specially-abled individuals, about online risks, safety measures.**

Initiatives taken to ensure Citizen Participation in Good Governance

- ▶ Swachh Bharat Mission; Digital India; 73rd and 74th Amendment Acts; Citizen's Charter etc.

Challenges associated with Citizen Participation in Good Governance

- ▶ **Lack of Commitment:** Engagement in policymaking **requires time and resources**, which are **often limited**, restricting the continuous participation of citizens.
- ▶ **Limited engagement:** Citizens **lack required knowledge and understanding of government processes**, laws, and their rights, hindering their effective participation.
- ▶ **Administrative challenges:** Governments may **lack capacity to manage large-scale participation**, including processing feedback, organizing events etc. further hampering active participation.
- ▶ **Limited trust in government:** Due to **unfulfilled promises, perceived corruption and nepotism**, and failure to consider community input on development priorities, impeding their participation.
- ▶ **Social factors:** Lack of equal access, **cultural norms and traditions like patriarchy**, may limit participation of women and other marginalized groups in governance.

Way ahead

- ▶ **Accessibility:** Release government data in a **structured and accessible format** and ensure that citizens have easy access to government information e.g. strengthening RTI Act to enhance transparency.
- ▶ **Awareness:** Incorporate **civic education into school curriculum, organizing workshops to educate citizens on their rights**, and how they can effectively engage in governance processes.
- ▶ **Digital Platforms:** Strengthening digital infrastructure, creating **user-friendly e-governance platforms** where citizens can access information, and provide feedback to facilitate citizen's participation.
- ▶ **Inclusive Policy-Making:** Organize regular public consultations, ensuring representation from diverse communities to strengthen governance processes. E.g. **strengthening public hearing component of Environmental Impact Assessment.**
- ▶ **Grievance redressal mechanisms:** Ensure that citizen **complaints are addressed promptly to build trust in governance system.**

1.5.5. Online Misinformation



CONTEXT

United Nations unveiled “Global Principles for Information Integrity: Recommendations for Multi-stakeholder Action” for curbing the spread of online misinformation, disinformation, hate speech.

ANALYSIS



What could be negative impacts of online misinformation?

- ▶ **Information Bubbles:** Algorithms create information bubbles that reinforce prejudices like racism, etc.
- ▶ **Threats to Democracy:** Misinformation misleads voters, affects election outcomes, and erodes trust in institutions and media.
- ▶ **Difficulty in Achieving SDG:** Online misinformation can worsen existing vulnerabilities in achieving the Sustainable Development Goals (SDGs).
 - ▷ For example, misinformation and coordinated disinformation campaigns undermine climate action, with activities like Green washing, etc.
- ▶ **Adverse Impact on Economy:** Create panic or unrealistic expectations in financial markets, causing unnecessary volatility and economic losses.

Challenges in tackling online misinformation

- ▶ **Rapid Digital Platforms:** Unprecedented speed of digital platforms, including AI, poses significant threats to information integrity.
- ▶ **Remoteness of Readers:** Fact-checkers are often disconnected from readers, who may be unaware of any corrections or invalidations provided.
- ▶ **Data Encryption Technologies:** Encrypted platforms like WhatsApp make it difficult to monitor and counteract misinformation.
- ▶ **Media Illiteracy and Vulnerability:** Older adults are more susceptible to misinformation online.
 - ▷ For instance, those over 65 are three to four times more likely to share false news compared to younger individuals.
- ▶ **Engaging Content:** Humorous memes, tweets, and multimedia messages are easily understood by all, including those less accustomed to text-heavy content.

Way ahead

UN’s “Global Principles for Information Integrity” provides following 5 principles for curbing online misinformation and upholding human rights such as freedom of expression:

- ▶ **Societal Trust and Resilience:** Enforce innovative digital trust and safety practices, across languages and contexts with focus on protecting vulnerable groups (women, children, etc.)
- ▶ **Healthy Incentives:** Adopt business models guided by human rights that do not depend on algorithm-driven advertising based on behavioural tracking and personal data.
- ▶ **Public Empowerment:** Technology companies should empower users to provide input on trust, safety, privacy policy, and data while ensuring interoperability and enhancing digital literacy training.
- ▶ **Independent, Free and Pluralistic Media:** States and tech companies should ensure press freedom and journalist safety.
- ▶ **Transparency and Research:** Tech companies should enhance transparency regarding data use and risk management, ensuring diverse researchers access quality data while protecting privacy

BRIEF BACKGROUND

Factors driving Spread of Misinformation

- ▶ **Clear and Simple Messages:** People are more inclined to believe and share straightforward messages.
- ▶ **Trusted Sources:** Messages from trusted sources or familiar channels are more likely to be shared.
- ▶ **Confirmation Bias:** People prefer messages that align with their pre-existing beliefs.
- ▶ **Emotional Resonance:** Messages that evoke emotions are more likely to be spread.
- ▶ **Information Vacuum:** Lack of accurate information can create space for misinformation to circulate.

Initiatives taken to tackling online misinformation

- ▶ Social Media 4 Peace by UNESCO.
- ▶ IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.
- ▶ IT Act, 2008 can be used to penalize those who spread fake news through electronic communication.
- ▶ Bharatiya Nyaya (Second) Sanhita, 2023 has provisions for fake news including through electronic means

1.6. MISCELLANEOUS

1.6.1. Centrally Sponsored Scheme (CSS)



CONTEXT

As part of the expenditure reforms, the NITI Aayog has initiated a process for revamping of Centrally Sponsored Schemes (CSSs).

ANALYSIS



Rational of CSSs

- ▶ **Principle of Subsidiarity:** Central authority should have subsidiary function, performing only those tasks which cannot be performed effectively at immediate or local level.
- ▶ **Equalization of basic services across states:** For example, Health Schemes ensure equalization of health services across states.
- ▶ **Prioritising Merit Goods:** Goods like subsidised housing or social services, which predominantly help poor or healthcare services, have a strong claim on government resources.
- ▶ **Directive Principles of State Policy:** These should guide governments at all levels and provides constitutional basis for national efforts in some areas, like education (Article 45), etc.

Issues associated with current framework of CSSs

- ▶ **Resource distribution issues:** There are many sub-schemes that receive minuscule amounts within 'umbrella' schemes.
 - ▷ **Rainfed Area Development and Climate Change Sub-scheme** has an allocation of ₹ 180 cr. whereas **National project on Agro-Forestry** has an allocation of ₹ 34 cr.
- ▶ **Existence of Large number of small schemes** or multiple small sub-components of scheme leads to duplication of efforts and a thin spreading of resources.
- ▶ **Less fiscal space for items in Union List:** Example, **Defence expenditure has reduced** from 2% of GDP in 2011-12 to 1.5% in 2019-20 RE (National Institute of Public Finance and Policy).
- ▶ **'One size fits all' approach:** Contours of CSSs are defined by Union Ministry making it **difficult to accommodate inter and intra state differences.**
- ▶ **Lower absorption capacity in some states:** States with lower GSDP unable to absorb the released funds on time due to inadequate capacity in terms of manpower, skills, technical expertise and weak governance.
- ▶ **Suboptimal monitoring:** Currently, CSSs focus more on processes (what and how to do) rather than outcomes, so monitoring is based on inputs, not actual results.

Way forward

- ▶ **Prioritising funding:** Gradually stop funding for CSSs and their sub-components that have either outlived their utility or have insignificant budgetary outlays not commensurate to a national programme (15th FC).
- ▶ **Threshold level of fundings:** According to Arvind Varma Committee in 2005, a new CSS should be introduced only if annual outlay is greater than ₹ 300 crores.
 - ▷ For existing smaller schemes, amount should be transferred to states as Normal Central Assistance.

BRIEF BACKGROUND

About CSS

- ▶ **Definition:** CSSs are Schemes that are funded jointly by centre and state and implemented through State in sectors falling in State and Concurrent Lists.
- ▶ **Features:** Current framework of CSSs is based on report by **Sub-Group of Chief Ministers on Rationalisation of CSSs (2015).**
 - ▷ Currently there are **75 CSSs in 3 categories** and they constitute around 10.4% of the Centre's budget expenditure.
- ▶ **Types of CSS**
 - ▷ **Core Scheme:** Comprise National Development Agenda (NDA). Eg: Green Revolution, Swachh Bharat Mission etc.
 - ▷ **Core of Core Scheme:** First charge on available funds for NDA. Eg: MGNREGA, National Social Assistance Programme, etc.
 - ▷ **Optional Schemes:** States are free to choose ones they wish to implement. Funds for these are allocated by Ministry of Finance. Eg: Border Area Development Programme etc.
- ▶ **Funding:** All transfers to States for CSSs are being routed through the **Consolidated Fund of the State.**
- ▶ **Monitoring:** NITI Aayog to have concurrent jurisdiction in **monitoring of CSSs and also oversee Third-Party Evaluation.**

- ▶ **Inflation indexed Funding:** Financial norms of **certain components** of schemes like **cooking cost of** midday meal should be linked to wholesale price index and should be revised every 2 years.
- ▶ **Improved Governance:** According to 15th FC, **funding pattern** of CSSs should be **fixed upfront in a transparent** manner and should be kept **stable**.

1.6.2. Surrogate Advertisements



CONTEXT

Ministry of Health and Family Welfare recently asked Sports Authority of India and BCCI to take measures to **prevent surrogate advertisement of tobacco/alcohol by sportspersons**.

ANALYSIS



Legal framework related to Surrogate advertisements

- ▶ **Cable Television Networks (Regulation) Act, 1995** with Cable Television Rules, 1994, and **Cigarettes and Other Tobacco Products Act (COTPA), 2003** banned **direct or indirect** promotion, sale or consumption of liquor, tobacco and cigarette advertisements.
- ▶ **Central Consumer Protection Authority (CCPA) Guidelines for Prevention of Misleading Advertisements and Endorsements for Misleading Advertisements, 2022** defined surrogate advertisement for first time.
- ▶ **Consumer Protection Act, 2019** defines 'misleading advertisements' as an advertisement which misleads consumers of such product or service.
- ▶ **Advertising Standards Council of India (ASCI) Code** allows use of a brand associated with restricted good to be used for advertising unrestricted goods in case it is a **genuine brand extension**.

Implications of Surrogate Advertising

- ▶ **Consumers**
 - ▷ **Undermine Consumer rights:** Results in **unfair trade practices** and **violates consumers' right to information and choice**.
 - ▷ **Undermine conscious decision-making:** Ads are formulated to sell dreams through **aspirational content** linking it with product. This **misleads vulnerable sections like youth and poor**.
- ▶ **Public Health:**
 - ▷ **Public health hazards:** An ICMR study found that surrogate **Smokeless Tobacco brands** dominated **41.3% of total advertisements in the ICC Men's Cricket World Cup 2023**.
- ▶ **Companies**
 - ▷ **Profitability vs. efficacy:** Surrogate ads improve **brand visibility and sales of prohibited products**, encouraging further use of unfair trade practices.
 - ◊ A 2019 survey claimed that over **70% consumers were influence by surrogate ads**.
 - ▷ **Digital streaming platforms, BCCI, and State Associations** see significant revenue boosts from surrogate advertisements during sports tournaments. E.g. Brands pay ₹ 60 lakh for a 10-second ad spot.
- ▶ **Ethical implications**
 - ▷ **Lack of transparency and accountability:** This encourages brands to exploit legal loopholes to promote prohibited products through advertisements.
 - ▷ **Social influence and nudge theory:** Use of 'out of sight- out of mind' marketing strategy nudges consumers to consume tobacco or alcohol products. E.g. **Celebrity endorsements**.

BRIEF BACKGROUND

About Surrogate advertisements

- ▶ They are essentially a **substitute advertisement** for goods which cannot be directly advertised due to **prohibition of law**. E.g. Tobacco products, alcohol etc.
- ▶ These advertisements in **popular sporting events** help the **brands gain recall value**, which increases sales of prohibited products.
 - ▷ E.g. **Pan masala products** contributed 16% of ad volumes during IPL 2024.

Important Judicial Pronouncements in context of Surrogate advertisements

- ▶ **TV Today Network v. Union of India (2021):** Advertisement of club soda resembling bottle of alcohol of company was seen as a surrogate advertisement. Brand was asked to broadcast an apology.
- ▶ **United Breweries Limited v. Mumbai Grahak Panchayat (2006):** Misleading claims and surrogate advertisement of alcohol were proved and discontinued with corrective advertisements.

Consumer rights linked to Surrogate advertisements

- ▶ Right to Safety; Right to be informed; Right to Choose; Right to Consumer Education

Issues in regulation of surrogate advertisements

- ▶ **Loopholes in legislations:** Weak legislations with vague definitions and conditions make them open to interpretation.
- ▶ **Unethical practices:** Concerns over potential use of unethical practices or price reduction by companies to gain market share, creating risk of even greater consumption from people.
- ▶ **Lack of stringent punishment:** Punishments are usually publishing **corrective advertisements and lack proportionate penalties.**
- ▶ **Loss of Jobs and Revenue:** As production and high taxes/cess on sin goods (e.g. liquor and tobacco) contribute significantly to job creation and state revenue.

Way forward

- ▶ **Stakeholder Consultation meeting** between Government stakeholders and ASCI highlighted steps to be taken:
 - ▷ Ensure **clear distinction** between **brand extension** and **restricted product/service** being advertised.
 - ▷ Ad should **not make any direct or indirect reference** to prohibited product.
 - ▷ Ad must **not have resemblance in presentation** with prohibited product.
- ▶ **Enhancing current regulations and closing loopholes:**
 - ▷ **COTPA and ASCI clarifications:** Define ban on surrogate advertising explicitly and extend the same to all media, events and sports sponsorships.
 - ▷ **Digital media regulations:** Digital platforms can come under purview of regular regulations—the initial focus could be on sports betting, health-centric supplements, and gym-related products.
- ▶ **Ensuring accountability:** Increase penalties and make media corporations liable through fines and promote responsible advertising practices.
- ▶ **Regulatory insight:** Ensure periodic audits, real-time vigilance and strengthening enforcement mechanisms.

1.6.3. Legislative Impact Assessment

CONTEXT

Recently, a 2-Judge bench of Supreme Court suggested a **comprehensive statutory audit** of Maharashtra Slum Areas Act and emphasized that **reviewing and assessing implementation of a statute is an integral part of Rule of Law.**

- ▶ Court’s call for a comprehensive statutory audit highlights need for **Legislative Impact Assessment** to evaluate effectiveness and consequences of enacted laws.

ANALYSIS

What are the significances of LIA in India?

- ▶ **Evidence-based Policymaking:** Thorough assessments of legislations before and after enactment can **allow policymakers to base their decisions on empirical evidence** rather than assumptions.
- ▶ **Legislative quality:** Help **prevent legal conflicts, ambiguities and enactment of cross-purpose and overlapping laws.**
 - ▷ E.g. **Overlap in jurisdictions of sectoral regulators** (TRAI, SEBI, etc.) and Competition Commission of India regarding anti-trust provisions.
- ▶ **Scrutiny of delegated legislations:** Help assess whether powers delegated to executive authorities are appropriate, well-defined, given the reduced parliamentary scrutiny of delegated legislation.
- ▶ **Responsive and responsible Governance:** LIA can provide scope for **mid-term course correction and policy revisions** to address implementation gaps effectively making administration more responsive.

BRIEF BACKGROUND

What is Legislative Impact Assessment (LIA)?

- ▶ LIA, also called Regulatory Impact Assessment, is a systematic method used to **analyze multidimensional impact of proposed and existing legislation**, focusing on both positive and negative effects.
- ▶ Essential components of LIA include **problem identification, exploring choices**, comparative analysis, stakeholder consultations, etc.

Existing Framework for LIA in India

Pre – Enactment

- ▶ **Pre-Legislative Consultation Policy, 2014:** Provides guidelines to government to place a draft version of law/ subordinate legislation in public domain prior to its enactment.
- ▶ **Sector-specific assessments:** Environmental Impact Assessments (EIA) under Environment Protection Act (1986), Social Impact Assessment for land acquisitions under Land Acquisition, Rehabilitation and Resettlement Act (2013),

- ▶ **Compliance with International Obligations:** LIA ensure that new legislations/ policies align with India's obligations under various international agreements, including those related to human rights, trade, etc.
 - ▷ e.g., in 2021, Merchandise Exports from India scheme replaced by Remission of Duties or Taxes on Export Products scheme due to its non-compliance with WTO norms.

What are the challenges in ensuring effective LIA in India?

- ▶ **Legal and institutional:** Lack of effective inter-ministerial coordination and working in silos of government departments results in fragmented and incomplete assessments.
 - ▷ **Absence of dedicated institutions:** Like UK's Better Regulation Executive to ensure that every law undergoes impact analysis.
- ▶ **Data limitations:** **Absence of comprehensive, reliable, and interoperable data** on performance of statutes/ policies/ schemes make it difficult to conduct thorough assessments.
- ▶ **Bureaucratic inertia:** **Closed bureaucratic system hinders effective coordination with stakeholders** including civil society, policy think-tanks, etc.

What can be done to ensure effective LIA in India?

- ▶ **Institutional: Dedicated agency or committee** (on lines of UK's Better Regulation Executive) under **Ministry of Law and Justice or NITI Aayog** could be set up to oversee and review LIA process.
 - ▷ Each statute creating regulator should include a provision for an **impact assessment periodically by an external agency.** (ARC-II)
 - ▷ **Regulation Review Authority** can be established for every regulatory authority, ministry to undertake regulatory impact assessment. (**Damodaran Committee, 2013**)
- ▶ **Legislative process reforms:** Mandatory referral of bills to Departmentally Related Parliamentary Standing Committees for consideration and scrutiny. (**NCRWC**)
- ▶ **Technology and Data-driven analysis:** Leverage emerging technologies and tools like data analytics, machine learning, and AI to significantly improve the accuracy and depth of LIAs.
- ▶ **Capacity building and training:** Collaboration with academic institutions, and civil society in supplementing government's capacity by providing expertise and conducting independent assessments.
 - ▷ E.g., Institutions like **National Institute of Public Finance and Policy** can partner with government ministries to conduct specialized LIAs.

- ▶ **Parliamentary procedure:** Referral of bills to standing committees, Parliamentary debates and discussions, etc.
- ▶ **Commissions and other bodies:** Analysis and drafting of laws by Law Commission, NITI Aayog, etc

Post enactment

- ▶ **Audit:** By CAG and other competent authorities.
- ▶ **Parliamentary scrutiny:** By Departmentally Related Standing Committees.
- ▶ **Others:** Social audit, assessment by think tanks such as GTRI, etc.



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1.7. TEST YOUR LEARNING

MCQs

Q.1 Consider the following statements with reference to Proclamation of Emergency

1. It must be approved by both houses of Parliament within one month from date of its issue.
2. If approved by both houses, Emergency continues for six months and can be extended to an indefinite period with an approval of the Parliament for every six months.
3. Every resolution approving the proclamation of emergency must be passed by either House of Parliament by a special majority.

Which of the statements given above is/are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Q.2 Consider the following statements with regard to Central Bureau of Investigation (CBI)

1. It is a statutory body.
2. It is governed by Delhi Special Police Establishment Act (DSPE), 1946.
3. Section 6 of DSPE Act empowers state government to give or deny consent to CBI officer.

How many of the above statements are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Q.3 Consider the following

1. S.K. Dhar Commission, 1948
2. JVP Committee, 1948
3. Fazl Ali Commission, 1953
4. Balwant Rai Mehta Committee, 1957

How many of the above is related to State Reorganization?

- a) Only One
- b) Only Two
- c) Only Three
- d) All of the above

Q. 4 Consider the following statements regarding Constitution of India and France

1. Both countries have a written constitution which is based on Ideals liberty, equality and fraternity outlined in French Revolution.
2. In France, President is elected indirectly for a period of six years.
3. Provision of emergency is enshrined in Constitution of both countries.

How many of the above statements are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Q. 5 Consider the following statements with regard to First-Past-The-Post Electoral System

1. Country is divided into small geographical units called constituencies or districts.
2. Every constituency elects one representative.

Which of the statements given above is/are correct?

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

Questions

1. Compare and contrast the constitutional features of India and France. (150 Words)
2. Highlight the reasons behind the national emergency declaration from 1975 to 1977 and discuss its consequences. Further, explain the changes introduced by 44th Amendment Act related to the proclamation of national emergency. (250 words)

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INTERNATIONAL RELATIONS



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2.1. BILATERAL RELATIONS

2.1.1. India-Bangladesh Relations



CONTEXT

Recently, Prime Minister of Bangladesh paid a state visit to India continuing the golden chapter of the bilateral relationship between the two countries.

ANALYSIS



Significance of India- Bangladesh relations

- ▶ **Important trade partners:** Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh in Asia.
- ▶ **Security and Border Management:** Both countries actively cooperate on police matters, anti-corruption activities, etc. E.g., of Defence Cooperation: **SAMPRITI and MILAN.**
- ▶ **Peaceful and cooperative border managements:** Both countries cooperate for the security of 4,096 kms.
- ▶ **Convergence for Sub-Regional Cooperations:** Engagement at multiple multilateral platforms, E.g. SAARC, BIMSTEC, BBIN (Bangladesh, Bhutan, India, Nepal), IORA.
- ▶ **Enhanced Connectivity:** E.g. Protocol on Inland Waterways Trade and Transit (PIWTT), operationalization of Agreement for the usage of Chittagong and Mongla Ports

Significance for India

- ▶ **Easier access to India's North-Eastern states.** E.g. Akhaura-Agartala cross-border rail link
- ▶ **Regional integration:** Convergence of 'Neighbourhood First', Act East Policy, SAGAR and Indo-Pacific Vision.
- ▶ **Help in India's vision for regional leadership.**

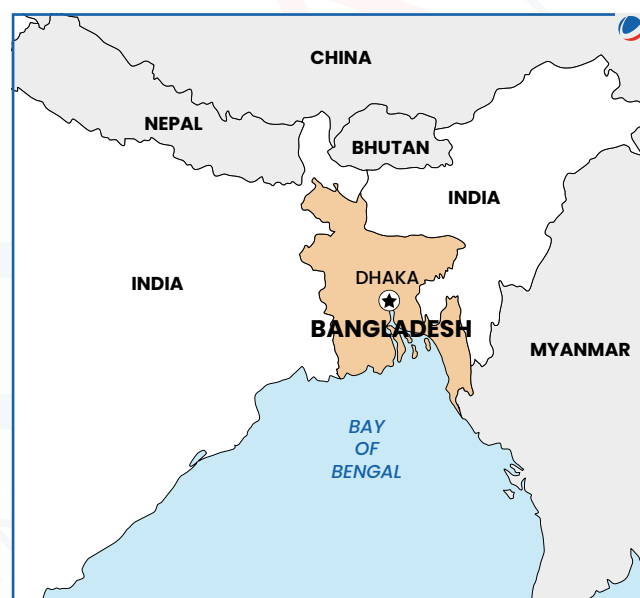
Challenges:

- ▶ **River Water Dispute:** E.g. Teesta.
- ▶ **Role of China:** China is Bangladesh's strategic partner and its largest arms supplier.
- ▶ **Internal Security Issues:** Illegal migration. E.g. Rohingyas.
- ▶ **Rising Radicalization and ill treatment** of minorities in Bangladesh.
- ▶ **Impact of India's domestic policies:** Policies like CAA and NRC may affect India-Bangladesh relations.

Steps to be taken

- ▶ **Early commencement of negotiations for CEPA**, early operationalization of SEZs (Mongla & Mirsharai) offered by Bangladesh to India.
- ▶ **Hydro diplomacy and conclusion of Water Sharing Treaty** especially Teesta.
- ▶ **Expansion of power and energy collaboration** to develop intra-regional electricity trade.
- ▶ **Acceleration of Connectivity Project** can yield 172% increase in India's exports to Bangladesh. E.g. Early operationalization

BRIEF BACKGROUND



Political Features

- ▶ **Location:** A country of South Asia, located in the delta of the Padma (Ganga) and Jamuna (Brahmaputra) rivers in the northeastern part of the Indian subcontinent.
- ▶ **Boundaries:** Malaysia; Bangladesh is bordered by the Indian states of West Bengal (west and north), Assam (north), Meghalaya (north and northeast), and Tripura and Mizoram (east). Myanmar (southeast). The southern part of Bangladesh opens into Bay of Bengal.

Geographical Features:

- ▶ **The longest:** the Jamuna – part of Brahmaputra.
- ▶ Bangladesh constitutes **two-thirds of the deltaic plain.**
- ▶ In its southern region, it's fringed by **Sundarbans.**

of the BBIN Motor Vehicle Agreement

- ▶ **India should envision Bangladesh as major anchor for regional and sub-regional integration** under the BIMSTEC, SAARC and IORA architectures and also promote common interests of **Global South**.
- ▶ **Conclusion of new Framework Agreement for Development Partnership** so as to expand reach of projects.
- ▶ **Cross border immigration management** through digitalization at grass root level.

Recent developments in India-Bangladesh Relations

- ▶ **Regional cooperation:** Bangladesh joined **Indo-Pacific Oceans Initiative**.
- ▶ **Power and Energy cooperation:** India-Bangladesh Friendship Pipeline, Maitree Super Thermal Power Plant.
- ▶ **Space Diplomacy:** Joint development of **Small Satellites** and its launch using Indian launch vehicle.
- ▶ **Medical tourism:** India announced the extension of e-Medical visa facilities to Bangladeshis.

2.1.2. Instability In India's Neighbourhood



CONTEXT

Bangladesh's Prime Minister has resigned amid mass protests.

ANALYSIS



Possible implications of recent development in Bangladesh

- ▶ **Disruption in India-Bangladesh partnership:** India has lost a trusted partner in the region (**Previous govt was friendly to India**).
- ▶ **Increase in illegal migration and forced displacement:** The rise of extremism in Bangladesh, threatening minority population, could lead to their migration to India.
- ▶ **Incursion of foreign power in Bangladesh's internal politics.**
- ▶ **Economic and investment threats:** Since 2016, India has provided **\$8 billion in credit for the development of road, rail, shipping, and port infrastructure in Bangladesh.**
 - ▷ **Threat to key projects** that include the **Akhaura-Agartala rail link** and the **Khulna-Mongla Port rail line**.

BRIEF BACKGROUND

- ▶ **An interim government** has been sworn in and it's led by **Bangladesh's only Nobel Laureate and economist who is known for founding the Grameen Bank** and pioneering the concepts of **microcredit and microfinance**.
- ▶ **South Asia's recent political upheavals**, including **unrest in Bangladesh** and instability in neighboring countries, have **significant implications for India's strategic interests and regional stability**.

India's Strategic Response to this uncertain political instability

- ▶ **Diplomatic recalibration:** Engage with new leadership while preserving strategic interests.
- ▶ **Security Measures:** Enhancing border security and intelligence capabilities to counter potential threats.
- ▶ **Multilateral Engagement:** Leverage international support to maintain regional stability. E.g., BIMSTEC.
- ▶ **Socio-economic Assistance:** Providing aid and support to alleviate humanitarian suffering; extending Line of Credit; Handle former PM's temporary asylum strategically.
- ▶ **Long term Measures:** India keeps up the policy of empowering her neighbourhood; India keeps following a non-reciprocal Neighbourhood First Policy; Develop forward-looking policies to navigate South Asian political landscape.

Way forward

- ▶ India, **being a voice of reason and a votary of international law**, has always advocated **dialogue, consultation and fairness** in her approach to **global issues in general and regional issues in particular**.
- ▶ In this regard India has **adopted the 5S principled approach:** Samman, Samvad, Sahyog, Shanti, Samridhhi.

Instability in India's Neighbourhood

- ▶ **Myanmar:** Military coup in 2021 has destabilized democracy. Sparking widespread protests and violence.
- ▶ **Sri Lanka:** In 2022, Economic crisis triggered political instability and public unrest.
- ▶ **Maldives:** Political turbulence in the Maldives - which began in 2012, when radicals forced the country's President to resign at gunpoint.
- ▶ **Nepal:** Political instability persists due to frequent government changes.

Neighbourhood instability's impact on India



Myanmar:
Its instability is leading to insurgency and refugee flows.



Afghanistan:
Safety of India's investments & security implications of a Taliban-ruled state.



Sri Lanka:
Close geographical and cultural ties between the two nations.



Maldives:
Countering radicalization, maintaining influence against Chinese inroads, protecting Indian Ocean security, and balancing diplomatic ties.



Nepal:
Frequent leadership turnover and growing Chinese influence complicates India's regional interests and relationships.

2.1.3. 10 Years Of India's Act East Policy



CONTEXT

Experts have pointed out that the recent Indian PM's visit to Singapore is about giving a fresh impetus to India's engagement with South East Asia and more broadly the vast Pacific region.

ANALYSIS



Act East policy (AEP) in Action

- ▶ **Expansion of AEP from East Asia to the Indo-Pacific:** Look East Policy solely focused on ASEAN; AEP expanded **strategic scope**, to Indo-Pacific region with ASEAN as core in extended neighbourhood.
- ▶ **Strengthening of Multilateral and Regional engagement:** Through forging closer partnership with ASEAN, BIMSTEC, Asia Cooperation Dialogue (ACD), Indian Ocean Rim Association (IORA), etc. E.g., Recent adoption of BIMSTEC Charter.
- ▶ **Growing institutional collaboration:** With the United States (US) and its allies - Japan, Australia, and South Korea. E.g. India had joined US-led the Indo Pacific Economic Framework for Prosperity (IPEF), Supply Chain Resilience Initiative (SCRI), etc.
- ▶ **India's proactive role in defence diplomacy and exports:** In 2022, Philippines became BrahMos' first export destination from India & India-Vietnam military logistics pact.
- ▶ **Energised Connectivity Programmes:** Kaladan Multi-Modal Transit Transport Project connecting India's Mizoram state with Myanmar's Sittwe Port, India-Myanmar-Thailand Trilateral Highway, Mekong-India Economic Corridor.
- ▶ **India's active Socio-cultural and developmental outreach:** 2 million diaspora strength.

BRIEF BACKGROUND

- ▶ The visit is of particular significance as 2024 marks a decade of India's **Act East Policy** which was announced by Prime Minister at the 9th East Asia Summit in 2014.

India and East Asia: From Look East to Act East Policy

- ▶ **Genesis of Look East Policy (LEP):** Post-Cold War, India lost USSR as strategic partner. Therefore LEP, initiated in the early 90s, was aimed to forge ties with US and its Southeast Asian allies, countering China's influence.
- ▶ **The Look East Policy and ASEAN:** As a forward step in the direction of operationalising the 'Look East' policy, India joined ASEAN in 1992 as a sectoral dialogue partner.
 - ▷ India became a Dialogue Partner in 1996 and a Summit-level Partner in 2002; forged a strategic partnership in 2012.
- ▶ **India's Act East Policy (AEP):** India launched India's 'Act East' policy in 2014. The policy which was originally conceived as an economic initiative, has gained political, strategic and cultural dimensions.

Key Challenges to Act East Asia Policy

- ▶ **Delay in Infrastructure Development:** Kaladan Multi-modal Project's delay have caused its budget to balloon six times.
- ▶ **Influx of refugees into India's northeast:** Led to destabilizing the borders and causing ethnic conflict in bordering states. E.g., Manipur unrest.
- ▶ **China's expanding footprint in the Indian Ocean region:** This could impact India's access to strategic maritime trade routes through the Mongla Port in Bangladesh.
- ▶ **Competing with China:** China's significant economic and political influence in East Asia can make it challenging for India to gain traction. E.g., **In 2023, the trade between China and ASEAN reached USD 911.7 billion.**
- ▶ **Expanding India's trade deficit with ASEAN:** From US\$ 7.5 billion annually when the agreement was enacted in 2011 to approximately US\$ 44 billion in 2023.

Way Forward

- ▶ **Trade:** Re-negotiation of ASEAN Trade in Goods Agreement (ATIGA) at the earliest and address the issue of widening India's trade deficit with ASEAN.
- ▶ **Infrastructure:** Enhanced connectivity through completion of pending infrastructural projects
- ▶ **Security cooperation:** Enhance maritime security cooperation in the Indian Ocean and South China Sea
- ▶ **Cultural diplomacy:** Leverage shared cultural heritage, especially with Buddhist-majority countries.
- ▶ **Multilateral engagement:** Strengthen ties with other regional powers like Japan, Australia and Taiwan.

2.1.4. India-Vietnam Relations

CONTEXT

The Prime Minister of Vietnam undertook a State visit to India.

ANALYSIS

Outcomes of the Visit include:

- ▶ **Plan of Action (2024-2028):** Plan of Action announced to implement the Comprehensive Strategic Partnership.
- ▶ **India extended a US\$ 300 million** credit line to enhance Vietnam's maritime security.
- ▶ **Cultural Cooperation:** Conserve and restore the "My Son" World Heritage Site temples.

India-Vietnam Relations

- ▶ **Strategic Partnership:** Bilateral relations between the two countries were elevated to a 'Strategic Partnership' in 2007 and a "Comprehensive Strategic Partnership" in 2016.
- ▶ **Economic Cooperation:** Bilateral trade stood at **US\$ 14.82 billion** in 2023-2024.
- ▶ **Defence Cooperation:** Includes **defence dialogues, training, exercises** (PASSEX, VINBAX, and MILAN).
- ▶ **Integration to supply chains:** Partnership with Vietnam can help India participate in building reliable, efficient and resilient regional and global supply chains.

Convergence in strategic interests



India has established strategic partnerships with Indonesia, Vietnam, Malaysia, Japan, South Korea, and Australia.



India and Taiwan have made significant strides in expanding their unofficial relationship.



India's Act East policy aligns with Japan's Free and Open Indo-Pacific, South Korea's New Southern Policy and the ASEAN Outlook on Indo-Pacific (AOIP).



India stands in solidarity with the Philippines on the South China Sea front.

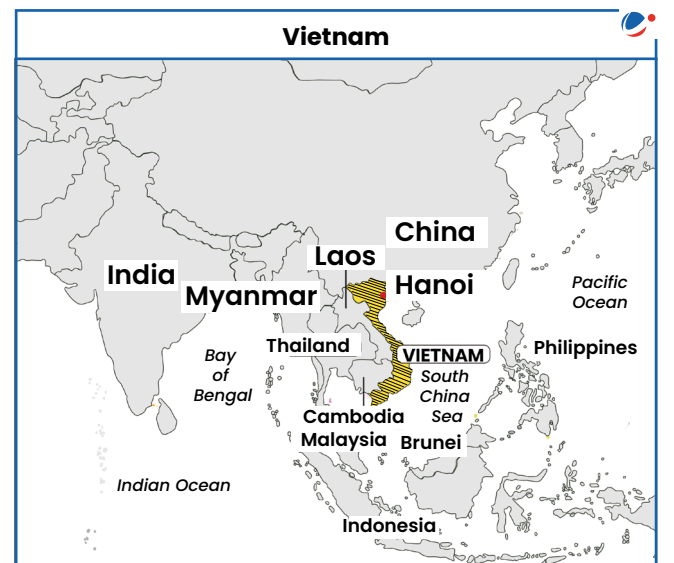


India shows strong commitment to ASEAN unity and ASEAN centrality in Indo-Pacific.



Creation of strategic and security architecture to counter China's hegemony. E.g., India supports an open, stable and prosperous Indo-Pacific.

BRIEF BACKGROUND



- ▶ **Cultural:** India and Vietnam share over 2,000 years of cultural and civilizational ties through their shared Buddhist heritage.

Significance of Vietnam for India

- ▶ **Geostrategic location:** Vietnam's position in the Indo-Pacific is crucial.
- ▶ **Countering China:** India opposes China's claim in Ladakh and Arunachal Pradesh while Vietnam has differences over Chinese claims in the South China Sea (SCS).
- ▶ **Energy security:** Indian companies have invested in oil and gas exploration projects in the Vietnamese waters in SCS.
- ▶ **Act East Policy:** Vietnam is a core partner of India in ASEAN and a critical partner in India's Act East policy and the Indo-Pacific vision.

Challenges in India-Vietnam relations

- ▶ **Balancing China:** Vietnam, like other neighbours, is cautious of provoking of China.
- ▶ **Modest trade:** With India, compared to Vietnam's trade with China (around \$100 billion).
- ▶ **Trade routing from China:** Chinese firms re-routing their supply through Vietnam.
- ▶ **Reluctance in Military Deals:** Vietnam has resisted buying the Akash surface-to-air missile.

Way ahead

- ▶ **Enhancing economic cooperation:** Promoting joint ventures, enhancing physical and digital connectivity, etc.
- ▶ **Bridging Connectivity Gap:** The India-Myanmar-Thailand trilateral highway could link up with roads like the one linking Thailand with the Vietnamese port of Da Nang.
- ▶ **Deepening Cultural cooperation:** People-to-people exchanges need to be further strengthened.

Political Features

- ▶ Occupies eastern portion of mainland Southeast Asia.
- ▶ **Land boundaries:** China (North), Cambodia and Laos (West).
- ▶ **Maritime boundaries:** South China Sea to the east and south, the Gulf of Thailand (Gulf of Siam) to the southwest.

Geographical Features

- ▶ **Major Rivers:** Mekong, Red, Ma, etc.
- ▶ Many rare and unusual animals live in Vietnam, including giant catfish, Indochinese tigers, Saola antelopes, Sumatran rhinos, etc.
- ▶ **Climate:** Tropical characterized by high temperature and humidity all year round.
- ▶ **Highest Peak:** Fansipan

Initiatives taken by India to strengthen relations

- ▶ **Mekong-Ganga Cooperation (MGC):** An initiative by India and five ASEAN countries.
- ▶ **Quick Impact Projects: It is being undertaken by India** in various provinces of Vietnam under MGC framework
- ▶ India provides **training, capacity building and educational courses** in Indian for Vietnamese nationals.
- ▶ India handed over an indigenously built missile **corvette INS KIRPAN** to Vietnam in 2023.

2.1.5. India-Malaysia Relations

CONTEXT

The Prime Minister of Malaysia paid a State visit to India.

ANALYSIS

Key Outcomes of the visit

- ▶ **Enhanced Strategic Partnership** established in 2015 was elevated to **Comprehensive Strategic Partnership**.
- ▶ Malaysia decided to join the **International Big Cat Alliance (IBCA)** as its founding member.

Importance of Malaysia for India

- ▶ **Geopolitical Alignment:** Malaysia's opposition to China's hegemonical attitude in SCS.
- ▶ **India's Act East Policy:** Malaysia holds a crucial position in expanding India's trade with ASEAN.

BRIEF BACKGROUND

Political Features

- ▶ **Country in Southeast Asia**, lying just north of the Equator.
- ▶ **Composed of two non-contiguous regions:** Peninsular Malaysia - on the Malay Peninsula, and East Malaysia (Malaysia Timur) - on the island of Borneo.
- ▶ **Land boundary:** Thailand (North), Singapore (South), Indonesia (South to East Malaysia) and Brunei.
- ▶ **Water bodies:** South China Sea and Andaman Sea.

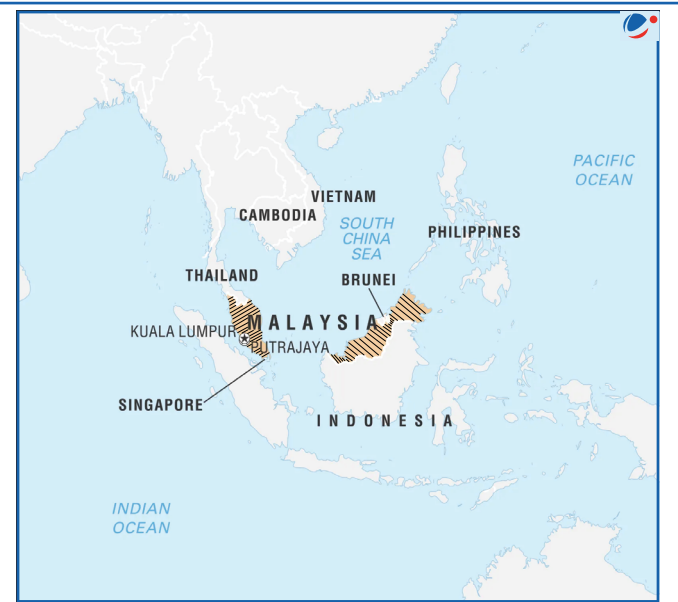
- ▶ **Securing Sea Lines of Communication (SLOC):** Malaysia's proximity to the crucial Strait of Malacca.
- ▶ **Cooperation on international platforms:** India sees Malaysia as a strong **Global South partner**.

About India-Malaysia Relations

- ▶ **Economic:** Malaysia is India's 16th largest trading partner. Malaysia is India's **3rd largest trading partner in ASEAN**.
- ▶ **Oil palm diplomacy:** Malaysia contributes three million metric tonnes of palm oil out of the 9.7 million tonnes India imports every year.
- ▶ **Defence Cooperation:** **Malaysia-India Defence Cooperation Committee (MIDCOM)** meets annually to review the progress in defence cooperation. First regional office of HAL was also inaugurated in Kuala Lumpur 2023.
- ▶ **People-to-people connect:** Malaysia houses over two million people of Indian origin, the third-largest diaspora after the United States and the United Arab Emirates.

Challenges in India-Malaysia Relations:

- ▶ **Weak Economic Cooperation:** India-Malaysia trade is much smaller compared to Malaysia-China trade, which exceeds \$100 billion.
- ▶ **Defense Geopolitics:** In 2023, Malaysia chose South Korea's FA-50 jets over India's Tejas.
- ▶ **Political Tensions:** Malaysia's criticism of India's actions in Kashmir and the Citizenship Amendment Act.
- ▶ **Extradition Issues:** Malaysia has repeatedly denied India's extradition requests (for of Zakir Naik) since 2017, causing friction.
- ▶ **China Relations:** Malaysia prefers quiet diplomacy with China. China is also involved in developing Malaysia's **Melaka deep-sea port project to undermine Singapore** or cutting a canal through the **Isthmus of Kra to bypass the Malacca Strait**.
- ▶ **Labour Exploitation:** Indian migrant workers face harassment and exploitation in Malaysian farms.



Geographical Features

- ▶ **Important Rivers:** The Pahang (longest in Malaysia), the Rajang, etc.
- ▶ **Important Lakes:** Kenyir (biggest man-made lake in Southeast Asia), Bera, Chini, etc.
- ▶ **Important Straits:** Malacca (southwest) and Balabac Strait.
- ▶ **Highest point:** Mount Kinabalu.

India's initiatives



Special allocation of 100 seats under India's Technical and Economic Cooperation (ITEC) Programme for Malaysian nationals.



Joint Committee Meeting of Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA) for deepening economic partnership



Netaji Subhash Chandra Bose Indian Cultural Centre in Kuala Lumpur promotes Indian languages, dance, and yoga.



Malaysia is one of the overseas markets **accepting UPI payments**

Way ahead for improving India Malaysia relations



Deepening economic cooperation:

Initiatives like avoiding double taxation, customs cooperation, etc.



Early conclusion of review of AITIGA, ASEAN is one of the major trade partners of India with a share of 11% in India's global trade. The upgradation of AITIGA will further boost bilateral trade.



Strengthening Defense Cooperation: India's foreign policies and outreach should also deepen defence cooperation in line with South Korea's New Southern Policy (NSP).



Collaborating on India-led Initiatives: Malaysia can be brought into India's global initiatives like International Solar Alliance to strengthen ties.



Soft power Cultural Diplomacy: Malaysia, with its large Buddhist population, can play a key role in India's tourism efforts, like the 'Buddhist Circuit' initiative,

2.1.6. India–Japan Relations



CONTEXT

Prime Minister of India and Japan held a bilateral meeting on the side-lines of the G-7 Summit in Apulia, Italy.

ANALYSIS



Significance of India–Japan Bilateral Relationship

- ▶ **Bilateral:** Both countries noted that India–Japan Special Strategic and Global Partnership is in its 10th year.
- ▶ **Convergence of Strategic Interests:** Of both Japan’s ‘Free and Open Indo-Pacific’ (FOIP) strategy and India’s IPOI.
 - ▷ Both are participating in Supply Chain Resilience Initiative
- ▶ **Strategic Connectivity:** Linking South Asia to Southeast Asia through India’s “Act East” and Japan’s “Partnership for Quality Infrastructure” policy.
 - ▷ Also, both converge at the Asia–Africa Growth Corridor (AAGC) initiative.
- ▶ **Defence Relationship:** The acquisition and Cross-Servicing Agreement (ACSA) brings closer cooperation between Armed forces of India and Japan. E.g., Military Exercises: Dharma Guardian, Shinyuu Maitri, JIMEX.
- ▶ **Important trade partners:** Bilateral Trade was US\$ 21.96 billion (FY 2022– 23), Both signed CEPA in 2011.
- ▶ **Energy Cooperation:** E.g., India–Japan Clean Energy Partnership (CEP) was announced in 2022.
- ▶ **Reformed Multilateralism:** Both countries support reforms at UNSC and are also part of Quad, G20, G4.
- ▶ **Cooperation in Science & Technology missions:** E.g., Lunar Polar Exploration Mission (LUPEX).

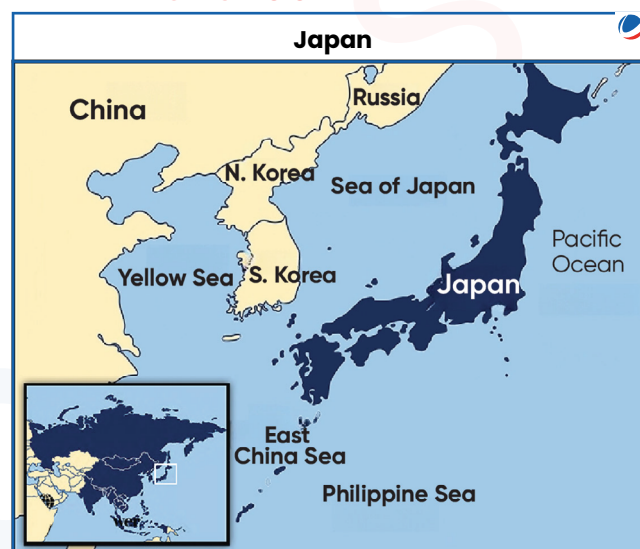
Significance for India

- ▶ **Infrastructural development:** E.g., Mumbai–Ahmedabad High Speed Rail project.
- ▶ **Foreign Investment:** Target of 5 trillion-yen investment in India (2022–2027).
- ▶ **Transformation of India’s manufacturing:** E.g., India–Japan Industrial Competitiveness Partnership.
- ▶ **Official Developmental Assistance:** Japan is largest bilateral donor to India.

Challenges in Indo–Japan Relationship

- ▶ **Bilateral Trade:** India–Japan trade remains low with the domination of India’s imports even after CEPA.
- ▶ **Divergent approaches in tackling China:** India has been vocal about China’s actions at the Line of Actual Control (LAC) but restrained in directly criticising China’s actions in the South China Sea, Taiwan Straits etc.
 - ▷ **Stand on Russia–Ukraine war:** Japan has joined sanctions against Russia, while India has refused to do so.
- ▶ **India boycotted ‘Osaka Track’ suggested by Japan at G20 summit (2019)**
- ▶ **Delay in Implementation of Projects:** Such as Asia Africa Growth Corridor and bullet train project.

BRIEF BACKGROUND



Political features:

- ▶ Japan, island country lying off the east coast of Asia.
- ▶ **Boundaries:** Sea of Japan (west), which separates it from South and North Korea and southeastern Siberia (Russia).
- ▶ To the north by Sōya Strait, separating it from Russian-held Sakhalin Island.
- ▶ To the northeast by the southern Kuril Islands.
- ▶ To the east and south by the Pacific.
- ▶ To the southwest by the East China Sea, which separates it from China.

Geographical features:

- ▶ It consists of a great string of islands in a northeast–southwest arc that stretches through the western North Pacific Ocean.
- ▶ **Nearly the entire land area is taken by:** Hokkaido, Honshu, Shikoku, and Kyushu.
- ▶ It lies along the western edge of the Ring of Fire. As much as 10 percent of the world’s volcanic activity takes place in Japan.

Steps to be taken



Accelerate trade and investment by review of implementation of CEPA and taking a relook at the rules of origin.



Enhanced defense collaboration with focus on enhanced shared security.



Coherence in approach towards Indo-Pacific at various platforms such as QUAD.



Deepen cooperation in new and emerging areas such as modern biology, biotechnology and health care, etc.



Enhanced dialogue and exchanges to strengthen Business and People to People cooperation.

2.1.7. India-France Relations



CONTEXT

Prime Minister met with President of France on the sidelines of the G7 Summit.

ANALYSIS



The growing convergence between India-France Relations

- ▶ **Defense Cooperation:** France (33%) is India's second largest arms supplier as per SIPRI. Key projects e.g., Rafale aircraft purchases and the P-75 Scorpene Project.
 - ▷ **India and France have announced a "defence industrial roadmap"**
 - ▷ **Military exercises:** VARUNA, FRINJEX-23, La Perouse and ORION.
- ▶ **Geo-Strategic:** The India-France Indo-Pacific Roadmap, released in 2023 broadened the scope of bilateral cooperation from the **Indian Ocean Region (IOR) to encompass the entire Indo-Pacific region.**
- ▶ **Space Cooperation:** France remains a major supplier of components for the Indian space programme.
- ▶ **Economic Cooperation:** France is one of the largest investors in India with FDI inflow of \$659.77 million for FY 2022-23.
- ▶ **Digital Cooperation:** Launched Unified Payments Interface (UPI) from Eiffel Tower offering secure and convenient transactions for Indian visitors and NRIs.
- ▶ **Multilateral Cooperation:** France has been a consistent supporter of a permanent seat for India on UNSC; Supported India's stances on Kashmir; Helped India's accession to **MTCR, Wassenaar Arrangement and Australia Group (AG).**

Challenges in India and France relation

- ▶ **Bilateral Trade Figures:** In 2022, bilateral trade stood at US\$15.8 billion, which is lower than the potential.
- ▶ **Inordinate delay in Nuclear Agreement:** Due to technical, financial, and civil nuclear liability issues.
- ▶ **Differing Strategic Autonomy:** India prioritizes non-alignment; France engages in pragmatic alliances.

BRIEF BACKGROUND



Political features:

- ▶ **Location:** Northwestern Europe
- ▶ **Boundaries:** Belgium and Luxembourg (Northeast); Germany, Switzerland, and Italy (east); Mediterranean Sea, Spain, and Andorra (south), Bay of Biscay (west), English Channel (northwest).
- ▶ **Monaco** is an independent enclave on the south coast.
- ▶ **Island of Corsica** in the Mediterranean is treated as an integral part of the country.

Geographical features:

- ▶ **Mountain ranges:** Alps, Pyrenees, Massif Central, Jura, Vosges, etc.
- ▶ **Important rivers:** Seine, Loire, Garonne, Rhone and Rhine.

Way forward

- ▶ **Balance diverging 'strategic autonomy':** Which means, more flexibility in accommodating each other's strategic concerns while pursuing one's strategic autonomy.
- ▶ **Leverage existing cooperation mechanisms:** E.g., the India-France Joint Working Group on counterterrorism, can facilitate greater convergence in addressing shared security concerns in the Indo-Pacific.
- ▶ **Effective coordination:** Regular dialogue at diplomatic, security, military, level to align strategic objectives.
- ▶ **Expand defense cooperation:** E.g., through joint military exercises and knowledge-sharing through joint patrols.
- ▶ **Active engagement in multilateral forums.** E.g., the Quad and I2U2, etc., and foster cultural exchanges.

2.1.8. India-United Kingdom Relations



CONTEXT

Recently, the Foreign Secretary of the United Kingdom (UK) visited India.

ANALYSIS



The growing convergence between India-UK Relations

- ▶ **India-UK relations:** Elevated to 'Comprehensive Strategic Partnership' in 2021.
- ▶ **Defence cooperations:** Military exercises: Ajeya Warrior, Konkan, Cobra Warrior etc
- ▶ **Health:** AstraZeneca COVID-19 vaccine collaboration.
- ▶ **Indian diaspora:** Only 1.8 %, contribute 6% of Britain's GDP.
- ▶ **Trade and Investments Cooperations:** India was the UK's 12th largest trading partner. UK is the 6th largest investor in India.
- ▶ **Technology:** UK-India Technology Security Initiative (TSI) was launched in 2024.

The Growing Significance of India-UK relations

- ▶ **Deepening of multiple-level ties:** Roadmap 2030 for India-UK future relations launched during India-UK Virtual Summit in 2021.
- ▶ **India-UK acting as 'Net Security Provider'** across the Indo-Pacific
- ▶ **Indian Ocean Region (IOR) focus:** E.g., U.K. has at least seven permanent bases in this region.
- ▶ **The India-UK economic asymmetry** provides an opportunity for India to aspire for a better per capita GDP.
- ▶ **UK-India trade partnership has gained momentum after Brexit.**

Challenges in India-UK relations

- ▶ **Colonial Hangover:** "Anti-colonial posturing prevents the establishment from seizing the full range of possibilities with Britain." C. Raja Mohan.
- ▶ **Failure to tackle** vandalization of the Indian flag by protesters. E.g., during an attack on the Indian high commission in London in 2023.
- ▶ **UK's Hyphenating India-Pakistan** goes against India's interests. E.g., raising Kashmir as an issue in UN.
- ▶ **Absence of specific deadline** for concluding negotiations on FTA.

BRIEF BACKGROUND



United Kingdom (Capital: London) is an island country located off the northwestern coast of mainland Europe.

- ▶ The United Kingdom comprises the whole of the island of Great Britain—which contains **England, Wales, and Scotland**—as well as the **northern portion of the island of Ireland.**

Political features:

- ▶ Only land boundary, is with Ireland.
- ▶ UK is surrounded by sea. To the **south of England and between the United Kingdom and France** is the English Channel.
- ▶ **The North Sea** lies to the east.
- ▶ **The Irish Sea** separates Great Britain from Ireland.
- ▶ While **southwestern England, the northwestern coast of Northern Ireland, and western Scotland** face the Atlantic Ocean.

Geographical features

- ▶ Largest river: The River Severn (not Thames)
- ▶ Highest point: Ben Nevis

Way forward

- ▶ Finalisation of **India-UK FTA at the earliest**.
- ▶ Promote People-People tie: E.g., **Generation UK-India initiative, India-UK Young Professionals Scheme**
- ▶ U.K. must **de-hyphenate its relations with India and Pakistan**.
- ▶ **Prioritize collaboration in counterterrorism, HADR, and maritime security**, especially in the Indo-Pacific region. E.g., Particularly in the Red Sea and the Suez, the main India-UK trade lanes.

India-UK Free Trade Agreement (FTA) is a negotiated bilateral trade deal which started in 2022 to realign 90% of the existing tariff lines for international trade between the two countries.

Potential Benefits of FTA	Major concerns
<ul style="list-style-type: none"> ▶ Cut tariffs: India seeks lower tariffs for fashion, homeware, furniture, electrical, etc. ▶ Import duty exemptions: Small & Medium Enterprises in textiles, clothing and gems and jewellery will be benefited with the removal of import duty. ▶ Avoid double taxation: India continues to push its Double Taxation Avoidance Agreement. ▶ Access to financing: to Indian companies to UK financing and expertise in green and sustainable infrastructure projects. 	<ul style="list-style-type: none"> ▶ Liberal Rules of Origin may result in EU goods falsely labelled as UK products. ▶ India's new Bilateral Investment Treaties (BITs), mandating exhausting local remedies before resorting to international arbitration, faces resistance in negotiation. ▶ UK seeks commitments beyond the WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which India is resisting. ▶ U.K. is seeking a significant cut in import duties on goods. E.g., scotch whiskey, automobiles, etc. which can affect the trade balance against India.

2.1.9. India-Eurasia Relations

CONTEXT

India's Prime Minister's visit to Poland marks a **significant shift in New Delhi's diplomatic engagement with Central and Eastern Europe**, reflecting the **rapidly evolving geopolitical landscape across Eurasia**.

ANALYSIS

Factors highlighting the Changing geopolitics of Eurasia

- ▶ **Hotbed of conflicts:** E.g., Russia-Ukraine conflict.
- ▶ **Growing Chinese influence:** China's Belt and Road Initiative.
- ▶ **Changing strategic priorities of US:** Shifting focus from Middle East to Eurasia and Indo-Pacific, Strengthening NATO and involvement in the **Three Seas initiative**.
- ▶ **Regional geostrategic alliances:** E.g., China and Russia 'no limits' partnership; emergence of a **Russia-Iran-China axis, China-Iran-Russia-Turkey-Pakistan strategic pentagonal** etc.
- ▶ **Tilt in Russia's foreign policy toward Asia:** It is evident in the recent visits of the Russian president to North Korea and Vietnam.
- ▶ **Alignment of East Asian countries with Western European:** Through AUKUS, Europe will engage in the Indo-Pacific.
- ▶ **Shift of global order towards Eurasia:** E.g., IMEC signifies the commitment of the US, Europe, and emerging powers such as India, Saudi Arabia, and the UAE to promoting an interconnected Eurasian order.

BRIEF BACKGROUND



Political features:

- ▶ **Location:** Single enormous landmass composed of the continents of **Europe and Asia**.
- ▶ There are no standard definitions of Eurasia. Its **exact borders are debated**.

Significance of India-Eurasia Relations

- ▶ **To manage China's influence in the region:** 16+1 initiative and Chinese investments through BRI initiative has not gone down very well with the EU. It sees India as an economic counterweight to China.
- ▶ **Reformed Multilateralism:** Various Eastern European countries have shown unequivocal support for India's bid for a permanent seat on the UNSC.
- ▶ **Global Power Projection:** India portrays influence well beyond its South Asian neighbourhood.

Opportunities for India in the evolving landscape

- ▶ **Strategic:** Strengthening ties with Russia to counterbalance China; India's growing defence partnership with Armenia.
- ▶ **Economic:**
 - ▷ **Energy Security:** Eurasian especially Central Asian are prospective long-term partners of India in energy.
 - ▷ **India's two-way trade with Eurasia** could reach \$170 billion from the current figure of around \$20 billion.
- ▶ **Regional Security:** Help to counter terrorism, extremism, and drug trafficking.

What are the challenges in the evolving Eurasian landscape for India?

- ▶ **Geographical Connectivity and Infrastructure:** Lack of geographical connectivity and slow progress on connectivity projects like INSTC, IMEC etc.
- ▶ **Pakistan Factor:** Overcoming the geographic limitation represented by the Pakistan barrier, will be central to an expanded Indian role in Eurasian geopolitics.
- ▶ **Threats from China:** BRI challenges India's strategic extended neighbourhood initiative such as **Connect Central Asia Policy**, forcing India to look for alternatives.
- ▶ **Challenges in Indo-Russia relations:** This includes Russia's growing proximity to China and India's perceived tilt towards the US or QUAD.
- ▶ **Balancing Strategic Partnerships:** Ensuring India's autonomy while managing divergent interests and aligning with both maritime (e.g., QUAD) and continental coalitions (e.g., Shanghai Cooperation Organisation).

Geographical features:

- ▶ **Mountain Ranges:** Ural, Caucasus, Altai, Dinaric Alps.
- ▶ **Important Seas:** Black Sea and Caspian Sea.
- ▶ **Important lakes:** Lake Baikal, Aral Sea (has lost 90% of its water surface area in recent decades due to mismanagement).
- ▶ **Important rivers:** Dniπρο, Volga, etc.

India' Outreach to Central and Eastern Europe



Strategic engagement: India has increased its diplomatic and economic engagements with Central and Eastern European (CEE) countries.



Economic & commercial Relations: Poland is India's largest trading & investment partner in Central & Eastern Europe (**Bilateral trade worth US\$6 billion in 2023**).



India-Middle East-Europe Economic Corridor (IMEC): Announced on the side-lines of the G20 summit, it aims to integrate Asia, Europe and the Middle East.



Cultural and Educational Relations: Strong tradition of Indology studies in Poland, Yoga, **Good Maharaja Connection** (Maharaja Jam Saheb Digvijaysinhji) etc.



Strategic Autonomy at display: E.g. India's PM visit of Ukraine shows India's view of Ukraine is independent from that of Russia.

Way Forward



Enhance connectivity:
Join Russia's Greater Eurasian corridor and the Northeast Passage to establish connections to the Far East and Japan.



Strengthening relations with EU:
India's Eurasian policy should include enhanced engagement with EU.



The India-Central Asia Summit can be held annually instead of biannually, similar to the India-ASEAN Summit.



India needs to balance its **Connect Central Asia policy with its Act East Policy and Indo-Pacific Strategy.**

2.1.10. India–Russia Relations



CONTEXT

Prime Minister of India officially visited Russia in July 2024 for the 22nd India–Russia Annual Summit.

ANALYSIS



Contemporary Significance of India–Russia Relations

- ▶ **Strategic:** Both share concern about China’s rise in their neighbourhood and its influence as a hegemon.
- ▶ **Both advocate multipolar world order:** Opposing unilateral actions by any single country.
- ▶ **Shift from a buyer-seller dynamic:** To joint R&D and production. E.g. Brahmos cruise missile and Kalashnikov AK-203 assault rifles.
- ▶ **Protecting Strategic autonomy:** By balance their increasing dependence on USA (for India) and China (Russia).
- ▶ **Combatting terrorism:** Both desire adoption of the Comprehensive Convention on International Terrorism in the UN framework.
- ▶ **Multilateral:** Both countries cooperate actively in multilateral forums like UN, BRICS, and SCO.

Significance for India

- ▶ **Russia has never hurt India’s interests and even maintained position of neutrality** in India–China ties.
- ▶ **Supports India’s permanent membership to UNSC.**
- ▶ **Russia is India’s top military supplier** accounting for 36% of total defense imports. E.g., Russia’s S400 air defence system and newer frigates such as ‘Tushil’ frigate.
- ▶ **Enhance India’s connectivity** with Central Asia and the wider Eurasia through projects like the INSTC, the Northern Sea Route and the Chennai–Vladivostok Eastern Maritime Corridor.
- ▶ **The Indian pharmaceutical sector** has emerged as a top medicine supplier in Russia, replacing Germany.
- ▶ **Russia became India’s top crude oil supplier.** Purchase of oil and fertilizer at discounted prices has kept India’s inflation in check.
- ▶ **Technological cooperation:** E.g., Kudankulam Nuclear Power Plant (supplying 2000 MW of energy, 4000 MW of reactor capacity in the pipeline), GAGANYAAN mission, etc.
- ▶ **Partnership for Regional Stability:** E.g., Russia plays a key role in bringing peace and stability in Afghanistan.

Challenges in Indo–Russia relationship:

- ▶ **India’s PM visit to Russia:** It has received criticism from Ukraine and the USA on its timing and optics.
- ▶ **Low interoperability:** Between the Indian and Russian armed forces. E.g., postponement of Indra exercises in 2022 and 2023.
- ▶ **No major military deals:** After the S-400 deal to avoid USA sanctions under CAATSA.
- ▶ **Geopolitical Challenges:** Increasing India–US convergences (e.g., QUAD); Growing Russia–China ties (bilateral trade

BRIEF BACKGROUND



Political features:

- ▶ Russia is bounded to the north and east by the Arctic and Pacific oceans.
- ▶ It has small frontages in the northwest on the Baltic Sea at St. Petersburg and at the detached Russian oblast (region) of Kaliningrad which also abuts Poland and Lithuania.
- ▶ North Korea, China, Mongolia, and Kazakhstan, Azerbaijan, and Georgia (South).
- ▶ To the southwest and west it borders Ukraine, Belarus, Latvia, and Estonia, as well as Finland and Norway.

Geographical features:

- ▶ Russia contains Europe’s longest river, the Volga.
- ▶ Largest lake, Ladoga.
- ▶ Also is home to the world’s deepest lake, Baikal.
- ▶ Records the world’s lowest temperature outside the North and South poles.
- ▶ Mountain ranges: Caucasus Mountains, the Altai Mountains, the Ural Mountains

over \$240 billion); Russia is keen to **expand bilateral ties with Pakistan** (e.g., Pakistan to invited join INSTC).

- ▶ **Rising Trade deficit:** Russia enjoys a massive surplus. In 2023-24, India's exports to Russia were \$4.3 billion, while imports stood at \$61.4 billion. This has complicated the **Rupee-Rouble deal**.
- ▶ **Russian Far East:** Reviving the Chennai-Vladivostok maritime corridor may only yield limited trade gains as it lacks access to **foreign markets restricting trade** due to **sanctions from Japan and South Korea**.

Key Outcomes of the Visit

- ▶ Set the bilateral trade **target of USD 100 billion by 2030**.
- ▶ Promote **bilateral settlement system using national currencies**.
- ▶ Signed **Program of India-Russia cooperation** in trade, economic and investment spheres in the **Russian Far East** for the period from 2024 -2029, and **cooperation principles in the Arctic zone of the Russian Federation**.
- ▶ India will open two **new consulates in Kazan and Yekaterinburg**.

Way Forward



Diversify trade by expand beyond oil, incorporating products from metallurgy, chemical industry, and space.



Fast tracking of Eurasian Economic Union-India negotiations.



Exchange of Logistics Agreement (RELOS): It will simplify **military-to-military exchanges for exercises, training, etc.**



Broaden collaboration on bilateral and regional issues. E.g. as collaboration on nuclear power plant in Bangladesh



Strengthening Tier II diplomacy: Strengthening contacts with the new generation as well as academia

Related News

Russian president recently paid an official visit to North Korea and Vietnam.

Key outcomes of Russian President's visits

- ▶ **North Korea:** Signed the **Treaty on the Comprehensive Strategic Partnership** between Russia and North Korea
- ▶ **Vietnam:** Vietnam and Russia **celebrated the 30th anniversary of the 1994 Treaty** on the Basic Principles of the Vietnam-Russia Relationship.

Potential Implications of the Visits

- ▶ **Two strategic triangles** are emerging: **US, South Korea, and Japan** and **Russia, North Korea, and China**.
- ▶ **Threat to global security:** With **security guarantees from Russia and China**, North Korea may further **pursue its military modernisation plans**.
- ▶ India has long been apprehensive about North Korea's proliferation activities, particularly the **transfer of missile technology to Pakistan**.

2.1.11. India-Ukraine Relations



CONTEXT

India's Prime Minister visited Ukraine for the first time since the establishment of diplomatic relations in 1992.

ANALYSIS



What is the Significance of PM's Visit to Ukraine?

- ▶ **Mending fences with Ukraine:** India's trip to Kyiv aims to reclaim lost bonds with Ukraine in the post-soviet era.

BRIEF BACKGROUND

Political Features

- ▶ **Location:** Eastern Europe and is the **2nd largest country** in Europe after Russia.
- ▶ **Bordering Countries:** Belarus (north), Russia (east), Moldova & Romania (southwest), Hungary, Slovakia,

- ▶ **Establish India as a Global Mediator:** At the global high table and aim to have influence beyond its South Asian neighbourhood.
- ▶ **Shift in India's Neutrality in foreign policy:** It showcases the shift from maintaining equal distance (non-alignment). Moreover, India has maintained that it was never neutral but on side of peace in Russia-Ukraine conflict.
- ▶ **Delicate Balancing Act between the West and Russia based on India's multi-alignment approach.**
- ▶ **India's larger Europe Push:** India is not limiting itself to Russia, Germany, France, and Britain. India's quest for Europe's peace makes a larger push towards Europe.

Significance of Ukraine for India

- ▶ **Defence Cooperation:** India's military hardware faces maintenance challenges due to the Russia-Ukraine war.
- ▶ **Trade and Economy:** Bilateral trade between the two countries reached **US \$ 3.386 billion (2021-22)**. Pre-war, Ukraine was a significant source of sunflower oil for India.
- ▶ **Post-War Recovery and Reconstruction:** India and Ukraine agreed to explore the possibility of Indian companies being involved in Ukraine's reconstruction and recovery.
- ▶ **Reformed Multilateralism:** Ukraine's support reformed and expanded UNSC with India's permanent membership of UNSC to reflect global realities.

Challenges in India-Ukraine Relationship

- ▶ **Russia-India Relations:** India's historical ties with Russia complicate its ability to support Ukraine fully, leading to a delicate diplomatic balancing act.
- ▶ **Decline in Trade:** There has been significant reduction in the annual bilateral trade in goods since year 2022 due to on-going war. India's exports to Ukraine dropped by 22.8% while Ukraine's exports to India fell by 17.3%.
- ▶ **Historical baggage:** Ukraine's criticism of India's Nuclear Test, supply of defence equipment's to Pakistan and Kashmir policy has also hindered full level engagement.

Conclusion

India should position itself as a proactive mediator, consistently advocating for dialogue and peaceful resolution to bring conflicting parties to the negotiation table. Additionally, revitalizing trade relationships through improved ease of doing business, expanded market access in complementary areas, and harmonized standards and certification procedures will be crucial for long-term economic stability and cooperation.

and Poland (west). **The Sea of Azov & Black Sea** are located to the south of Ukraine.

Geographical Features

- ▶ **Mountain Ranges:** Carpathians, Crimean Mountains, etc.
- ▶ **Highest Point:** Mount Hoverla.
- ▶ **Climate:** Temperate
- ▶ **Major Rivers:** Dnieper, Danube, Dniester, etc.



Role India can play in Mediation of Russia-Ukraine war



Cooperation in upholding UN Charter, principles of international law, respect for territorial integrity and sovereignty of states.



Ensuring global food security by underscoring importance of uninterrupted and unhindered supply of agricultural products.



Development of innovative solutions with multi-stakeholder consultations having broader acceptability

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2.2. REGIONAL AND MULTILATERAL FORUMS

2.2.1. Rise of Minilaterals



CONTEXT

Chinese aggression in the Indo-Pacific has prompted the emergence of 'Squad', a minilateral grouping between the US, Japan, Australia and the Philippines

ANALYSIS



About Squad

- ▶ Squad is seen as an addition to the series of security minilateral groupings in the Indo-Pacific such as the **QUAD, AUKUS, US-Philippines-Japan trilateral and US-Japan-South Korea trilateral.**
- ▶ Its formation has highlighted the **growing preference for minilateralism** as the means of cooperation in the global world order.

Benefits of Minilaterals for India

- ▶ **Maintaining strategic autonomy, enhance its policy of multi-alignment** and ensure regional security. E.g. **QUAD partnership.**
- ▶ **Emerge as a voice of global south** by reconciling Western interests with the developmental agenda of the Global South. E.g., **India-Brazil-South Africa (IBSA) Trilateral.**
- ▶ **Co-opting partners with similar interests.** E.g., **Australia, France, and India trilateral** focuses on regional security, etc.
- ▶ **Solve transnational as well as specific challenges** in the areas of water, energy, food security etc. E.g. **India-France-UAE trilateral** cooperates on defence and energy.
- ▶ **Allows India to be part of diverse Networks.** E.g. part of U.S. alliances (QUAD) and the Middle East (I2U2).
- ▶ **Encouraging the shift of industrial supply chains out of China** and building new coalitions. E.g. "Chip 4" semiconductor alliance.

Reasons behind rise of Minilaterals

- ▶ **Failure of the Multilateral Institutions:**
 - ▷ Existing multilateral institutions are facing difficulties to address new and emerging global challenges.
 - ▷ **Heightening Great-Power Rivalry** impeding consensus E.g. **Dysfunctional WTO's dispute settlement system.**
 - ▷ **Emergence of more assertive China** is leading to emergence of groupings such as **QUAD, AUKUS, etc.**
 - ▷ **COVID-19 pandemic** revealed vulnerabilities of multilateral institutions. E.g. **WHO.**
 - ▷ **Tyranny of Majority:** Developed countries view the high bargaining power of the developing countries as tyranny of the majority.
- ▶ **Advantages of Minilateralism**
 - ▷ **Pragmatic alternative to cumbersome multilateralism** as it allows increased flexibility and agility.
 - ▷ **Issue based cooperation** allows like-minded countries to come together E.g. **SCRI.**
 - ▷ **De-globalization and rise in protectionist tendencies** makes it difficult to cooperate on multilateral platforms: E.g. **US-China Trade War.**

BRIEF BACKGROUND

What are Minilaterals?

Minilaterals are informal and targeted grouping with fewer states (usually 3 or 4) which intends to address specific threat, contingency or security issue sharing the same interest for resolving it within a finite period of time.

Reasons for Rise of Minilaterals in Indo-Pacific

- ▶ **Vast maritime geography with the varied interests** of different member nations and to ensuring a free, open and inclusive Indo-Pacific.
- ▶ **Differing national interests, threat perceptions, and desires for alignment.** E.g., **South China Sea dispute.**
- ▶ **Response to China's rise and challenge** to the regional balance of power.
- ▶ **Failure of the region to develop** much faith in the UNSC system to resolve issues. E.g. **Korean Peninsula, Middle East turmoil.**

Challenges with Minilaterals

- ▶ **Legitimacy and inclusiveness:** Lack of inclusiveness can undermine interests of countries in Global South.
- ▶ **Limited resource and capabilities:** To address complex global challenges like Climate Change.
- ▶ **Tensions and divisions among countries:** Due to potential for growth of exclusionary bloc politics, particularly in areas of strategic cooperation. E.g. **China characterizes Quad as an 'Asian NATO'**.
- ▶ **Accountability and Transparency:** Less formal structure and processes in minilaterals raise concerns of inadequate democratic oversight.
- ▶ **Promote soft law mechanisms,** i.e. voluntary and non-binding targets thereby leading to **reduced accountability in global governance.**
- ▶ **Informal Nature and lack of proper structures** required for focused debates may lead to less effectiveness in shaping of state policies, interests, and behaviour for rules-based framework in the global order.
- ▶ **Diminished sanctity of multilateral frameworks** by disrupting process of international interdependence.

2.2.2. Group of 7 [G7]



CONTEXT

India participated in the 50th Group of Seven (G7) Summit in Apulia, Italy, where India was invited as an Outreach Country.

ANALYSIS



Major Outcomes of the Summit:

- ▶ **Regional affairs:** G7 pledged \$50 billion using frozen Russian assets.
 - ▷ **Israel-Hamas conflict:** Defend their vessels in Red Sea. E.g., EU's Aspides and US-led Prosperity Guardian.
- ▶ **Promote economic resilience:** Through G7 PGII initiatives, IMEC, Partnership for Resilient and Inclusive Supply-chain Enhancement, the Mineral Security Partnership), etc.
- ▶ **Energy, climate and the environment:** Aim to reduce global greenhouse gas emissions by **43% this decade and 60% by 2035, compared to 2019 levels. Launched the Energy for Growth in Africa; India:** Under Mission LiFE launched "Ek Ped Maa Ke Naam".
- ▶ **Health and food security:** G7 launched **Apulia Food Systems.** Also committed to **support Gavi** for immunization coverage.

Significance of G7 in the current Geopolitics

- ▶ **Play a Central Role in Global Governance:** E.g., Global Partnership on AI (GPAI) for A.I. governance.
 - ▷ **Tax governance:** The Financial Action Task Force (FATF) was established in 1989 by the G7.
- ▶ **Act as a defender of the rules-based international system:** E.g., Strictly defend free and open Indo-Pacific.
- ▶ **A platform to resolve prominent international crisis:** E.g., Ukraine-Russia crisis; The present Summit emerged as a platform to represent the voice of the 'Global South'
- ▶ **G7 Summits have generated results:** E.g., successful launch of Global Apollo Program for multinational clean energy research (2015); Also, Base Erosion and Profit Shifting (BEPS) initiative.
- ▶ **The G-7 'Club of Democracies':** It's a **political epicentre of global efforts** to defend democratic societies.

BRIEF BACKGROUND

About Group of 7 (G7)

Nature: The G7 is an **informal grouping of advanced democracies** that meets annually to coordinate **global economic policy and address other transnational issues.** E.g., Migration, Climate change, conflicts, etc.

- ▶ **Genesis:** 1975.
- ▶ **Its working:** The G7 **lacks a permanent structure;** its rotating Presidency sets the agenda annually.
- ▶ **Members: 7.** The US, Germany, Canada, the UK, Japan, Italy, France. Russia joined G7 in 1998, creating the G8, but was excluded in 2014 for its takeover of Crimea.

G7 countries in numbers

- ▶ **40% of the global economy** and **10% of the world's population.**
- ▶ **36% of global power generation.**
- ▶ **30% of global energy demand.**
- ▶ **25% of global CO2 emissions.**

Key Achievements of G7

- ▶ **2002:** Set up a Global fund to fight malaria and Aids.
- ▶ **2009:** The L'Aquila Food Security Initiative (AFSI).
- ▶ **2021:** Launched the Build Back Better World partnership.
- ▶ **2022:** G7 announced the Partnership for Global Infrastructure and Investment (PGII)

Limitations of G7 Effectiveness

- ▶ **G7's economic dominance declined** from over 60% in the 1970s to 26.4% in 2023.
- ▶ **Without broader participation:** Like- the G20, BRICS, and the Asia-Pacific Economic Cooperation, etc.
- ▶ **The annual leadership changes** and every member tries to **prioritise their own strategic concerns.**
- ▶ **G7 unity is undermined by discord between the countries:** U.S. Refused to Join G7 Climate Change Declaration.

India and G7	
<p>Significance of India's participation in G7:</p> <ul style="list-style-type: none"> ▶ India's frequent invitations indicate its growing importance in global affairs. E.g., India has been invited 11 times. ▶ India's growing economic and military power make it a potential future member. India offers an alternative to China. ▶ India's inclusion helps G7 better understand and engage with the Global South perspective. ▶ India's G20 chairmanship complements its G7 participation, bridging developed and developing world interests. 	<p>Relevance of G7 for India</p> <ul style="list-style-type: none"> ▶ India as a Voice of the Global South. ▶ Among the comity of democracies: G7, reflects the concerns and agendas of democracies like India. ▶ For India, the outreach session have always been platform to showcase its achievements to the world. ▶ G-7 platform gives India the opportunity to meet global leaders and set priorities.

2.2.3. Shanghai Cooperation Organization (SCO)



CONTEXT

Belarus becomes the 10th member of SCO.

ANALYSIS



Belarus inclusion in SCO

- ▶ **Significance:** Belarus is first exclusively European country to join SCO & the inclusion signals SCO's growing integration into regional alliances that counter Western influence.
- ▶ **Concerns:** Strengthens China's institutional access to Eastern Europe & will further damage SCO's international credibility, as Belarus is a heavily sanctioned autocracy.

SCO: Role in Reshaping Global Multilateral Order

- ▶ **'Reshaping Multilateralism':** By expanding beyond Central Asia. E.g., comprises roughly 23% of the world's economic output and 42% of population.
- ▶ **Alternative multilateral structures:** By expanding its influence to reshape global power dynamics. E.g., Turkey, a NATO member, is also SCO dialogue partner.
- ▶ **Filling the Security Void:** Security vacuum left by NATO alliances (in 2021), in Afghanistan. Afghanistan Contact Group (ACG) was by SCO created in 2005.
- ▶ **Counter-Terrorism:** Establishment of RATS to coordinate counter-terrorism efforts among member states.
- ▶ **SCO fulfilling China's strategic design:** By offering alternatives to US-led institutions and positioning itself as Global South advocate. Even Russia sees SCO as a useful forum for **countering Western narrative.**
- ▶ **Central Asia's Connectivity Catalyst:** SCO provides a platform developing corridors and infrastructure in this historically isolated region. E.g., INSTC, Chabahar Project.

SCO's challenges

- ▶ **Expansion Dilemma:** SCO's enlargement, including Belarus, raises its global profile but dilutes regional focus. **Also, the expansion blurs Asia Focus as SCO was instituted with the sole focus on Central Asia.**

BRIEF BACKGROUND

Shanghai Cooperation Organisation (SCO)

- ▶ **HQ:** Beijing, China
- ▶ **Genesis:** It was founded at the Shanghai summit in 2001 by Russia, China, the Kyrgyz Republic, Kazakhstan, Tajikistan and Uzbekistan
- ▶ **SCO has 10 members:** China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, India, Pakistan, Iran (2023) and Belarus (2024). It includes 3 observer states and 6 dialogue partners.
- ▶ **Structure:** **The Council of Heads of States:** apex decision-making body; **Council of Heads of Governments:** second-highest council; **Two permanent bodies** - the Secretariat in Beijing (China) and the Regional Anti-Terrorist Structure (RATS) in Tashkent, Uzbekistan.

- ▶ **SCO members engage Taliban bilaterally:** Potentially undermining SCO's collective approach. Such engagements also go against India's, "an Afghan-led, Afghan-owned and Afghan-controlled process for enduring peace.
- ▶ **China aims to transform the grouping into a China-led multilateral forum.** E.g., help BRI gain regional prominence.
- ▶ SCO lack the necessary executive guarantee & has become a place to discuss and announce views.
- ▶ **Member states have diverse interests:** Making consensus-building challenging because of inimical parties as members. E.g., India-China & India-Pakistan.

India and SCO



India was given observer status in 2005 and in 2017, **India joined the SCO with full membership status.**



On the sidelines of SCO, 2024, External Affairs Minister reiterated the three mutuals – **mutual respect, mutual sensitivity and mutual interests.**



Like the BRICS, SCO is also seeking to expand **to obtain greater heft for the Sino-Russian global view.**



However, India seeks to **reconfigure the SCO platform** into a development-focused entity rather than one with an anti-Western agenda.



And in this regard, India strikes a balance and resist SCO becoming a Chinese mouthpiece.

India's Balancing Act and its priorities as SCO member

- ▶ Prime Minister of India did not attend the 24th SCO summit in Astana.
 - ▷ Also, India, under **its first-ever presidency of SCO**, hosted the meeting on virtual format in 2023.
- ▶ **Infrastructure:** India uses SCO forum to improve relations with Central Asian Republics (CARs), countering Chinese dominance.
- ▶ **Terrorism:** India's main priority is to eradicate terrorism and terrorist groups from its northwest border.
- ▶ **India's references incorporated into the declaration.** E.g., G20 themes like One Earth, One Family, and One Future, the startup forum, and the Life for the Environment (LiFE) initiative.
- ▶ India's priorities in SCO are shaped by Prime Minister's vision of a '**SECURE**' SCO. **SECURE stands for:** Security; Economic cooperation; Connectivity, Unity, Respect for sovereignty and territorial integrity; Environmental protection

2.2.4. India-Pacific Islands Nations Relations

CONTEXT

Recently, India offered aid to disaster-hit Pacific Island Nation (Papua New Guinea) showcasing India's commitment to Forum for India-Pacific Islands Cooperation (FIPIC) partnership.

ANALYSIS

Significance of Pacific Islands Nations for India

- ▶ **The Pacific Islands** are crucial to India's broader Indo-Pacific strategy, which aims to ensure a **free, open, and inclusive Indo-Pacific region.**
- ▶ **Geostrategic Location:** It offers India potential avenues for broader maritime strategies and military alliances.
- ▶ **Strengthens India's Economic Leverage:** By securing India's maritime trade & pursuit of resource security in the large Exclusive Economic Zones (EEZs) of Pacific island
- ▶ **Reformed Multilateralism:** These nations can play a major role in building collective stance on shared concerns at global level. E.g. **India's permanent seat at UNSC.**

BRIEF BACKGROUND

Pacific Islands Nations are situated in Pacific Ocean and comprised of 3 groupings, i.e., **Melanesia, Micronesia, and Polynesia.**

FIPIC

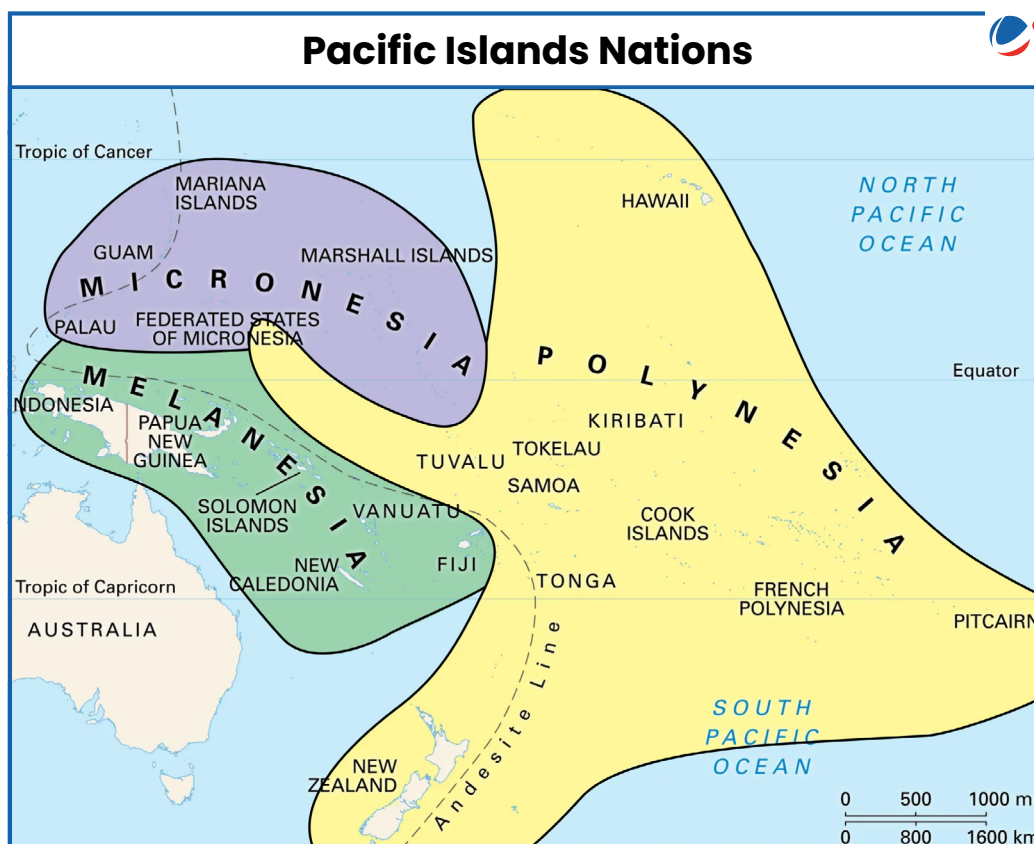
- ▶ **Founded in 2014.**
- ▶ It is a **multinational grouping of Pacific Island nations** formed for cooperation between India and 14 Pacific Islands.
- ▶ It has been **announced as part of India's broader "Act East" policy.**
- ▶ **Members:** Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Samoa, Solomon Islands, Palau, Papua New Guinea, Tonga, Tuvalu and Vanuatu.

- ▶ **India's International commitment to Climate Change:** E.g. some of these nations have joined ISA and India has encouraged other nations to join CDRI.
- ▶ **Strong Diaspora Presence and Historical connections**

▶ **Summits held:** 1st 2014 (Suva, Fiji), 2nd 2015 (Jaipur, India), 3rd 2023 (Port Moresby, Papua New Guinea).

India's engagement with Pacific Island Nations?

- ▶ **Launch of Indo-Pacific Oceans Initiative** in 2019.
- ▶ **Grant-in-aids and Concessional Line of Credits:** For renewable energy and climate projects.
- ▶ **Humanitarian Assistance and Disaster Relief (HADR):** E.g. Supply of Vaccines during COVID-19.
- ▶ **Facilitation in Election Processes:** E.g. supply of indelible ink to Papua New Guinea
- ▶ **India-UN Development Partnership Fund (2017):** It provides assistance to Least Developed Countries (LDCs) and Small Island Developing States (SIDS)
- ▶ **Community Development:** Between India and Marshall Island.



Challenges in Cooperation

- ▶ **Geopolitical Competition:** China's increasing strategic foothold. E.g. China's security pact with Solomon Islands.
- ▶ **Resource Constraints:** India's resources for domestic needs come in the way in providing external trade.
- ▶ **Large Geographical Distance:** Between India and PINs makes engagements difficult.
- ▶ **Heightened Vulnerabilities:** Faced by PINs due to natural disasters, supply chain disruptions etc.
- ▶ **Exclusion from policy discussions at global level:** E.g. QUAD, AUKUS)

Way forward

- ▶ **Strengthening Diplomatic Engagement:** Through regular high-level dialogues and consistent outreach policies
- ▶ **Collaboration on Climate Resilience Projects:** By offering technology and expertise.
- ▶ **Collaborate on issues** like illegal fishing, piracy, and marine pollution, contributing to regional and global stability.
- ▶ **Enhanced Economic Partnerships:** By strategic resource allocation in infrastructure along with a regular review mechanism.
- ▶ **Cultural Diplomacy:** Fostering people-to-people exchanges can deepen historical and cultural ties, building long-term relationships.
- ▶ **Demand driven cooperation model:** India can focus on demand-driven projects in IT, cyber security, desalination, and digital public goods, ensuring they meet the specific needs of Pacific Island nations.

2.2.5. Western Indian Ocean

CONTEXT

Western Indian Ocean is emerging as a key region for US-India and Indo-pacific cooperation.



ANALYSIS



Significance of Western Indian Ocean

- ▶ **Trade and Transportation:** WIOR comprises major trade routes and choke points such as **Cape of Good Hope, Mozambique Channel** etc. E.g., Mozambique Channel carries about 30% of the global oil trade.
- ▶ **Cornerstone of Indo-Pacific Cooperation:** The real-time information exchange through **IFC-IOR, Quad**, etc. make the WIO a critical area for Indo-Pacific Cooperation.
- ▶ **Ocean assets:** The economic value of ocean-related activities in the Western Indian Ocean, the **"gross marine product"**, is estimated at US\$20.8 billion annually.
- ▶ **Significance of WIOR for India**
 - ▷ **Its strategic Location** can bridge the gap between the Indo-Pacific and the Middle East.
 - ▷ **Countering Chinese influence:** India has a military base in Madagascar & is working with Mauritius to set up a military base on Agalega Island.
 - ▷ **Blue Economy:** WIO can contribute to India's Deep Ocean Mission and Blue Economy 2.0 Initiatives.
 - ▷ **Energy Security:** 90 % of the energy trade happens through Indian Ocean mainly through Suez Canal.
 - ▷ **Net security provider:** India's engagement in the WIO region can help enhance India's image and influence as a regional power.

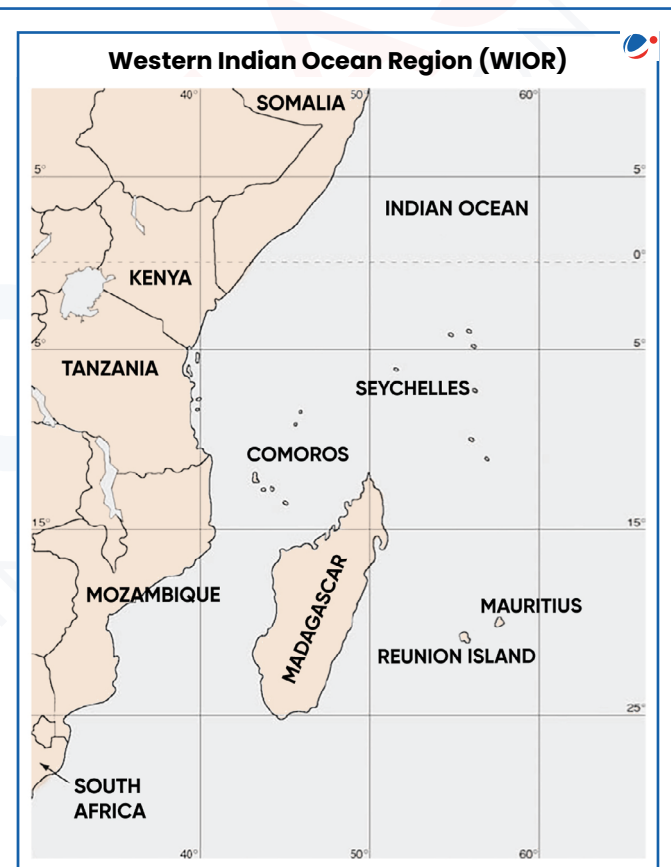
Challenges in WIOR

- ▶ **Emerging Maritime Threats:** E.g., the recent rise in pirate attacks off **Somalia's coast**.
- ▶ **Climate Change Impacts:** The region is vulnerable to the effects of climate change, such as **rising sea levels, ocean acidification, and extreme weather events**.
- ▶ **Chinese Debt Trap:** High debts have put several fragile economies in East Africa like Kenya at an increased risk of default, raising concerns about undue Chinese influence.
- ▶ **Militarization:** US, and China both have military base at **Diego Garcia**, and **Djibouti** respectively.

BRIEF BACKGROUND

About Western Indian Ocean Region (WIOR)

- ▶ It stretches from the east coast of Africa to the western shores of India.
- ▶ It comprises **Kenya, Mozambique, Somalia, South Africa, Tanzania** (Eastern African coastal states), **Comoros, Madagascar, Mauritius, Seychelles** (island states) and **French territories** (Mayotte and Reunion).



India-WIO Region Engagement

- ▶ **Security and Growth for All in the Region (SAGAR):** India has delivered Covid-19-related assistance.
- ▶ **Capacity Building:** India offers training and equipment to coastal guards and navies of WIO countries.
- ▶ **Joint military Exercises:** E.g., Africa India Field Training Exercise (AFINDEX-19).
- ▶ **Operation Sankalp:** Maritime security operations in areas like Gulf of Aden and adjoining areas, Arabian Sea and off the East Coast of Somalia.
- ▶ **Information Fusion Centre – Indian Ocean Region (IFC-IOR):** For enabling information exchange in IOR.
- ▶ **Memberships in common multilateral forums:** E.g., IORA, IONS.

2.2.6. Para-Diplomacy



CONTEXT

Recently, Ministry of External Affairs (MEA) has criticized Kerala government for appointing 'External Cooperation' Official.

ANALYSIS



- ▶ **Regional Strengths:** Para-diplomacy allows states to capitalize on their specific advantages. E.g., Kerala leveraged its diaspora to promote trade, investment, etc, with Gulf countries.
- ▶ **Attracting Investment:** States can tailor their investment policies to attract FDI. E.g., investment summits organised by various states like Vibrant Gujarat, Progressive Punjab and Vibrant Goa.
- ▶ **Cultural Diplomacy:** Para-diplomacy enables states to strengthen their historical and cultural ties. E.g., Tamil Nadu connections with Sri Lanka rooted in ethnicity, West Bengal ties with Bangladesh rooted in Bengali culture etc.
- ▶ **Contribution to National Foreign Policy:** States contribution to Centre's diplomatic effort. E.g., West Bengal CM's visit to Bangladesh in 1996, paved way for the Farrakka Water sharing treaty.
- ▶ **Strengthen federalism:** Para-diplomacy can help strengthen India's federal system by empowering states to play a more active role in international affairs.

Criticism associated with Para Diplomacy:

- ▶ **Constitutional:** States' involvement in international relations could be seen as **encroachment upon the Union government's powers** (a breach in constitutional mandate).
- ▶ **Resource Constraints:** Establishing and maintaining international partnerships would strain state's finance.
- ▶ **Divergent ideologies & interests:** Between centre and the state would lead to conflict. E.g., Dabhol Project (Maharashtra), began only after active support from the Centre.
 - ▷ Teesta Water Sharing Agreement was stalled due to resistance from West Bengal Government.
- ▶ **Bilateral relations:** Indirect influence of state governments in foreign policy decisions has **potential to affect India's bilateral relations** as well as its standing on international laws. E.g., India's vote on UNHRC resolution against a friendly neighbour, Sri Lanka.
- ▶ **Security Concerns:** Affect national security especially in sensitive regions e.g. North East region, states bordering Pakistan or China.

Way ahead

- ▶ **Institutional mechanism:** Effective institutional mechanisms through the **creation of consulates or consular offices in individual states.**
- ▶ **Capacity Building:** Allocate **adequate resources to state-government** and provide **training to state officials.**
- ▶ **Best Practices Sharing:** Create platforms to **share best practices and successful para-diplomacy models.**
- ▶ **Regular Assessment:** Of the impact of para-diplomacy initiatives and refine strategies based on feedback and outcomes.
- ▶ **Clear guidelines:** States Division, established under MEA, must engage in **developing policy formulation and clearer guidelines** to strengthen subnational diplomacy, and aligning both states and overall national interests.

BRIEF BACKGROUND

- ▶ According to MEA, **State Governments should not intrude into matters that are beyond their constitutional jurisdiction** and it is an encroachment on the union list.
- ▶ Constitution of India under the seventh schedule, Union list, item 10, clearly **specifies that foreign affairs and all matters which bring the Union into relation with any foreign country**, are the sole prerogative of the Union Government.

About Para- Diplomacy

- ▶ Para-diplomacy deals with the **foreign policy capacity of subnational governments.**
- ▶ These subnational governments might indulge themselves in international activism to promote their own interests.
- ▶ **Ministry of External Affairs** has also set up a new division – "**States Division**" in 2014 to coordinate with States and Union Territories to facilitate their efforts to **promote their exports and tourism and attract more overseas investments and expertise.**
- ▶ **Constitutional provisions:** 7th Schedule (relations with any foreign country comes under Union list; Article 253 and Article 293

2.3. MISCELLANEOUS

2.3.1. India: Global Peacemaker

CONTEXT



Recently, the **Summit on Peace in Ukraine** titled "Path to Peace Summit" was held in Switzerland.

ANALYSIS



About Peace summit

- ▶ **Objective:** To develop a common understanding of a path towards a just and lasting peace in Ukraine.
- ▶ **India's Representation:** To facilitate a peaceful resolution through dialogue and diplomacy.
 - ▷ India abstained from signing joint communique.

Why is Global Peacemaking in India's interest?

- ▶ **Contemporary shocks across the globe:** Issues like wars in Ukraine and Gaza and the threat of conflict around Taiwan have global impacts.
- ▶ **Ineffective UN System:** As UNSC's credibility has diminished due to the active involvement of the permanent members in current global conflicts.
- ▶ **Potential Global player:** Success in mediating peace can improve India's stature in the international arena and help fulfil its aspirations to play the role of a net security provider.
- ▶ **External security:** India also has a direct interest in de-escalating tensions on the Korean Peninsula, due to palpable nuclear threat.

Barriers to India's leadership in global peace-making efforts

- ▶ **Regional Conflicts:** Persistent tensions with neighbouring Pakistan and China.
- ▶ **Domestic Challenges:** Internal issues such as internal conflicts, insurgencies detract from India's ability to project itself as a model for peace.
- ▶ **Resource Constraints:** Due attention and investment needed for domestic development challenges.
- ▶ **Geopolitical Alignments:** India's strategic partnerships, particularly with US and its involvement in the Quad, may be perceived as aligning with Western interests, potentially undermining its neutrality.
- ▶ **Diplomatic Capacity:** India's diplomatic network and influence are relatively limited, affecting its capacity to mediate complex international disputes effectively.

BRIEF BACKGROUND

India's Contributions/Potential to promoting International Peace

- ▶ **Voice of the Global South:** India acts as a bridge between Global South and North. E.g., evident from its efforts to include African Union (AU) into G20, amplifying southern voices.
- ▶ **Non-Alignment Movement (NAM):** Established India as a neutral mediator during the Cold War.
- ▶ **Conflict Resolution Experience:** India's experience in addressing both internal and regional conflicts, positions it as a potential peacemaker.
- ▶ **Peacebuilding through Development Partnership:** E.g., in Africa and Afghanistan through ITEC Programmes, building infrastructure.
- ▶ **Cultural Diplomacy:** India's civilisational ethos reflected in philosophy of 'Vasudhaiva Kutumbakam'.
- ▶ **Active participant in UN peacekeeping:** India's active participation in multilateral forums like the United Nations Peacekeeping underscores its commitment to global peace and cooperation

India's contributions to UN peacekeeping missions

- ▶ Participated in >49 missions.
- ▶ Currently, Indian Armed Forces deployed across 9 countries in peacekeeping missions.
- ▶ Contributed > 2, 53, 000 troops, the largest number from any country.
- ▶ First country to deploy All Women Contingent in 2007 to United Nations Mission in Liberia (UNMIL).

Related News

Manama Declaration: Declaration, adopted by the Arab League, called for deploying UN Peacekeepers (UNPK) in occupied Palestinian territory until a two-state solution to the Israel-Palestine conflict is implemented.

Way Forward



India's Role as Vishwabandhu (the world's friend): India must adopt a more proactive stance in global peacemaking.



Partnerships: India can contribute more to peace-making efforts, alongside like-minded nations powers (like South Africa, Brazil, Indonesia etc) and traditional Western peacemakers (Switzerland, Norway, etc.)



Capacity building: Form peace teams within the Ministry of External Affairs and think tanks to study global conflicts and develop resolution strategies similar to Norway's peace unit in Oslo.

2.3.2. India and Global South



CONTEXT

India hosted the third Voice of Global South Summit in virtual format.

ANALYSIS



Challenges faced by Global South

- ▶ **Underrepresentation in global forums:** E.g. Exclusion of African and Latin America from permanent membership of UNSC.
- ▶ **High Public Debt:** E.g. As per UNCTAD debt in developing countries is rising at twice the rate than developed countries.
- ▶ **Obsolete global governance and financial institutions:** E.g. dysfunctional WTO's appellate dispute settlement mechanism.
- ▶ **Disproportionate vulnerability to climate change.** E.g. As per **WMO's Report'** Pacific Islands are at higher risk due to the increasing sea level.
- ▶ **Divergence from Global North:** E.g. lack of consensus over interpretation of democracy, human rights, etc.

Significance of Global South for India

- ▶ **International influence:** Support India's aspiration of being the voice of the Global South.
- ▶ **Strategic consideration:** Part of India's "multidirectional alignment" strategy. It also helps to offset China's influence.
- ▶ **Economic development:** Global South can provide abundant resources and provide a market for Indian products.

How is India positioning itself as a voice for Global South?

- ▶ **By undertaking projects:** Extending financial, budgetary and humanitarian assistance to partner countries to aid them in mitigating economic challenges and overcome crises.
- ▶ **Capacity building and emerging as 1st responder of the Global South.** E.g. India-UN Capacity Building Initiative, Vaccine Maitri initiative during Covid-19.
- ▶ **Leading the Global Climate Agenda:** E.g. ISA & CDRI, supporting CBDR.
- ▶ **Advocacy of issues relevant for Global South:** E.g. The induction of the African Union into the G20.

BRIEF BACKGROUND

- ▶ India hosted the **1st Voice of Global South Summit** in January 2023 and the 2nd edition was held in November 2023, both virtually.
- ▶ The Voice of Global South Summit is an **extension of India's philosophy of Vasudhaiva Kutumbakam.**

Key Highlights of the 3rd VOGSS

- ▶ **Participation:** 123 countries (China & Pakistan not invited)
- ▶ **Theme:** An Empowered Global South for a Sustainable Future.
- ▶ **India has proposed** a comprehensive "Global Development Compact".

What is Global South?

- ▶ Refers to technically and socially less developed countries which are located in Southern Hemisphere, primarily in Africa, Asia, and Latin America.
- ▶ **Brandt Report** proposed a division between North and South countries based on various parameters such as technological advancement, GDP etc.

India's Initiatives showcasing advocacy for Global South



Social Impact Fund: India will contribute \$25 million for accelerating Digital Public Infrastructure (DPI) in Global South.



Global South Young Diplomat Forum: Launched to promote education and capacity building.



Induction of African Union into G20: As a permanent member during India's G20 Presidency.



Vision of Aarogya Maitri: One World-One Health is India's mission for health security.

- ▶ **Reforming multilateral institutions:** E.g. demand for broadening of the UNSC’s permanent membership.
- ▶ **Alternative Mechanisms on issues like democracy and human rights:** E.g. based on Panchsheel, Gujral Doctrine and Principle of Non- Aligned Movement.

Challenges for India in leading the Global South

- ▶ **Diverse Interests:** Due to its social, cultural, economic diversity, it’s difficult to align into a unified stance.
- ▶ **Competition with China:** BRI, cheque book diplomacy.
- ▶ **Diplomatic Challenge:** Balancing strategic partnerships with powers such as USA, Russia while trying to represent Global South can be diplomatically challenging.
- ▶ **Limited Comprehensive National Strength:** India’s limited national strength and poor manufacturing industry, coupled with low S&T innovation and labour quality, pose challenges.
- ▶ **Issue with energy transition:** India faces criticism for its reliance on fossil fuels and challenges in meeting its own climate commitments. E.g. Western Countries criticized India after it opposed a commitment to “phase out” coal at COP 26

2.3.3. Indian American Diaspora



CONTEXT

Report by BCG and Indiaspora highlights contributions of Indian Americans to US Society.

ANALYSIS



Contributions of Diaspora in USA:

- ▶ Despite constituting only about 1.5% of U.S. population, Indian diaspora has made substantial contributions to country.
- ▶ **Economic impact:** CEOs of Indian origin head 16 Fortune 500 companies. E.g., Business Leaders include **Satya Nadella, Shantanu Narayen (Adobe)** etc.
- ▶ **Cultural Influence:** Wide celebration of **Diwali and Holi**, celebrated chefs e.g. **Vikas Khanna**, Wellness practices with Indian Roots e.g. **Deepak Chopra**
- ▶ **Innovation, Research, and Development:** **13% of US scientific publications** had Indian American co-author. **Famous personalities include** Har Gobind Khorana, Abhijit Banerjee, Manjul Bhargava.
- ▶ **Government and Public Services:** **Kamala Harris** (first woman Vice President of Indian descent), **Bobby Jindal** (first Indian American Governor) etc.

Initiatives for diaspora engagement by India



Know India Programme (KIP): By Ministry of External Affairs



Pravasi Bharatiya Divas: celebrated on 9th January once every 2 years



Indian Community Welfare Fund (ICWF)

Benefits for India:

- ▶ **Economic:** **US** is top source of remittance (\$26B out of \$113 billion in 2022-2023), Since 2000, US companies have invested \$ 63 billion in FDI.
- ▶ **Brain Gain:** ~20% of Indian unicorns have co-founders who have leveraged US higher education. E.g. **Rahul Chari (PhonePe), Harsh Jain and Bhavin Seth (Dream11)**.
- ▶ **Political: Diplomacy and Lobbying** (E.g. Indo-US civil nuclear deal), Indian diaspora in global institutions E.g. **Gita Gopinath, Raghuram Rajan, Soumya Swaminathan** etc
- ▶ **Cultural Diplomacy & Soft Power:** 1 in 10 Americans practices **yoga** (2023), spreading of Indian **cuisine & Ayurveda**.
- ▶ **Indo-US scientific collaboration:** E.g. **NISAR, iCET** etc.

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2.3.4. International Humanitarian Law



CONTEXT

2024 marks the 75th anniversary of the Geneva Conventions of 1949 which is the cornerstone of International Humanitarian Law (IHL).

ANALYSIS



Important Principles of IHL

- ▶ **Principle of distinction:** Distinguish at all times between civilians & combatants.
- ▶ **Principle of proportionality:** Requires parties to anticipate incidental harm provided that they are reasonably foreseeable.
- ▶ **Principle of precaution:** Requires parties to an armed conflict to take constant care to spare the civilian population.

Challenges in effective enforcement of IHLs

- ▶ **Selective compliance with IHL:** Due to states prioritizing national security over humanitarian obligations.
- ▶ **Rise of non-state armed groups:** Which often do not recognize IHL.
- ▶ **Lack of effective enforcement mechanisms:** E.g., In the Syrian Civil War enforcement has been inconsistent.
- ▶ **Sovereignty can limit international jurisdiction,** complicating efforts to hold violators accountable. E.g., Myanmar.
- ▶ **Use of Veto by P5 (permanent members):** To prevent decisive action against IHL violations. E.g., During the Syrian Civil War, Russia and China repeatedly used their veto power.
- ▶ **Limited mandate of Peacekeeping missions:** Which restrict ability enforce IHL. e.g., UN Mission in Darfur.
- ▶ **Use of autonomous weapons systems:** Questions about compliance with IHL.
- ▶ **Application of IHL in cyberspace:** Is still underdeveloped.

India's efforts to enforce IHL

- ▶ **Constitutional:** Article 51 directs the State to promote international peace and security.
- ▶ **Military training and awareness:** Indian Armed Forces incorporate IHL in their training programs, etc.
- ▶ **Peacekeeping operations:** India is one of the largest contributors to United Nations peacekeeping missions.
- ▶ **Dialogues with non-state actors:** To encourage adherence to humanitarian norms. E.g., J&K.

BRIEF BACKGROUND

Geneva Conventions are a series of treaties on the treatment of civilians, Prisoners of War (PoWs), and soldiers who are otherwise rendered hors de combat ("outside the fight") or incapable of fighting.

About International Humanitarian Law

- ▶ **IHL:** Rules that seek for humanitarian reasons to limit the effects of armed conflict and protect persons who are not or who are no longer participating in hostilities.
- ▶ **4 Geneva Conventions of 1949** and its 3 Additional Protocols form the foundation of the modern IHL.
 - ▷ These have been **universally acceded to** or ratified by all the countries.
 - ▷ It applies in **all cases of declared war**, or in any other **armed conflict between nations**.
- ▶ **Other treaties concerning IHL include:**
 - ▷ **1954 Hague Convention** for the Protection of Cultural Property.
 - ▷ **1972 Biological Weapons Convention.**
 - ▷ **1993 Chemical Weapons Convention.**
 - ▷ **1998 Rome Statute** for International Criminal Court.

International Human Rights Laws (IHRLs) are different from IHL.

- ▶ IHL applies exclusively in **armed conflict** whereas IHRL applies both in **peacetime** and **during armed conflict**.
- ▶ IHL binds **all parties to an armed conflict** establishing an **equality of rights and obligations** between the **State** and the **non-State side**.
- ▶ IHRL, however, explicitly governs the **relationship between a State and persons who are on its territory and/or subject to its jurisdiction**.

Way Forward



Reforms in UNSC to make it more representative and restrict the use of veto power & **enhance role of regional organizations.** E.g., International Committee of the Red Cross, etc.,



Encourage states to incorporate IHL into their domestic legal systems & encourage non-state actors to sign '**Deeds of Commitment**' to ensure respect for humanitarian norms by them.



Ensure that peace agreements explicitly include commitments to adhere to IHL



Develop specific guidelines and protocols for applying IHL in cyber warfare.



Internationally regulate development and deployment of autonomous weapons systems.

2.3.5. South China Sea Tensions & International Trade



CONTEXT

Reports of aggressive and dangerous conduct by Chinese vessels in the fiercely contested South China Sea have surged over the past 17 months.

More on the News

Recently, China has demanded Malaysia to immediately halt all activities in an oil-rich area off Sarawak waters. This is despite the fact that the reefs are only 100 km from Malaysia and almost 2,000 km from mainland China.

ANALYSIS



Reasons for the conflict in South China Sea (SCS)

- ▶ **Territorial disputes:** China's assertiveness in the SCS has steadily increased. **Between 2013-2015:** China built artificial islands with a total area of close to 3,000 acres on seven coral reefs it occupies in the Spratly Islands.
 - ▷ China has **fully militarized three islands in SCS.**
- ▶ **Resource competition:** Approximately 3.6 billion barrels of petroleum and other liquids and 40.3 trillion cubic feet of natural gas in the SCS. SCS fisheries generate \$100 billion annually.
- ▶ **Nationalism and domestic politics:** Both China and other littoral countries have used nationalistic rhetoric to posture their claims in SCS.
- ▶ **Strategic interests:** The SCS is the shortest way to get from the Pacific to the Indian Ocean, and is host to some of the busiest shipping lanes in the world.

How SCS dispute pose threat to global trade?

- ▶ **Chinese aggression:** The Chinese military has staged increasingly aggressive actions in the seaway recently, including clashes with Filipino ships, fueling fears of a full-scale conflict.
- ▶ **The United States:** It has repeatedly warned that it is obligated to defend the Philippines if they were to be attacked, including in SCS.
- ▶ **Taiwan issue:** Beijing's use of military force to bring the democratic island under its control could further raise tensions in SCS.
- ▶ **Potential blockade of Malacca Strait during China-Taiwan conflict:** It could severely disrupt global trade while exacerbating existing congestion and security issues.
- ▶ **Increased Shipping costs:** Escalating tensions in the SCS could create a third global shipping crisis front.

BRIEF BACKGROUND

Geographical location of SCS

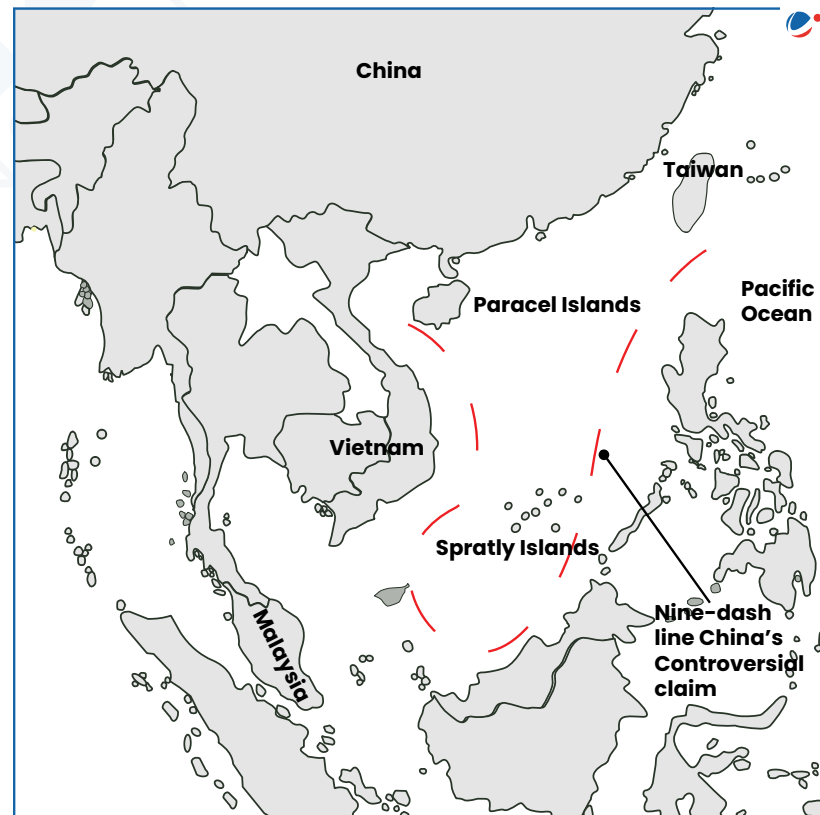
- ▶ The SCS is an **arm of the western Pacific Ocean** around Southeast Asia.
- ▶ It is located in south of China, east and south of Vietnam, west of the Philippines, and north of Borneo.
- ▶ It contains more than **200 mostly uninhabitable** small islands, rocks and reefs.

The Conflict

- ▶ **1992:** China lays claim to the entire SCS based on its historical right to the area dating from the Western Han dynasty.
- ▶ **2016:** Permanent Court of Arbitration rules in favor of Philippines and finds "nine-dash line" has no legal basis.

Importance for Global Trade

- ▶ **About a third of global maritime trade** passes through the 3.5 million square kilometer seaway annually.
- ▶ **Around 40% of petroleum products** traded globally are delivered via the sea every year.



India & South China Sea

- ▶ **India's Involvement:** India has expanded its influence in the SCS through its **Look East Policy**.
- ▶ **Strategic Importance for India:**
 - ▷ **Waterway:** The SCS connects the Indian Ocean with the East China Sea via the Malacca Strait.
 - ▷ **Trade:** Majority of India's international trade is sea-borne, with half passing through the Malacca Straits.
 - ▷ **Significant potential energy reserves:** Maritime assets such as Oil Exploration Block 128, off the coast of Vietnam that the two countries are jointly exploring.
- ▶ **India's Objectives in the SCS:** India holds a principled position where it asserts that the **maritime domains should be free, open and "inclusive"**.
- ▶ **India's Strategy:**
 - ▷ **Deepen economic and strategic ties** with ASEAN countries.
 - ▷ **Conduct joint naval exercises, military training, and arms sales with regional states (BrahMos to Philippines).**
 - ▷ **Engage in offshore energy development projects** in the SCS.
- ▶ **Policy Initiatives:** Act East, Neighbourhood First and Security and Growth of All in the Region (SAGAR) policies, along with strategic alignment by joining QUAD.

Way Forward



Diplomatic Engagement:
Involvement in candid and productive discussions among the contending parties, integrating impartial arbitrators if required.




Confidence-Building Measures: Application of procedures to augment transparency, communication, and mutual confidence among regional entities.



Compliance with International Norms:
Observance and fortification of the United Nations Convention on the Law of the Sea (UNCLOS) and corresponding international standards.



Regional Collaboration:
Reinforcement of regional organizations and frameworks to encourage cooperation and the peaceful arbitration of disputes.



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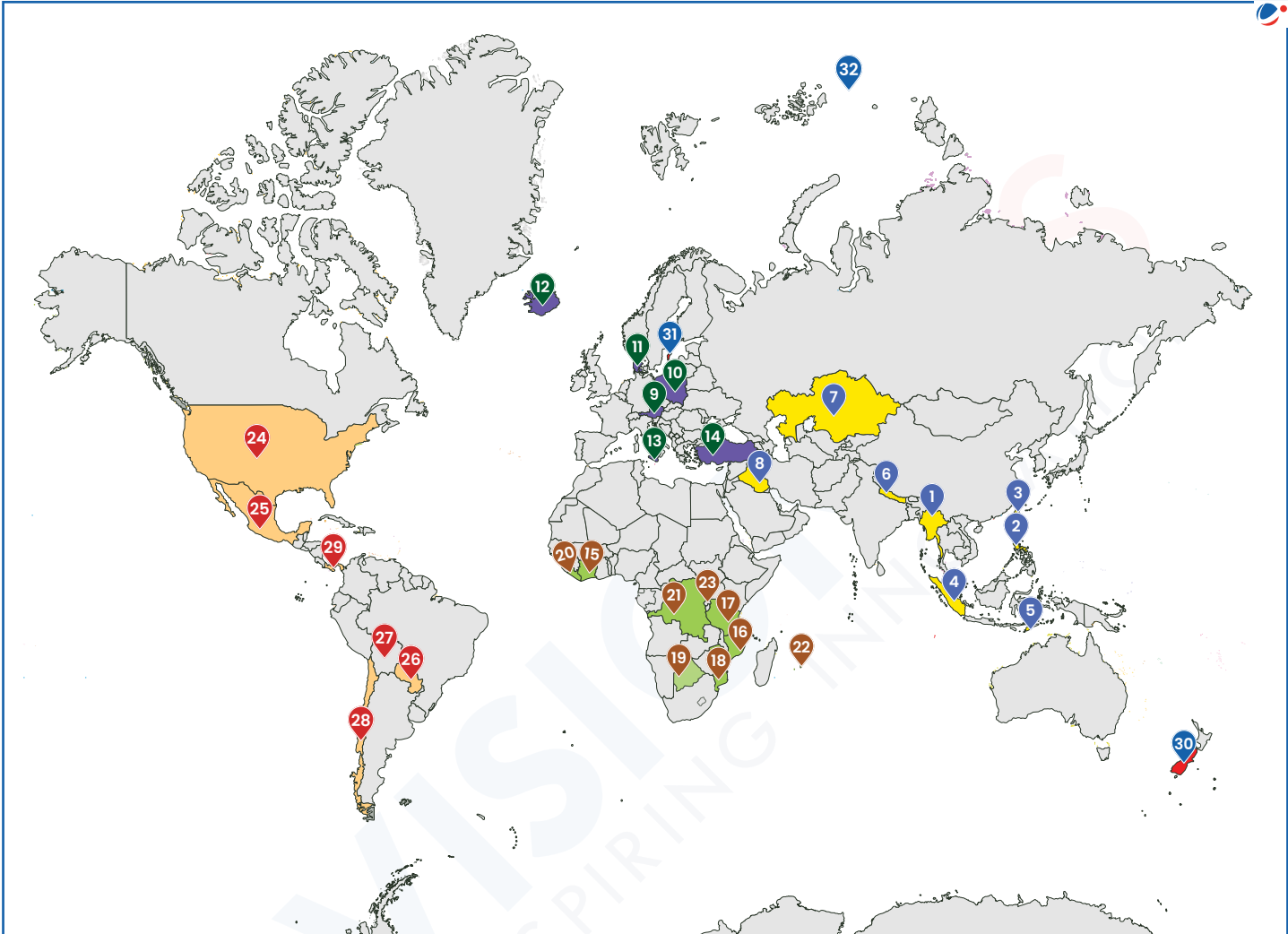


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2.4. PLACES IN NEWS



Current Affairs Quarterly Revision (June to August 2024)

Places	Context
Asia	
1.Thailand (Bangkok)	Thailand’s senate has approved bill to legalize same-sex marriage.
2.The Philippines (Manila)	Mount Kanlaon: Recently Cold Lava rushed through streets as Mount Kanlaon erupted in
3.Taiwan (Taipei)	Mutual Recognition Agreement between India and Taiwan for Organic Products has been implemented.
4.Indonesia (Jakarta)	Scientists have discovered the world’s oldest-known cave painting inside Leang Karampuang cave in Sulawesi, Indonesia, dating back at least 51,200 years.
5.Timor-Leste (Dili)	Indian President has been conferred with the highest civilian award of Timor-Leste.
6.Nepal (Kathmandu)	India and Nepal signed MOU to provide grant assistance for the launch of Nepal’s Munal Satellite.
7.Kazakhstan (Astana)	Astana hosts 24th Summit of Shanghai Cooperation Organisation (SCO).

8.Iraq (Baghdad)	UNSC voted to end the United Nations Assistance Mission in Iraq (UNAMI) in Iraq established in 2003 following the United States-led invasion.
Europe	
9.Austria (Vienna)	Prime Minister visited Austria to highlight 75 years of diplomatic relations.
10.Poland	India and Poland elevate ties to Strategic Partnership to mark 70 years of diplomatic relations. New World Soil Health Index announced by UNESCO at International conference on Soils held in Morocco.
11.Denmark (Copenhagen)	Denmark, a major pork and dairy exporter, will introduce a tax on
12.Iceland (Reykjavík)	Sundhnukagigar Volcano in southwestern Iceland erupted for the fifth time since December 2023
13.Slovenia (Ljubljana)	Becomes latest European country to recognize a Palestinian state.
14.Turkey (Ankara)	World's oldest calendar, dating back nearly 13,000 years was discovered at Göbekli Tepe, an ancient site in Turkey.
Africa	
15.Ivory Coast (Yamoussoukro)	Ivory Coast became the first country to roll out the new R21/Matrix-M malaria vaccine to children below 2 years.
16.Malawi (Lilongwe)	Malawi Vice President was killed in a plane crash in the Chikangawa mountain range.
17.Tanzania (Dodoma)	Lake Natron Climate change is impacting Tanzania's Lake Natron. Mount Kilimanjaro: Expedition team under the aegis of the Ministry of Defence unfurled the Indian national flag atop Uhuru Summit of Kilimanjaro (located in Tanzania).
18.Mozambique (Maputo)	Import of Tur dal by India resumed from the Nacala Port in Mozambique post disruption.
19.Botswana (Gaborone)	World's second-largest diamond has been unearthed in Botswana.
20.Liberia (Monrovia)	Group of senators in Liberia has proposed to relocate its Capital city due to recurring flash floods.
21.Democratic Republic of Congo (Kinshasa)	First secretary-level meeting between defence ministries of India & Democratic Republic of Congo (DRC).
22.Mauritius (Port Louis)	Mauritius India's first overseas Jan Aushadhi Kendra (JAK) inaugurated in Mauritius.
23.Rwanda (Kigali)	Rwanda's incumbent President wins. fourth term.
America	
24.The US (Washington, D.C.)	Guam Island: INS Shivalik visited Guam, an island territory of the United States.
25.Mexico (Mexico City)	Claudia Sheinbaum elected as the first woman president of Mexico.
26.Paraguay (Asunción)	Paraguay becomes 100th full time member of International Solar Alliance (ISA)
27.Bolivia (La Paz/ Sucre)	Bolivia has been hit by an economic turmoil fueled by dependence on U.S. dollar, draining international reserves and mounting debts. Bolivia became a full member of MERCOSUR.
28.Chile (Santiago)	A study by Researchers at the University of Chile found that Chile's Atacama salt flat is sinking due to lithium brine extraction.
29.Panama (Panama City)	Panama becomes first nation to evacuate island community from island of Gardi Sugdub Island over climate change impact.

Oceania

30. New Zealand (Wellington)

President of India addressed the New Zealand International Education Conference, where India was the "Country of Honour" this year.

Others

31. Baltic Sea

New Study reveals thousands of tonnes of methane may have dissolved in Baltic Sea due to leakage in Nord Stream Pipelines.

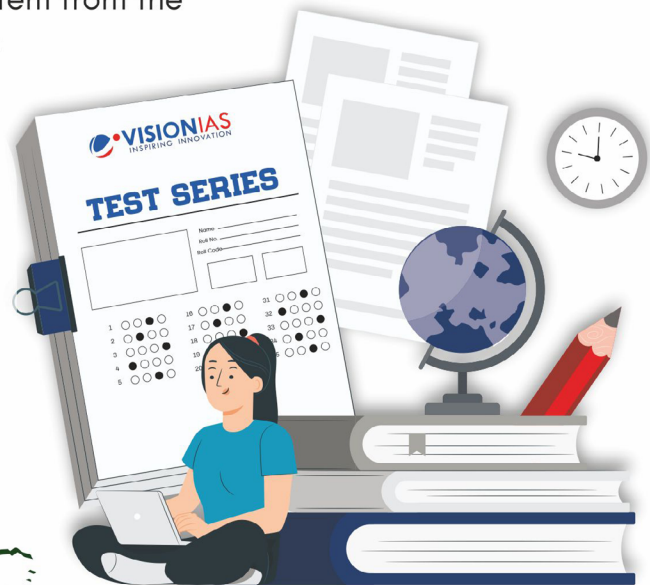
32. Arctic

According to a study, melting permafrost are releasing toxic mercury into the Arctic.

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2.5. TEST YOUR LEARNING

MCQs

1. Consider the following pairs:

	Bhutan Signing cooperation agreement for boundary delimitation	Country
1	Ladoga Lake	Norway
2	Kaliningrad Oblast	Lithuania
3	Lake Baikal	Mongolia

How many of the pairs given above are correctly matched?

- (a) Only one pair
- (b) Only two pairs
- (c) All three pairs
- (d) None of the pairs

2. Consider the following statements:

Statement-I: International Humanitarian Law (IHL) and International Human Rights Laws (IHRs) share identical jurisdictional scope, with both applying exclusively during armed conflicts to establish equality between State and non-State actors.

Statement-II: The Geneva Conventions, along with the 1954 Hague Convention, 1972 Biological Weapons Convention, and 1993 Chemical Weapons Convention, form the framework of modern International Humanitarian Law.

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

- (a) Both Statement-I and Statement-II are correct, and Statement-II explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is incorrect

3 Consider the following statements:

1. Japan is bounded by the Sea of Japan to the west, which separates it from South Korea, Indonesia, and Russia's southeastern Siberia.

2. India and Japan signed Comprehensive Economic Partnership Agreement (CEPA) signed in 2011.

Which of the statements given above are correct?

- (a) 1 only
- (b) 2 only
- (c) 1 and 2 both
- (d) None are correct

4. Consider the following statements about Para-Diplomacy:

1. According to MEA, State Governments should not intrude into matters that are beyond their constitutional jurisdiction.
2. Ministry of External Affairs has also set up a new division – “States Division” in 2014 to coordinate with States and Union Territories to facilitate their efforts to promote their exports and tourism

Which of the statements given above are correct?

- (a) 1 only
- (b) 2 only
- (c) 1 and 2 both
- (d) None are correct

5. Consider the following statements about Global South:

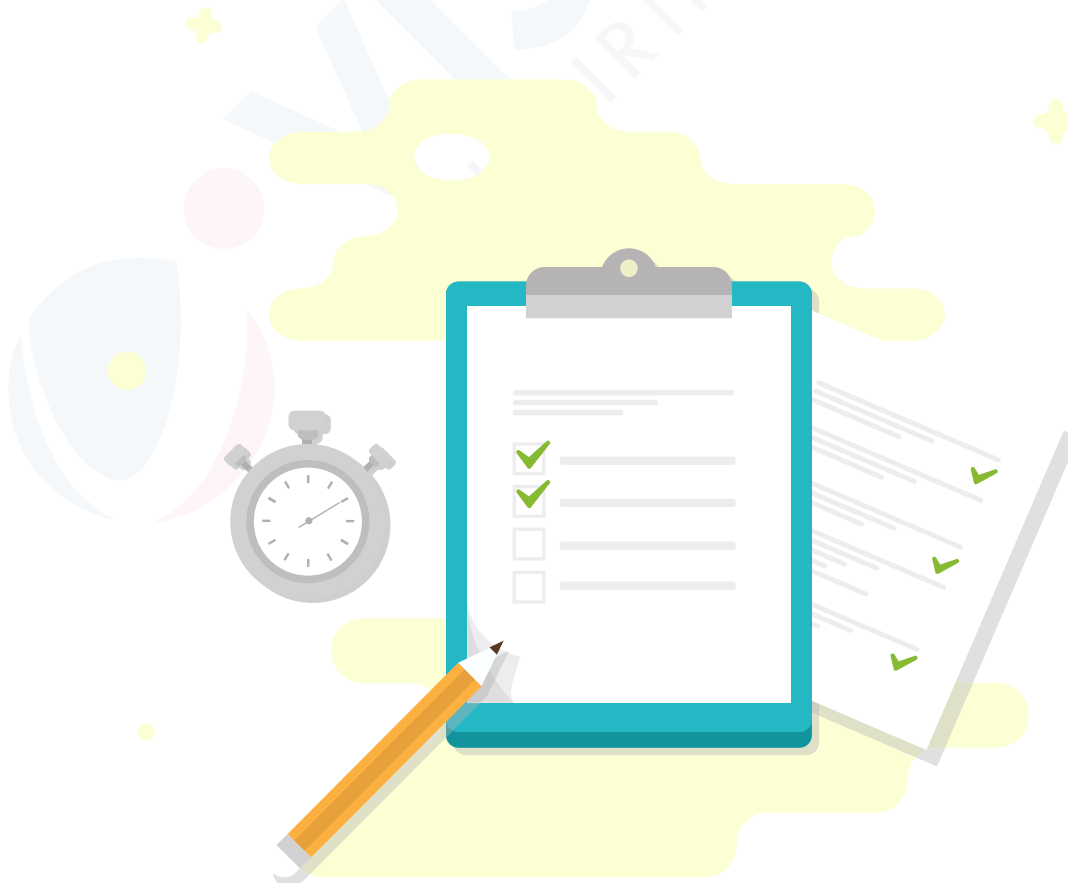
1. Refers to technically and socially less developed countries which are located in Northern Hemisphere.
2. Brandt Report proposed a division between North and South countries based on various parameters such as technological advancement, GDP etc

Which of the statements given above are correct?

- (a) 1 only
- (b) 2 only
- (c) 1 and 2 both
- (d) None are correct

Questions

1. Analyze how minilateral partnerships advance India’s strategic autonomy and global influence, citing key examples like QUAD, I2U2, and IBSA. Also discuss associated challenges. (150 words)
2. Examine how India positions itself as a voice for the Global South, discussing key initiatives and challenges. Analyze its significance for India’s global aspirations while addressing constraints like Chinese competition. (250 words)



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ECONOMY



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3.1. GROWTH AND DEVELOPMENT

3.1.1. India's Structural Transformation



CONTEXT

IMF released a Working Paper titled 'Advancing India's Structural Transformation and Catch-up to the Technology Frontier'.

ANALYSIS



Status of India's Structural Transformation:

- ▶ India experienced robust economic growth over past few decades, averaging over **6% real GDP growth since 2000**. However, this growth has not translated evenly across all sectors.
- ▶ **Structural change in output:**
 - ▷ **Share of agriculture** and allied activities declined from 42% in 1972-73 to 15% in 2019-20.
 - ▷ **Industry's Share** rose from 24% in 1972-73 to 25.9% in 2020-21 and **Services' share** increased from 34.5% in 1970 to 55.3% in FY 2020.
- ▶ **Structural change in Employment:**
 - ▷ Agriculture's share in employment fell from 73.9% (1972-73) to 42% (2018-19).
 - ▷ Industry's & Services' share rose from 11.3% and 14.8% (1972-73) to 24% and 30.7% (2019-20) respectively.
- ▶ **Presence of informal sector:** Between 1983 and 2019, share of the non-farm sector in employment rose 20%, but the majorities of jobs were in the informal sector.
- ▶ **Urbanization:** By 2036, about 600 million people (40% of population), up from 31% in 2011 will live in urban areas.



Read From Essential Material

Chapter 2, 'Understanding Economic Development' of Class X NCERT

BRIEF BACKGROUND

Structural Transformation

- ▶ It refers to transition of an economy from low productivity and labour-intensive economic activities to higher productivity and skill intensive activities.
- ▶ **Indicators of Structural Transformation**
 - ▷ **Shift from agriculture** to modern, higher-productivity sectors (E.g. Services).
 - ▷ **Sectorial distribution:** measured through employment distribution, value-added distribution etc.
 - ▷ **Migration:** Rural-to-urban migration
 - ▷ **Demographic transition:** From high birth and death rates to low.

Steps Taken for Structural Reforms



Tax reforms
E.g. GST & corporate tax rationalization



Production-Linked Incentive (PLI) scheme to attract investment



Insolvency & Bankruptcy Code to improve the credit culture



Labour reforms (4 labour codes): To enhance Ease of Doing Business



Expansion of digital infrastructure (e.g., Bharat Net, India Stack)

Key Issues Highlighted by paper in India's structural Transformation:

- ▶ **Sectoral Imbalance:** Aggregate output of agriculture is 15% in 2019, however it still accounts for 42% of employment.
- ▶ **Uneven tech-adoption:** Services outperformed manufacturing tech-adoption.
- ▶ **Rise of low skill jobs:** E.g., Construction sector employed 12% of workers in 2019.
- ▶ **Low Productivity:** Labour in manufacturing and services were over 4.5 times more productive than in agriculture in 2019-20.
- ▶ **Slow jobs creation:** India needs at least 143-324 million jobs by 2050.

Key Policy Recommendations:

- ▶ **Strengthening Education & Skilling:** to enable workers transition to higher productivity sectors.
- ▶ **Advancing Labor Market Reforms** to further enhance labor market flexibility.

- ▶ **Fostering Trade Integration with global markets:** e.g. signing bilateral trade agreements.
- ▶ **Others:** Strengthening **Social Safety Net**, continued **public investment push**, facilitating **Access to Credit** for MSMEs and reducing bureaucratic hurdles etc.

3.1.2. Sustainable Development Goals



CONTEXT

UN Department of Economic and Social Affairs (UN DESA) released the Sustainable Development Goals (SDGs) Report 2024.

ANALYSIS



Key findings of the report

- ▶ **Overall Progress**
 - ▷ Only 17% of the SDGs targets are expected to be achieved by 2030. Nearly half (48%) exhibit moderate to severe deviations from desired trajectory.
 - ▷ 18% have stagnated, & 17% have regressed below 2015 baseline levels.
- ▶ **Current Status of Key SDGs**
 - ▷ **No Poverty (SDG1):** Share of the world's population living in extreme poverty rose from **8.9% in 2019 to 9.7% in 2020**.
 - ▷ **Good Health and Wellbeing (SDG3):** More than **half the world's population** is not covered by essential health services.
 - ▷ **Decent work & Economic Growth (SDG8):** Over 2 billion workers in informal jobs lacking social protection in 2023.
 - ▷ **Sustainable Cities & Communities (SDG11):** In 2022, 24.8% of the urban population lived in slums or informal settlements, slightly lower than 25% in 2015.
 - ▷ **Climate Action (SDG13):** In 2022, global greenhouse gas emissions reached a new record of 57.4 gigatons of CO2 equivalent.
- ▶ **India's status in achieving SDGs**
 - ▷ **SDG-3:** The Maternal Mortality Ratio has declined **from 130 per 1,00,000 live births in 2014-16 to 97 per 1,00,000 live births in 2018-20**.
 - ▷ **SDG-4:** Gross Enrolment Ratio in higher secondary education has **increased from 48.32 in 2015-16 to 57.60 in 2021-22**.
 - ▷ **SDG-7:** The installed renewable energy generating capacity has shown a steady increase in value from 63.25 watts per capita in 2014-15 to **136.56 watts per capita in 2023-24**.
 - ▷ **SDG-9:** Number of patents issued **rose from 6,326 in 2015-16 to 1,03,057 in 2023-24**.



Read From Essential Material

Chapter 9, 'Indian Economic Development' of Class XI

BRIEF BACKGROUND

About SDGs

- ▶ **Background:** The concept of sustainable development was introduced by **1987 Brundtland Commission Report** as development that meets needs of present without compromising ability of future generations to meet their own needs.
- ▶ Subsequently, **United Nations Millennium Development Goals (MDGs)** were signed in 2000 which committed world leaders to combat poverty, hunger, environmental degradation etc.
 - ▷ **Each MDG has targets set for 2015** and indicators to monitor progress from 1990 levels.
- ▶ **In 2015, UN adopted 2030 Agenda for Sustainable Development** which sets out **17 Goals**, which include 169 targets to achieve them all by 2030.

Reasons of lagging in progress of SDG target



COVID-19 Pandemic
undone progress
made in past



Escalation of conflicts e.g.,
Ukraine, Gaza etc.



Financial constraints
e.g., developing
countries' needed **\$6 trillion**
for climate action
plans by 2030



Environmental challenges i.e.,
climate change,
desertification



Disasters like
heatwave, floods
etc.

Way forward

- ▶ **Peace:** Resolve ongoing armed conflicts through dialogue and diplomacy, & prevent future conflicts.
- ▶ **Finance:** Need more equitable, representative and effective international financial system.
 - ▷ Must deliver concrete changes to international policies through **Summit of the Future, G20**, etc.
- ▶ **Tailored Approaches:** Countries should prioritize a **subset of SDGs** based on national priorities, capacities, and immediate needs.
- ▶ **Create synergies between the different targets:** For e.g., efforts to eradicate poverty must go hand in hand with improving education opportunities and gender equality.

3.1.3. India's Trade Deficit

CONTEXT

According to official data from Union Ministry of Commerce and Industry, in the FY 2023–24, India recorded trade deficit with 9 out of its top 10 trading partners.

ANALYSIS

Current Status of India's External trade (FY 2023–24)

- ▶ **Trade deficit (negative trade balance)** occurs when country's value of imports exceeds exports.
- ▶ **China, USA, UAE, Russia, and Saudi Arabia** are India's largest trading partners. (in descending order)
- ▶ India's **trade deficit with China, Russia, South Korea, and Hong Kong** increased as compared to 2022–23, while it narrowed with **UAE, Saudi Arabia, Indonesia, and Iraq**.
- ▶ **USA, Netherlands, UK, Belgium, and Italy** are top 5 trading partners with which India has **trade surplus**.
- ▶ **WTO's World Trade Statistical Review 2023:** India retains **8th position in global agriculture exports in 2023**. India ranked **18th in merchandise exports and 7th in services exports**.



Read From Essential Material

Chapter 6, 'Introductory Macroeconomics' of Class XII

BRIEF BACKGROUND

Impact of higher trade deficit on Economy

- ▶ **Negative**
 - ▷ Depletion of Forex reserves to pay for excess imports, leads to **depreciation of domestic currency**.
 - ▷ **Widening current account deficit** may adversely affect credit rating of country and raise borrowing costs.
- ▶ **Positive**
 - ▷ **Access to wider range of goods**, increased **domestic investment** by imports of capital goods, etc.

Reasons behind India's higher trade deficit



Reliance on imported inputs, including crude oil & pharmaceutical ingredients



Changing consumption patterns, including increased demand for consumer durables, luxury goods etc.



Structural factors i.e., slow growth of manufacturing sector, higher logistics cost, infrastructure bottlenecks etc.



Domestic policies like inverted duty structure, frequent bans on exports of commodities.



Others Sub-optimal utilization of FTAs, imposition of non-tariff barriers by developed countries etc.

Conclusion

To address its trade deficit, India should focus on boosting domestic manufacturing, improving infrastructure, and reducing reliance on imports. Additionally, policy reforms in logistics and export incentives will be crucial for long-term trade balance improvement.

Related News

Non-Tariff Measures (NTMs)

▶ India is 2nd largest user of NTMs in 2023 as per WTO's 'World Tariff Profiles' Report, 2024.

▶ **About Non-Tariff Measures (NTMs)**

- ▶ NTMs are defined as **policy measures, other than ordinary customs tariffs**, that can be potentially detrimental to international trade in goods, changing quantities traded, prices, or both.
- ▶ **Examples** - Quotas or price controls, Sanitary & Phytosanitary measures, Technical Barriers etc.
- ▶ Though many NTMs aim primarily at protecting public health or the environment, they also **affect trade through information, compliance, and procedural costs.**

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3.2. BANKING, FINANCE AND PAYMENT SYSTEM

3.2.1. Revised Priority Sector Lending Norms



CONTEXT

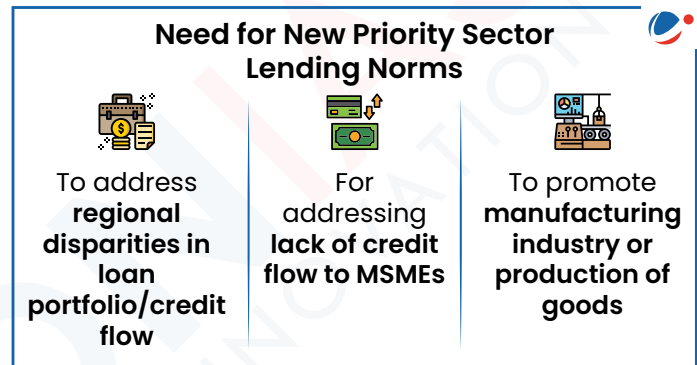
RBI revises priority sector lending (PSL) guidelines to promote small loan in economically disadvantaged districts with low average loan sizes.

ANALYSIS



Revised Priority Sector Lending Norms

- ▶ **Incentive framework:** It establishes an incentive framework for districts with lower credit flow starting from FY25.
 - ▷ More weight (125%) will be given to fresh priority sector loans in districts where loan availability is low (less than Rs 9,000 per person).
- ▶ **Disincentive framework:** In districts with high loan availability (more than Rs 42,000 per person), the loans will have a weight of 90%.
- ▶ **Other districts:** With exception of outlier districts with low credit availability and those with high loan sizes, all other districts will continue to have the current importance level of 100%.
- ▶ **MSME loans:** All bank loans to MSMEs shall qualify for classification under PSL.



About Priority Sector Lending (PSL)

- ▶ **Priority Sector** means those sectors which Government and RBI consider important for development of the country and are to be given priority over other sectors.
- ▶ **Objective:** To ensure that vulnerable sections of society and underdeveloped areas get access to credit. PSL was formalized in 1972.
- ▶ **Various Committees associated with PSL:** Gadgil Committee (1969), Ghosh Committee (1982).
- ▶ **Categories under PSL:** Agriculture, MSMEs, Export Credit, Education, Housing, Social Infrastructure, Renewable Energy and Others.
 - ▷ The sections have further sub-targets for the Category of Weaker Sections like Small and Marginal Farmers, Self Help Groups, SCs and STs, Persons with disabilities etc.

Targets /Sub-targets for Priority sector Lending for Different Types of Banks

Categories	Domestic commercial banks & foreign banks with 20 branches and above	Foreign banks with less than 20 branches	Regional Rural Banks	Small Finance Banks
Total Priority Sector	40% of Adjusted Net Bank Credit (ANBC) or Credit Equivalent of Off-Balance Sheet Exposures (CEOBE), whichever is higher	Same as Domestic commercial bank	75% of ANBC or CEOBE whichever is higher	75% of ANBC or CEOBE whichever is higher.
Agriculture	18% of ANBC or CEOBE, whichever is higher; out of which a target of 10% is prescribed for Small and Marginal Farmers	Not applicable	Same as Domestic commercial bank	Same as Domestic commercial bank
Micro Enterprises	7.5% of ANBC or CEOBE, whichever is higher	Not applicable	Same as Domestic commercial bank	Same as Domestic commercial bank
Advances to Weaker Sections	12% of ANBC or CEOBE, whichever is higher	Not applicable	15% of ANBC or CEOBE, whichever is higher	Same as Domestic commercial bank

Note: Priority Sector Lending guidelines is also applicable on Primary Urban Co-operative Banks.

Issues faced by livestock sector in India



Non-Performing Assets (NPAs): Outstanding loan in priority sector has significant negative impact on banks.



Increased costs: PSL increased administrative & transactional cost of banks.



Other issues with PSL: Low banks Profitability, increased Government Interference etc.

Way-forward

- ▶ **Strengthen Microfinance Institutions and Encourage Opening of "Small" Finance Banks** to ensure business model of "last mile connectivity."
- ▶ **Use of Technology:** E.g. Mobile banking app to increase the reach and efficiency of PSL, especially in rural and remote areas.
- ▶ **Create a robust credit infrastructure and Risk Assessment Tools:** To better evaluate the creditworthiness of borrowers and reduce the incidence of Non-Performing Assets (NPAs).

3.2.2. Finfluencers



CONTEXT

Securities and Exchange Board of India (SEBI) introduced rules for **unregistered 'finfluencers'** prohibiting regulated entities from dealing with them and also **introduced a delisting framework** for Investment and Holding Companies (IHC).

ANALYSIS



About Financial influencer or 'FinFluencer'

- ▶ **FinFluencer** is a person who gives **information and advice** to investors on financial topics – usually on stock market trading, personal investments like mutual funds and insurance, primarily on various **social media platforms**.
- ▶ **Sources of income:** **Advertisements** (passive income based on number of views), **Collaborations** to promote a financial product, **affiliate partnerships** etc.

Reasons for rise of FinFluencer

- ▶ **Lack of financial literacy:** Finfluencers aid in **new investor education and awareness creation**.
- ▶ **Increased retail investment:** Retail investors in the cash market turnover jumped from 33% in FY16 to 45 % in FY20 and FY21. (NSE)
- ▶ **Exponential increase in number of new investors:** **New client registrations hit a record 1.5 million in June 2021;** more than **double** the 0.6 million in June 2020.
- ▶ **Technological advancements:** Affordable smartphones, cheap data plans and digital payments helped finfluencers in **reaching the masses through social media platforms**.

BRIEF BACKGROUND

Regulatory action taken for Finfluencers

- ▶ The **SEBI (Investment Advisors) Regulations 2013** is a framework for people who give **financial advice for a fee**.
- ▶ **SEBI Consultation Paper to restrict the association** of SEBI registered intermediaries/regulated entities with **unregistered 'finfluencers'**.
- ▶ **Advertising Standards Council of India (ASCI)** revised its **guidelines**, mandating **SEBI registration** for influencers.
- ▶ **ASCI and YouTube in-house Rules** mandate **declaration of the content being paid or promotional** to make viewers better informed.

Global examples of regulation

- ▶ **Australia:** Upto 5 years jail for finfluencers operating without a license.
- ▶ **New Zealand:** Defined **code of behavior** for finfluencers and tiered mechanism of **licensing**.

Issues arising due to rise of Finfluencers



Lack of regulation & thus difficulty in fix any liability on finfluencer



Market manipulation e.g., Salasar Technologies stock prices manipulated by influencers.



May promote High-risk investments opportunities without providing appropriate risk disclosures



Ethical issues i.e. exploit psychological biases like herd behavior, confirmation bias etc.

Way Forward

- ▶ **Clear definitions:** Of terms like Finfluencers, so that they stand test of judicial – regulatory scrutiny.
- ▶ **Improve registration of financial advisors,** make mandatory certain disclosure requirements to avoid conflict of interest.
- ▶ **Transparency and data-led communication:** Like Real-time digital supervisory mechanism, having a Code of Conduct ensuring the financial information provided is “truthful, balanced, and data-led”.
- ▶ **Improved Grievance Redressal Mechanism:** This will enable investors report and seek relief for wrong investment advice themselves.

3.2.3. Credit-Deposit (CD) Ratio

CONTEXT

Reserve Bank of India raised concerns over bank’s high CD Ratio and asked them to **bridge the gap** between credit and deposit growth and **reduce CD ratio.**

ANALYSIS

- ▶ CD Ratio is a financial metric representing the **percentage of loans a bank has issued relative to its total deposits.**
- ▶ According to the RBI’s Financial Stability Report (refer to the graph):
 - ▷ **CD ratio has been rising since September 2021 and peaked at 78.8% in December 2023.**
 - ▷ **Over 75% of the banks with C-D ratios above 75% are private sector banks.**

Key Reasons for high CD ratio

- ▶ **Higher credit growth**
 - ▷ **Rising retail credit** (includes vehicle loans, personal loans, etc.).
 - ◊ From April 2022 and March 2024, **bank lending to the retail sector grew at a CAGR of 25.2%.**
 - ▷ Increasing loans to **businesses and MSMEs.**
- ▶ **Slower deposit growth:**
 - ▷ Banks are facing **stiff competition** with each other.
 - ▷ Additionally, customers are transitioning from savers to investors and **diverting funds to capital markets,** slowing deposit growth.

Impact of High CD Ratio

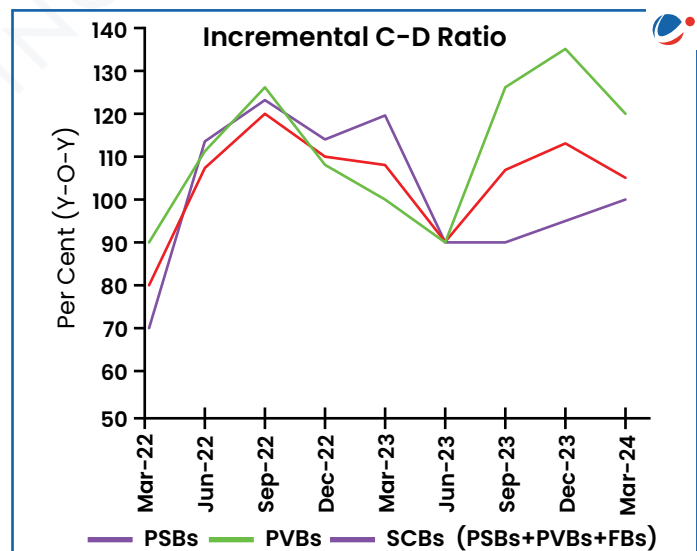
Bank may face:

- ▶ **Pressure on Net Interest Margins (NIM):** NIM is a measure of the **net return on the bank’s earning assets** like investment securities, loans, etc.
- ▶ **Liquidity risk:** Banks’ may be unable to timely meet payment obligations.
- ▶ **Credit risk:** Borrowers could default on their contractual obligations.



Read From Essential Material

Chapter 3 Money & Banking of Class XII NCERT



3.2.4. Long-Term Capital Gains (LTCG) & Indexation Benefit



CONTEXT

Lok Sabha cleared the Finance Bill, 2024 amending Long Term Capital Gain (LTCG) tax provision on immovable properties.

ANALYSIS



Key Provisions of Amendment Act

- ▶ Amendment continued **abolishment of indexation benefits**, however, **grandfathered properties** acquired prior to 23rd July 2024.
 - ▷ **Grandfather/legacy clause**, is an exemption that allows persons/entities to continue with activities or operations that were approved before implementation of new rules, regulations, or laws.
- ▶ **Choices to taxpayers:** Taxpayers can choose to pay the lower tax amount of the following two:
 - ▷ **Old scheme/regime** - Pay 20% LTCG tax with indexation benefit on sale of property acquired before July 23, 2024.
 - ▷ **New Scheme/regime** - Pay 12.5% LTCG tax without indexation.
 - ◊ However, for purchases of property after the cut-off date of July 23, 2024, only the new regime will be applicable.
- ▶ **Enhanced Exemption:** Exemption limit of 1 lakh for LTCG on listed equity, Equity oriented mutual fund and units of business trust has increased to 1.25 lakh.
 - ▷ Similarly, the rate for these assets for long-term has increased from 10 to 12.5%.

Concerns Associated with Amendments

- ▶ **Higher Tax Liability:** 12.5% LTCG tax without indexation may lead to a higher tax liability than 20% with indexation in several cases.
- ▶ **May increase black money transactions:** Due to potential sale of properties at circle rates (minimum price at which a real estate is to be sold).
- ▶ **Tax Evasion:** Higher tax liability could encourage undervaluing of assets resulting in a loss of tax revenue for government.
- ▶ **Disincentive for Investment:** Higher tax liability may discourage individuals from investing in property, particularly as a long-term asset.

Conclusion

Restoring the indexation benefit for LTCGs on property sales is a fair and equitable measure that benefits both taxpayers and the economy. However, it also raises concerns regarding unfair cutoff date, undervaluing of assets, tax erosion etc. Thus, there is need for careful consideration and potential adjustments to the LTCG tax regime to ensure a fair and equitable system for all taxpayers.

BRIEF BACKGROUND

What is Long-Term Capital Gains (LTCG) Tax?

- ▶ **Capital gains tax** is levied on the profit earned from the sale of capital assets, such as real estate, stocks and bonds.
 - ▷ There are 2 types of capital gains taxation - Long-Term Capital Gains (LTCG) Tax & Short-Term Capital Gains (STCG) Tax.
- ▶ **LTCG Tax** is levied on the profit earned from sale of assets held for longer periods with period depending on the type of asset.
- ▶ **Taxing LTCGs:** For equity shares & mutual funds, LTCG exceeding Rs 1.25 lakh is taxed at 12.5% without benefit of indexation.

What is indexation and how is it calculated?

- ▶ **Indexation:** Refers to adjusting the purchase price of an asset for inflation while computing the capital gain.
- ▶ **Union Budget 2024 eliminates indexation benefit for all assets** (barring property acquired prior to July 23, 2024).
- ▶ **Cost Inflation Index (CII)** is used in the calculation of **Inflation adjusted price** of an asset which estimates the increase in an asset's price as a result of inflation.
- ▶ **Benefits of indexation:** Neutralizing impact of inflation while lowering tax liability of a taxpayer, and taxing at real gains than gains at prevailing prices.

Significance of Current Amendments



Flexibility in Tax Calculations as it provides options of two regimes



Restoring indexation would promote investment in real estate



Curb Black Market promoting greater compliance with tax laws.

3.2.5. Angel Tax



CONTEXT

Budget 2024-25, announced to abolish **angel tax for all classes of investors'** to boost the entrepreneurial spirit and support innovation.

ANALYSIS



What is Angel Tax?

- ▶ **Definition:** Refers to the income tax that the government imposes on funding raised by **unlisted companies**, or **startups**, if their valuation exceeds the company's **fair market value**.
- ▶ **Objective:** It was introduced in 2012 to curb money laundering and tax evasion.
- ▶ **Legal Provision:** It was levied under Section 56 (II) (viib) of the **Income Tax Act, 1961**.
- ▶ **Coverage:** Earlier it applied only to local investors but the Budget 2023-24 widened its ambit to include foreign investments (with some exceptions).

Why Angel Tax has been abolished?

- ▶ **Improves Ease of Doing Business:** Angel tax imposed an additional financial & compliance burden on Start-ups thus affecting their growth potential as well as Ease of doing business.
 - ▷ It will promote **Reverse Flipping** (Indian companies, initially established overseas, strategically repatriating their legal headquarters back to their home country) of start-ups.
- ▶ **Streamlining Investment:** Imposition of Angel tax on foreign investors reduced opportunity for Funding. Foreign investor played key role in increasing the valuation of start-ups.
 - ▷ For instance, Tiger Global (foreign investors in India) has invested in over a third of the start-ups that have turned **unicorn**, with a valuation of at least \$1 billion.

Concerns related with abolishing Angel tax

- ▶ Abolition will primarily affect the revenue of the government. Additionally, there is an issue that start-ups can be used to launder money or shell start-ups can be created.

What more can be done to improve the financial ecosystem of startups?

Standing Committee on Finance in its report "Financing the Startup Ecosystem" recommended following:

- ▶ **Scaling up unicorns:** Expanding **Small Industries Development Bank of India (SIDBI) Fund-of-Funds** to help disburse more funds to startups.
- ▶ **AIFs should be allowed to list on capital markets** to access a permanent source of capital.
- ▶ Foreign venture capital investors shall be allowed to invest in all sectors where FDI is allowed.
- ▶ **Mobilisation of domestic institutional funds:** Major banks should be allowed to **float fund-of-funds** and be allowed to invest in Category-III AIFs.

Conclusion

Abolition of Angel Tax will promote fund availability for entrepreneurs. In order to ensure that money laundering and tax evasion do not take place government can emphasise on registration of angel investors and disclosure of beneficial ownership of Private Equity/Venture capitalist/angel funds.

BRIEF BACKGROUND

Status of Start-ups in India

- ▶ India had 67 unicorn startups (68 in 2022) and placed **third** globally after USA and China as per Global Unicorn Index 2024' released by research group Hurun.
- ▶ About 1 lakh+ recognized startups 100+ Start-up have achieved the status of Unicorn.
- ▶ Unicorn is a startup company with a value of over \$1 billion.

Key Sources of Funding for Start-ups

- ▶ **Venture Capital/ Private Equity/ Angel Funds** invest in young and fledgling startups.
 - ▷ Venture capital Fund (including Angel Fund) is considered as Alternative Investment Funds (AIFs).
- ▶ **Venture Capitalists:** They manage pooled funds from institutional investors and invest in large sums.
- ▶ **Angel investors:** They typically invest their personal funds in smaller amounts at an earlier stage when founder is trying to get his/her venture off the ground.

3.2.6. Settlement Cycle



CONTEXT

Securities and Exchange Board of India (SEBI) introduced beta version of T+0 rolling settlement cycle on optional basis in addition to the existing T+1 settlement cycle in Stock Markets.

ANALYSIS



Reasons for shift to shorter settlement cycle

- ▶ **Evolution:** The significant evolution of **technology, architecture and capacity** of Market Infrastructure Institutions or MIs (stock exchanges, clearing corporations and depositories), presents opportunities for **further advancing** clearing and settlement timelines.
- ▶ **Becoming a Global leader:** To ensure that India's market infrastructure emulates the **global best practices**.
- ▶ **Efficiency:** It will bring cost and time efficiency.

Impact of shorten settlement cycle

- ▶ **Enhanced Liquidity Management:** This allows investor to reinvest proceeds or deploy capital into new opportunities without waiting for settlement cycles.
- ▶ **Increased Trading Opportunities:** Investors can **react quickly** to market developments, execute trades promptly, and optimise their investment strategies in real-time.
- ▶ **Reduced Settlement Risk:** T+0 settlement **eliminates the need to wait** for an additional day for trading confirmation and settlement.
- ▶ **Global Competitiveness:** Adopting a T+0 settlement cycle can attract foreign portfolio investors (FPIs).

BRIEF BACKGROUND

About Settlement Cycle

- ▶ It refers to the period **within** which securities and funds are delivered and settled after a trade is executed between a buyer and a seller.
- ▶ Traditionally, Indian exchanges followed a **T+2 settlement cycles**, meaning trades were settled in **two** business days after the trade execution date (T).
 - ▶ T+2 was shifted to T+1 (1 day settlement) in January 2023.
- ▶ T+0 Settlement Cycle refers to a system where Settlement of trades shall happen on the **same day** after the closure of market.

Related News

- ▶ SEBI issued guidelines for CRAs under **SEBI Act (1992) and Regulation 20 of CRA Regulations**.

Key guidelines

- ▶ **Communicating rating to companies:** By CRAs and **within one working day** of the rating committee meeting.
- ▶ **Appeal against rating:** Companies can **request a review or appeal** of the rating decision within **three working days** of the rating committee meeting.
- ▶ **Public disclosure:** CRAs must publish a **press release on their website** and inform the stock exchange/debenture trustee within **seven working days of the rating committee meeting**
- ▶ **Record maintenance:** CRAs must keep records of these disclosures for 10 years.

About Credit rating in India

- ▶ **Credit ratings:** It represents a CRA's **opinion on the probability of timely repayment of debt** and the **likelihood of default** on interest and principal payments.
- ▶ **CRA:** SEBI (Credit Rating Agencies) Regulations, 1999 defines CRA.
 - ▶ A CRA is a **corporate body involved** (or proposes to be engaged) in **rating securities** (either listed or to be listed on a SEBI-recognized stock exchange).
 - ▶ **7 CRA's registered with SEBI:** CRISIL, CARE, ICRA, Acuité, Brickwork Rating, India Ratings (Ind-Ra) And Research Pvt. Ltd, Infomerics Valuation And Rating Pvt. Ltd.

3.3. AGRICULTURE

3.3.1. Agriculture Extension System



CONTEXT

Prime Minister awarded Krishi Sakhi certificates to more than 30,000 women Self-Help Groups (SHGs) in Varanasi.

ANALYSIS



Krishi Sakhis

- ▶ Krishi Sakhis are practicing farmers and trained para extension professional in agriculture at grassroot level.
- ▶ Role: To be farmers' friend at their doorstep with all necessary information, skills and abilities to guide farmers on various aspects of natural farming.

Agricultural Extension System in India

- ▶ Agriculture Extension system: It supports farmers and rural producers in applying scientific research and new knowledge to agricultural practices through education, training and information.
- ▶ Significance:
 - ▷ Facilitates adoption of better technology, motivation, and institutional structures and Improves farm incomes by promoting farm yields.
 - ▷ Dalwai Committee report stressed that large number of farmers are aware of knowledge of production but lack skill.
- ▶ Agriculture Research & Education system in India is dominated by the public sector and is led by the Indian Council of Agriculture Research (ICAR). Recently, it released 109 Climate Resilient and Biofortified Varieties of Crops.

Challenges with India's Agricultural Extension System

- ▶ Lack of Investment: India spends about 0.7% of its agri-GDP on agri-Research and Education (R&E) and Extension and Training together, of which only 0.16% is allocated to Extension and Training.
- ▶ Regional Variations: Eastern states which are also a few of poorest states with high dependency on agriculture and low agriculture productivity are also the states with lowest spending on Agriculture R&E.
- ▶ Skewed Allocation: Towards crop husbandry (92%) while livestock sector is ignored.
- ▶ Lacks outcome orientation: The public extension delivery system has functioned more as targeted activity based rather than targeted outcomes-based mechanism.

BRIEF BACKGROUND

Krishi Sakhi Convergence Program (KSCP)

- ▶ Ministry: Jointly launched by Ministry of Agriculture and Farmers' Welfare and Ministry of Rural Development
- ▶ Aim: To empower 70,000 rural Women by imparting training and certification as Krishi Sakhis.
- ▶ Lakhpati didi: Krishi Sakhi is part of Lakhpati Didi program which aims to create 3 crore Lakhpati Didis.

Initiatives undertaken in India



Krishi Vigyan Kendras



Project VISTAAR (Virtually Integrated System to Access Agricultural Resources)



National Mission on Agriculture Extension & Technology



Extension services by Private sector e.g., IFFCO and KRIBHCO

Way Forward

- ▶ Market-led system: There is an urgent need to re-prioritise the existing extension system to transcend from the traditional food security perspective to a more market led-extension system.
- ▶ Linking research and extension: Strengthen links between research and extension by increasing cross sharing of experiences between the public, private and civil society sectors.
- ▶ Diversification: Diversify agriculture R&E portfolio away from crops and more towards animal husbandry.
- ▶ Innovation networks: Collaboration with private partners under Public-Private-Peasant-Policy Partnership (P-P-P-P) mode.

3.3.2. New Schemes for Agriculture Sector



CONTEXT

Cabinet approves **seven major schemes** for improving farmers' lives and livelihoods with total outlay of Rs 14,235.30 Crore.

ANALYSIS



Current Status of Farmer's lives and livelihood

- ▶ Economic Survey 2022-23 notes that **47% of population is dependent on agriculture for livelihood.**
- ▶ **Average monthly income** of Indian farmers was Rs. 10,218 in 2018-19.

Issues/Constraints in increasing livelihood of farmers

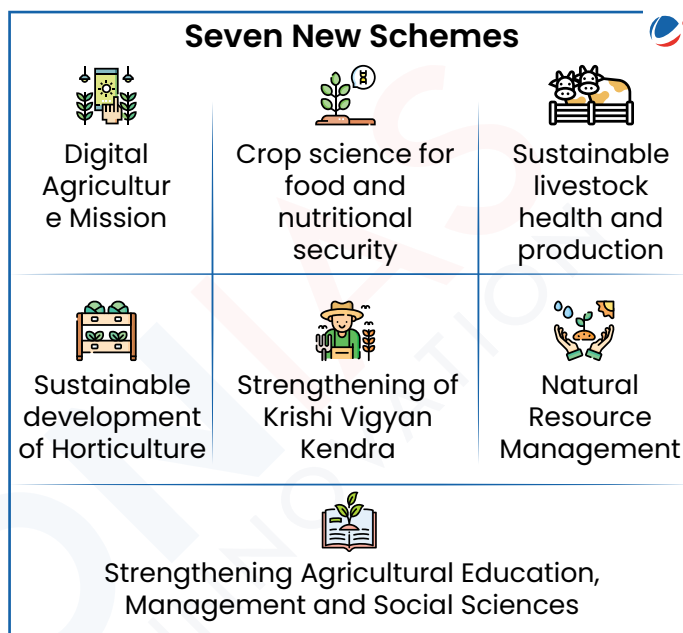
- ▶ **Technological Issues:** Only **47% of agricultural activities are mechanized in India** (lower than other developing countries such as **China (60%) and Brazil (75%)**).
- ▶ **Issues in R&D:** R&D expenditure is 0.4% of agri GDP, below levels in China, Brazil, and Israel.
- ▶ **Agricultural credit:** Access to institutional credit remains a constraint, especially in the case of tenant farmers.
- ▶ **Issues related to Natural Resource management:** Decline in soil organic matter, excessive fertilizer use, substantial area under rainfed agriculture, and low water use efficiency etc.
- ▶ **Supply chain related issues:** **Inadequate infrastructure** with loss of 30-35% of fruits and vegetables at various stages of supply chain and **non-tariff trade barriers** like sanitary and phytosanitary measures.
- ▶ **Low Productivity:** As per FAO report, India's rice yield level still remains low at around 2.85 t/ha, compared to yield rates of 4.7 t/ha and 3.6 t/ha in China and Brazil respectively).

How will New Schemes help in improving farmer's lives and livelihood?

- ▶ **Leveraging technology:**
 - ▷ **Digital Agriculture Mission** will help in reducing yield loss through precision farming with the use of **Digital Land Maps** and **Weather Forecasting and Climate Modeling**.
 - ▷ **Crop science for food and nutritional security:** It will promote-
 - ◊ **Development of high-yielding, disease-resistant, and climate-resilient crop varieties** through traditional breeding techniques and modern biotechnological methods like genetic modification and gene editing.
 - ◊ **Bio fortification** to address micronutrient deficiencies (**hidden hunger**) in populations.
- ▶ **Agriculture education and outreach:** It will help
 - ▷ **Strengthening Agricultural Education, Management, and Social Sciences** will help develop sound understanding of rural development theories.
 - ▷ **Strengthening of Krishi Vigyan Kendra (KVKs)** will make **quality technological products** (seed, planting material, etc.) available to farmers and organize frontline extension activities.
- ▶ **Special focus on sub-sectors:** Schemes for livestock and horticulture sectors will help enhance productivity in these high yielding sectors.

Structural Measures recommended by Ashok Dalwai Committee

- ▶ **Enable farm owners to transit from cultivators to farm managers:** By outsourcing all possible farm operations to achieve resource use efficiency and effective outcome.
- ▶ **Redefining mandate of agriculture:** Expand beyond food and nutrition security to support industrial enterprises like by generating raw materials for **chemicals, construction, energy, fibre, food, etc.**
- ▶ **Adopting Secondary agriculture:** Promote value addition using farm-generated natural resources.
- ▶ **Adopting 'Fork to Farm' approach:** By maximizing monetization through agro-logistics, agro-processing, and marketing.
- ▶ **Diversification of Sector:** Shift in focus/emphasis from major cereals (paddy & wheat) to **nutri-cereals**, from foodgrains to fruits, vegetables and flowers etc.



3.3.3. Digital Agriculture Mission



CONTEXT

Union Cabinet approved the Digital Agriculture Mission an umbrella scheme based on Digital Public Infrastructure (DPI) to improve farmers' lives with a total outlay of ₹2,817 Crore.

ANALYSIS



Key features of the Mission

- ▶ Built on 2 foundational pillars:
 - ▷ **Agri Stack (Kisan ki Pehchaan):** A farmer-centric DPI to streamline services and scheme delivery to farmers with 3 key components:
 - ◊ **Farmers' Registry:** Issuance of 'Farmer IDs', which will act as a trusted digital identity for farmers, similar to Aadhaar.
 - ◊ **Geo-referenced village maps:** Linking of the Farmer IDs to farmer-related data. E.g-Land records.
 - ◊ **Crop Sown Registry: Digital Crop Survey.**
 - ▷ **Krishi Decision Support System (DSS):** Integrates remote sensing data into a comprehensive geospatial system to provide real-time information on crop conditions, weather patterns, water resources etc.
 - ◊ Developed using RISAT-1A and Visualization of Earth observation Data and Archival System (VEDAS) of the space department.
- ▶ **Soil Profile Mapping: Digital General Crop Estimation Survey (DGCES)** will provide yield estimates based on scientifically designed crop-cutting experiments.
- ▶ **Key Targets:** Create digital identities for 11 crore farmers over three years and launch nationwide Digital Crop Survey in 2 years.

Significance of Digital Agriculture Mission

- ▶ **Assist farmers in informed decision making.** For instance, DGCES-based data will help in crop diversification and sustainable agriculture
 - ▷ **Accurate data on crop area and yield** will enhance efficiency and transparency in agri-production, and implementation of government schemes.
- ▶ **Prevent and mitigate losses and increase farmers' incomes.** Ex. Crop map generation and monitoring for better insurance settlements.
- ▶ **Direct and indirect employment** opportunities for 2.5 lakh trained local youth and Krishi Sakhis.
- ▶ **Other: Improved service delivery for farmers, Optimized value chains and tailored advisory services** for crop planning, health, pest management, and irrigation.

Challenges for effective implementation

- ▶ **Fragmentation of agricultural land:** Average landholding in India is only 1.08 ha, making application of present technology difficult.
- ▶ **High initial costs:** Digital agriculture requires significant computing, storage and processing power which makes it costly and less scalable.
- ▶ **Lack of sufficient research:** Lack of clarity on impact of technology on farming profitability.
- ▶ **Inadequate infrastructure:** Digital infrastructure such as internet penetration and digital literacy is lacking in rural areas.

BRIEF BACKGROUND

Digital Agriculture

- ▶ It can be defined as the use of modern technology by farmers to improve farm activity management by making it scientific and data-driven.
- ▶ It is the consistent application of **methods of 'Precision agriculture' and 'Smart farming'**, internal and external **farm networking** and use of **web-based data platforms** together with **Big Data** analytics.
- ▶ **Examples:** Use of drones to fight locusts in India, Grain Bank Model of Ergos, Yuktix GreenSense (remote monitoring solution), etc

Initiatives for Promoting Digital Agriculture

 India Digital Ecosystem of Agriculture (IDEA) Framework	 National e-Governance Plan in Agriculture (NeGP-A)	 Market-based Interventions like e-NAM, AGMARKNET etc.
 Drones for Land Mapping in Swamitva Scheme	 Mobile Applications like PM-KISAN, Kisan Suvidha etc.	

Conclusion

To reap the benefits of digital agriculture, focus on factors like **affordability, ease of access and operations, easy maintenance of systems, timely grievance redressal, robust R&D and appropriate policy support** is paramount. The **Digital Agriculture Mission** is a step in the right direction to achieve this goal and **improve farmers' lives**.

3.3.4. Livestock Sector in India

CONTEXT

Cabinet approved **sustainable livestock health and production** scheme with a total outlay of Rs 1,702 crore.

ANALYSIS

About the Scheme

Scheme is comprised of following:

- ▶ Animal health management and veterinary education
- ▶ Dairy production and technology development
- ▶ Animal genetic resource management, production and improvement
- ▶ Animal nutrition and small ruminant production and development

Significance of Livestock Sector in India

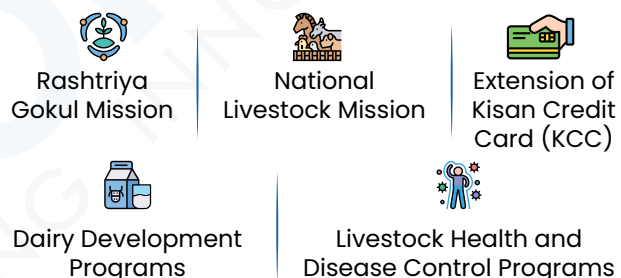
- ▶ **Contribution to GDP:** Contribution to **total Livestock GVA (at constant prices)** was **30.19%** of Agricultural and Allied Sector GVA and **5.73%** of **Total GVA** in 2021-22.
- ▶ **Employment Generation:** Provides employment for over 70% of rural households, especially small and marginal farmers and landless laborers.
- ▶ **Inter-linkages with Agri-activities:** Crucial for production of organic inputs like manure and agricultural waste.
- ▶ **Food and Nutritional Security:** Livestock products such as milk, meat, and eggs are rich in essential nutrients, playing a crucial role in combating malnutrition.
 - ▷ India is ranked **1st** in **milk production** contributing **23%** of **global milk production**.

BRIEF BACKGROUND

Status of Livestock Sector in India

- ▶ India has **world's largest population of livestock**.
- ▶ India is **largest producer of buffalo meat and 2nd largest producer of goat meat**.
- ▶ As per **FAO** with 1.9 million tonnes, India ranked **first** in **Inland fisheries production**.

Initiatives for India's Livestock Sector



Issues faced by livestock sector in India



Health Issues

- **High economic losses:** Due to animal diseases like Foot and Mouth Disease, Brucellosis etc
- **Inadequate infrastructure:** India has less than 60 recognized veterinary colleges in India.
- **Anti-Microbial Resistance:** India ranks 4th in antibiotics use in animals.



Economic Issues

- **Low Productivity:** Average annual productivity of cattle in India is 1777 kg/animal/year while world average is 2699 kg/animal/year (2019-20).
- **Unorganized Sector:** Half of total meat production comes from unregistered, make-shift slaughterhouses.
- **High Costs: Marketing and transaction costs** at around **15-20%** and **low insurance cover (15.47%)**.



Others

- **Green House Gas emissions:** Contribution to 15.1% global enteric methane emissions.
- **Shortage of fodder:** India has only 5% of its cultivable land under fodder production while having **11% of livestock**, creating a huge pressure on land, water and other resources.

Way Forward

- ▶ Strengthen **National Animal Disease Reporting System (NADRS)** with infrastructural support and digitalization.
- ▶ **Implement mobile veterinary services for remote areas** to provide first aid, artificial insemination, deworming, and vaccination services at farmers' doorstep etc.
- ▶ **Promote Livestock-based Integrated Farming System (IFS)** to integrate crop cultivation, livestock rearing, and other agricultural activities to optimize resource use, enhance productivity, and ensure sustainability.
- ▶ **Facilitate market access**, establish efficient value chains, and promote digital platforms.
- ▶ **Increase insurance Coverage in Livestock Sector** to shift the livestock owners' risk to insurance companies.

3.3.5. Horticulture Sector in India



CONTEXT

Cabinet approved scheme for Sustainable development of Horticulture with a total outlay of Rs 1129.30 crore and also approved a Rs 1,766-crore 'Clean Plant Programme' under the Mission for Integrated Development of Horticulture (MIDH).

ANALYSIS



About the Scheme

- ▶ The scheme aimed at **increasing farmers' income from horticulture** plants comprises the following -
 - ▷ Tropical, sub-tropical and temperate horticulture crops
 - ▷ Root, tuber, bulbous and arid crops
 - ▷ Vegetable, floriculture, and mushroom crops
 - ▷ Plantation, spices, medicinal, & aromatic plants

About Clean Plant Programme (CPP)

- ▶ **Aim:** Promote sustainable and eco-friendly agricultural practices and reduce dependence on imported planting materials
- ▶ **Implementing agency:** National Horticulture Board in association with the Indian Council of Agricultural Research.
- ▶ **Three Core Components:**
 - ▷ **9 world class state-of-the-art Clean Plant Centers (CPCs)**
 - ▷ **Certification Framework**, supported by a regulatory framework under **Seeds Act 1966**.
 - ▷ **Support for large-scale nurseries** for infrastructure development.
- ▶ **Key Benefits:**
 - ▷ **Farmers:** Access to virus-free, high-quality planting material, leading to increased crop yields and income.
 - ▷ **Nurseries:** Streamlined certification processes & infrastructure support to efficiently propagate clean planting material.
 - ▷ **Consumers:** Superior produce free from viruses, enhancing the taste, appearance, and nutritional value of fruits.
 - ▷ **Exports:** Market expansion opportunities and increasing India's share in international fruit trade.

BRIEF BACKGROUND

Horticulture Sector in India

- Involves cultivation, production, processing, and marketing of fruits, vegetables, flowers, and ornamental plants.
- **India produced 355.48 Million Tonnes** in 2022-23, 13.1% of gross cropped area.
 - **Fruits & vegetables account for 90% of total horticulture production.**
- **Contributed to Agriculture Gross Value Added (GVA) at 33%.**
- **Ranked 2nd** in fruits and vegetable production globally after China. 1st in production of Bananas, Mangoes, & Papayas.
- **Exports:** India is ranked **14th in vegetables and 23rd in fruits.**

Significance of Horticulture Sector for India

- **Sunrise Sector:** Potential to double farmers' income; Generate employment; Enhance foreign currency earnings etc.
- **Food & Nutritional Security:** Fruits and vegetables are major sources of vitamins and minerals in the Indian diet.
- **Potential in India:** Favorable agro-climatic conditions; Abundant labor force; Relatively low production costs; High productivity compared to food grains (12.49 tons/ha against 2.23 tons/ha) etc.

Other Initiatives Undertaken for Horticulture sector



Mission for Integrated Development of Horticulture (2014)



National Horticulture Mission (2005-06)



Horticulture Mission for North East and Himalayan States



Coordinated Programme on Horticulture Assessment and Management using geoinformatics (CHAMAN)

Challenges

- ▷ **Low Export Share:** India's global horticultural market share is only 1%. Indian exports face food safety and standards related issues due to non-tariff trade barriers like **Sanitary and phyto-sanitary** measures.
- ▷ **Infrastructure Deficit:** Poor logistics and **lack of** cold storage and warehousing facilities cause delays and wastages.
- ▷ **Small Operational Landholdings:** Limits crop rotation and sustainable soil management, reducing yields and fertility.

- ▷ **Other Challenges:** Limited value addition, pests, diseases, limited farm insurance and mechanization outreach, and lack of access to institutional credit etc.

Way Forward

The horticulture sector in India can be enhanced by building capacity at various levels, improving value chain efficiency, encouraging entrepreneurship, promoting advanced agricultural technologies, and adopting climate-smart agricultural practices.

3.3.6. National Pest Surveillance System (NPSS)



CONTEXT

Union Ministry of Agriculture has launched AI-based platform, National Pest Surveillance System (NPSS) that will promote Integrated Pest Management in India.

ANALYSIS



About Integrated Pest Management (IPM)

- ▷ **Definition:** Eco-friendly pest control method which emphasizes on use of bio-pesticides and pesticides of plant-origin.

Significance of IPM

- ▷ **Prevents crop yield losses:** Crop yield losses due to insect pests, diseases, nematodes, weeds and rodents range from 15-25 % in India.
- ▷ **Increases Income Levels:** IPM reduces pesticide use and increases production, reducing costs and boosting prices. IPM implementation led to increased pulse production by 15-20%.
- ▷ **Environmental benefits:** Due to reduced pesticide residues in the environment, it **enhances ecosystem services** (i.e. pollination, healthy soils, diversity of species) and **conserves energy and reduces emissions** as Bio-pesticides are derived from animals, plants and microorganisms.

BRIEF BACKGROUND

About National Pest Surveillance system (NPSS)

- ▷ **Aim:** To reduce dependence of farmers on pesticide retailers and inculcate a scientific approach among them towards pest management.
- ▷ **Agencies involved:** Collaboration of Directorate of Plant Protection, Quarantine & Storage and ICAR-National Research Centre for Integrated Pest Management (ICAR-NCIPM).
- ▷ **Key Features**
 - ▷ **Utilizes cutting-edge technologies:** Such as Artificial Intelligence (AI) and Machine Learning (ML) to offer timely and precise pest management advisories.
 - ▷ **Mobile app and web portal:** Farmers can take photos of the infested crops or the insect and upload on platform.
 - ▷ **Experts' Advice:** Scientists/experts will provide farmers with accurate advice and also suggest pesticides to control the menace.

Components/methods of integrated pest management



Cultural pest control

Methods like crop rotation, fallowing, manipulation of planting and harvesting dates, etc



Physical or mechanical control

Physical removal like Hand picking of insect pests, mechanical methods based on the knowledge of pest behaviour.



Biological control

Augmentation & conservation of natural enemies of pests like insect predators, parasitoids, parasitic nematodes, fungi etc.



Chemical controls

Use of chemical pesticides as the last resort - when all other methods fail



Possibility of Initial Yield Decline and High Initial Costs



Lack of Monitoring and Data

Concerns



Pest Resurgence if IPM practices are not implemented correctly



Weather and Environmental Factors affect effectiveness of certain IPM practices.

Steps taken for promoting IPM System in India

- ▶ **IPM Policy:** India has adopted IPM as cardinal principle and main plank of plant protection in the overall Crop Production Programme since 1985.
- ▶ **ICAR-NCIPM:** Premier research institute established to develop and promote IPM technologies for major crops.
- ▶ **"Strengthening & Modernization of Pest Management" scheme** promotes the use of IPM through Central IPM Centres, focusing on pest/disease monitoring, bio-control agent production, and human resource development.

Way forward

- ▶ Concentrated effort from government, Farmer Producer Organizations, and researchers to provide education, training, and support to farmers.
- ▶ Developing innovative IPM strategies tailored to specific regions and crop systems.
- ▶ Invest in developing technological interventions for wider adoption of IPM.

Current Affairs Quarterly Revision (June to August 2024)

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3.4. EMPLOYMENT AND SKILL DEVELOPMENT

3.4.1. Bridging Global Workforce Gaps



CONTEXT

The India Employment Outlook 2030 by ORF has highlighted that about 24.3% of the incremental global workforce over the next decade will come from India.

ANALYSIS



India's demographic advantage

- ▶ **Working population:** India's 1.4 billion population, with 65% working age (15-64 years) presents an opportunity to bridge the labor supply gap in advanced nations.
- ▶ **Bridging Skill Gap:** 'Global Skill Gap Study' by National Skill Development Corporation showed a **growing demand for Indian talent** across diverse sectors worldwide.
- ▶ **Dual advantage:** India's young population (median age of 28.4 years) gives a **competitive advantage** in terms of workforce and the **consumption power**.
- ▶ **Previous Successes:** India in past leveraged demographic advantage for exporting IT and BPO services.

Initiatives taken for utilization of India's demographic advantage

- ▶ **Skill Development:** Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana, **National Skill Development Mission**, National Apprenticeship Promotion Scheme, New education Policy (2020) focus on vocational training etc.
- ▶ **Migration Agreements:** India has signed migration & skill training agreements with various countries like Italy, France, etc.

Challenges in Skilling

- ▶ **Employment Skill Mismatch:** According to Economic Survey 2023-24, only 4.4% of 15-29 year olds have received formal vocational/technical training, while 16.6% received training through informal sources.
- ▶ **Public perception:** Skilling is often seen as a last resort, leading to a negative perception of vocational training as inferior to academic education.
- ▶ **Lack of adequate apprenticeship ecosystem:** Such as lack of coordination between education institutions and industry, inadequate infrastructure, and gaps in the regulatory framework.



Read From Essential Material

Chapter 2, 'Indian Society' of Class XII NCERT

BRIEF BACKGROUND

Global Labour Market Scenario

- ▶ **Shrinking working age population:** By 2050, working-age populations in high-income countries will **shrink by more than 92 million**.
- ▶ **Ageing population:** Elderly populations (above 65) will grow by over 100 million in many **high-income countries**.
- ▶ **Globalized Job Market:** Increasing accessibility to digital systems, increasing acceptance of teamwork with colleagues who are not co-located etc. has enabled **more globalized talent value chains**.
- ▶ **Shifting international trade:** Geopolitical situations, trade restrictions and friendshoring (building supply chain in friendly countries) has affected changes in job markets.

Impacts of labour mobility

<p>Global productivity enhancement</p>	<p>Poverty alleviation</p>
<p>Social welfare</p>	<p>Mass Migration and Brain drain</p>

Challenges in Labour Mobility

<p>Covid-19 impact i.e. job losses & debt</p>	<p>Anti-immigration policies & sentiments</p>	<p>Complex processes deter potential migrants</p>	<p>Automation reducing migrant workers demand</p>
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Way Forward

- ▶ **Understanding global labour demand:** India can strategically align its labour supply with the demands of advanced economies, ensuring mutual economic growth and integration.
- ▶ **Women empowerment:** Getting more women to enter the workforce will be pivotal, as only 24% were participating in 2022, according to ILO estimates.
- ▶ **Sharada Prasad Committee recommendations for skilling**
 - ▷ **Creating a Reimbursable Industry Contribution (RIC) for businesses with 10 or more employees,** requiring them to contribute 2% of their total wage expenses to this fund.
 - ▷ **Establish Dedicated Vocational Education and Training Systems (VETCs) on the pattern of Engineering and Medical Colleges.**
- ▶ **Other:** Bilateral and multilateral agreements to facilitate labour mobility, **reducing labour mobility transaction costs,** skilling workers to meet international market needs etc.

Related News

- ▶ Recently, the Government launched the **revised Model Skill Loan Scheme.**
- ▶ **About the Scheme**
 - ▷ **Background:** Earlier **Credit Guarantee Fund Scheme for Skill Development (CCFSSD)** was launched in 2015.
 - ◊ To provide institutional credit to individuals for skill development courses aligned to **National Occupations Standards and Qualification Packs** and leading to a **certificate/diploma/degree by training institutes as per the National Skill Qualification Framework.**
 - ▷ **Objective:** Providing easy access to **advanced-level skill courses,** which potentially pose a significant financial barrier to gain in-demand industry skills.
 - ▷ **Maximum Eligible Loan Amount:** Increased from **Rs. 1.5 lakh to Rs. 7.5 lakh.**
 - ▷ **Lending institutions:** Previously, only **Indian Banks' Association member banks (private, public, and foreign) could provide loans.** Now, Non-Banking Financial Companies (NBFC), Micro Finance Institutions (MFIs), and Small Finance Banks (SFBs) can also act as lenders.
 - ▷ **Credit Guarantee:** Extend loans will be backed by a guarantee against default of up to **75% of the loan disbursed.**

3.4.2. Gig Economy





CONTEXT

Recently Karnataka government published **draft Karnataka Platform-based Gig Workers (Social Security and Welfare) Bill.**

ANALYSIS

Gig Workers

- ▶ A gig worker is a person who performs work or participates in a work arrangement and earns from such activities outside of **traditional employer-employee relationship.**
- ▶ **There are 7.7 million** Workers engaged in gig economy (2020-21) in India (NITI Aayog). There would be 23.5 million by 2029-30.
- ▶ **Broadly classified into 2 categories:**
 - ▷ **Platform based:** Whose work is based on online software apps or digital platforms. E.g., delivery workers of Zomato.
 - ▷ **Non-platform based:** Casual wage workers in conventional sectors, working part-time or full-time. E.g., domestic workers.
- ▶ **Drivers of Growth:** Technological advancements, urbanization, rising middle-class consumption demands, shifts in consumer preferences towards on-demand services, and desire for greater work-life balance among workers.

Steps taken for Gig Economy	
 Code on Social Security, 2020: Extends social security benefits to gig workers	 Code on Wages, 2019: Provides for universal minimum wage and floor wage
 e-SHRAM Portal: It is a National Database of Unorganised Workers including gig workers.	 PM Suraksha Bima Yojana: Gig workers are eligible to get benefit of an accidental insurance cover of Rs. 2.0 Lakh for a year.

Benefits of a Gig Economy



Benefits to Workers: Flexible working hours with remote working opportunity, Autonomy etc.



Benefits to Employers: Cost-effectiveness due to reduced employees' cost, Ability to scale quickly based on demand etc.



Benefits to Consumers: Cheaper goods and services, Greater convenience through personalized services/products etc.

Challenges for Gig Workers

- ▶ **Digital Divide:** Access to internet services & digital technology can be a restrictive factor for workers.
- ▶ **Data protection: Opaque decisions made by platform companies** on how to collect; store and share personal data of workers impact Right to privacy of workers.
- ▶ **Lacking 'employee' status:** Has resulted in several consequences e.g. inability to form unions to represent their interests, exploitative contracts, etc.
- ▶ **Other:** Lack of job security, irregularity of wages, & uncertain employment, **lack of social Protection** Such as Health Insurance, Employees Provident Fund etc.

Way Forward

- ▶ **Accelerate Financial Inclusion:** Institutional credit to vulnerable section through financial products specifically designed for platform workers.
- ▶ **Enhancing Social Inclusion in Digital Economy:** By enabling different sections of workers e.g. **women workers and PwDs to take up employment opportunities** in platform sector.
- ▶ **Skill Development for Platform Jobs:** Integrate employment and skill development portals such as E-shram and National Career Services Portals or Udyam portal with ASEEM portal.
- ▶ **Universal Social Security Coverage:** i.e. **paid sick leave, Occupational Disease** and work accident Insurance, Retirement/Pension Plans etc.
- ▶ **Other: Proper Estimation of Gig Workers,** Introducing Platform India initiative (similar to Startup India) etc.



DAKSHA MAINS
MENTORING PROGRAM 2025

DAKSHA MAINS MENTORING PROGRAM 2025

(A Strategic Revision, Practice, and Enrichment Mentoring Program for Mains Examination 2025)

	DATE	DURATION
	8 November	4 Months

HIGHLIGHTS OF THE PROGRAMME

<ul style="list-style-type: none">  Highly experienced and qualified team of mentors  Scheduled group sessions for strategy discussions, live practice, and peer interaction  Well-structured revision and practice plan for GS Mains, Essay & Ethics  Access to Daksha Mains Practice Tests 	<ul style="list-style-type: none">  Emphasis on score maximization and performance improvement  Personalized one-to-one sessions with mentors  Subject-wise strategy documents based on thorough research  Continuous performance assessment, monitoring and smart interventions
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3.5. INDUSTRY

3.5.1. Pradhan Mantri Mudra Yojana

CONTEXT



NITI Aayog & KPMG published a report on **Impact Assessment of Pradhan Mantri Mudra Yojana (PMMY)**.

ANALYSIS



Key Achievements highlighted in the report

- ▶ **Credit Support to MSMEs:** Reached approximately 35 crore MSME accounts since 2015, providing ₹18.39 lakh crore credit support.
- ▶ **Financial Inclusion:** Major share of accounts (71.4% (FY 2022)) to Women entrepreneurs.
- ▶ **Encourages small businesses:** Majority of loan accounts (~80%) are in Shishu category (FY 2021), followed by Kishore at 18.70 %.
- ▶ **Performance of Aspirational Districts:** Increase in the number of loan accounts and amount sanctioned to these districts

Issues & Challenges highlighted by the report

- ▶ **Regional Variation:** Cumulative number of accounts and the amount sanctioned for the **Northeast region (2015 – 2022) is lowest at ~4% and is also decreasing post FY-2018**
- ▶ **Rising NPAs:** NPA accounts & amount have been increasing with a compound annual growth rate (CAGR) of 22.51 % & 36.61 % respectively from FY17 to FY22.
- ▶ **Issues in Scheme Design:** Ceiling of 15% on payout, complex and lengthy claim settlement process under CGFMU restricts the benefits.

BRIEF BACKGROUND

About PM Mudra Yojana (PMMY)

- ▶ **Type:** Central Sector Scheme.
- ▶ **Objective:** To **fund the unfunded** by bringing MSMEs to the formal financial system and extending affordable credit to them.
- ▶ **Loans through Member Lending Institution (MLIs):** Public Sector Banks, Private Sector Bank, State operated cooperative banks, Regional Rural banks, Micro Finance Institution (MFI), Non-Banking Finance Company (NBFC), Small Finance Banks (SFBs) etc.
 - ▷ MUDRA (**Micro Units Development & Refinance Agency Ltd.**) is responsible for refinancing MLIs.
- ▶ **Eligible borrowers:** Non-Corporate Small Business Segment (NCSB) consisting of Individuals, Proprietary concern, Partnership Firm, Private Ltd. Company, Public Company and Any other legal firms.
- ▶ **Credit Guarantee:** To eligible micro units through **Credit Guarantee Fund for Micro Units (CGFMU)**.

Type of Loans provided under PM Mudra Yojana (PMMY)

 Shishu Loans up to Rs. 50,000	 Kishore Loans from Rs. 50,001 up to Rs.5 Lakhs	 Tarun Loans above INR 5 lakhs and up to INR 20 lakhs (increased from 10 lakhs to 20 lakhs in Budget 2024) .
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Other issues

 Implementation Issues	 Poor Monitoring and Evaluation	 Factors Limiting access of MUDRA loans
▶ Limited number of employees and staff ▶ Borrowers lack knowledge of basic documentation and processes and credit discipline ▶ Poor connectivity to remote areas.	▶ Lack of proper mechanism for target setting ▶ Lack of standardized process for monitoring performance of micro entrepreneurs ▶ Need of adequate control mechanism to supervise.	▶ Long loan application processing time ▶ High processing fee and rates of interest ▶ Lack of a credit history; existing debt burden ▶ Difficulty in providing guarantee or inadequacy of collateral

Way Forward (Recommendations)

- ▶ Utilize Traditional **Advertising** and Online Advertising through **social media platforms, Facebook ads, etc)** for information dissemination and reinforcement.
- ▶ **Digitization of the Lending Process** to make it more transparent and hassle free for the potential beneficiaries.
- ▶ **Feedback/Query Redressal Portal** and Chatbots for query redressal and **Recognition Mechanism** to incentivize well performing MLIs to perform better.

3.5.2. Technical Textiles



CONTEXT

The National Technical Textiles Mission's Empowered Programme Committee has approved seven startup proposals under the GREAT scheme initiative.

ANALYSIS



About Technical Textiles

- ▶ **Definition:** Technical textiles are defined as textile materials and products used primarily for their **technical performance and functional properties rather than their aesthetic or decorative characteristics.**
- ▶ **Applications:** Agriculture, roads, railway tracks, sportswear, health on one end to bullet proof jacket, fireproof jackets, space applications etc.
- ▶ **Growth Factors:** Rising demand, raw materials availability, climate change, advancement in material science etc.

Significance of Technical Textiles for India

- ▶ **Enhances the Productivity:** Use of technical textiles in horticulture leads to increase in farm productivity by 2-5 times (Technical Textiles Ecosystem in India report).
- ▶ **Convergence with government Initiatives:** Single use plastic ban provide opportunity for **Pack-tech** to enhance production.
 - ▷ India is dominating the **Packtech segment** with a **global market share of 40-45%.**
- ▶ **Highway Growth rate:** Indian technical textiles market growing at a rate of 8-10 % per annum and is already fifth largest market in the world and stood at USD21.95 billion in 2021-22.
- ▶ **Export Potential:** India's exports of technical textile products grew from USD2.21 billion in 2020-21 to USD2.85 billion in 2021-22, , registering a growth rate of 28.4 %.

Government Initiatives

- ▶ **National Technical Textiles Mission:** To position the country as a global leader in Technical Textiles.
- ▶ **Schemes:** Production Linked Incentive (PLI) scheme for textiles, PM Mega Integrated Textile Regions and Apparel Parks (MITRA) Scheme and Scheme for Integrated Textile Parks (SITP).
- ▶ **Mandatory usage of technical textiles:** Several Central ministries/ departments have been mandated to use technical textiles to derive the benefits of technical textiles in various fields of applications.
- ▶ **Other: Quality Control Regulations for** Geo-tech Textiles, Agro Textiles, Meditech Textile etc, Development of new HSN Codes dedicated to technical textiles' products etc.

Way forward

- ▶ **Developing India Brands:** Positioning Indian Brands as Global Champions & Preparing Industry to create customer specific products.
- ▶ **Facilitation of PPP modelled 'Centre of Excellence':** Focus on designing, market linkages, capacity building, testing centres, research on sustainable materials and technology upgradation support in technical textiles.
- ▶ **Joint ventures in technical textiles:** Joint ventures would help in technology transfer and minimizing development cost of high quality products. It will allow access to new markets and opportunities.
- ▶ **Other: Awareness creation,** Initiating courses on entrepreneurship in technical textiles etc.

BRIEF BACKGROUND

About GREAT Initiative

- ▶ **Grant for Research and Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT)** initiative emerged from the Research, Development, and Innovation component of the National Technical Textiles Mission (NTTM).
- ▶ **Nodal Ministry:** Ministry of Textiles
- ▶ **Objectives:** Encourages young innovators, scientists / technologists, and startup ventures in the field of Technical Textiles to translate their ideas into commercial technologies / products and make India self-reliant.
- ▶ **Grant in Aid:** Normally upto Rs.50 Lakhs for a period of 18 months.

Challenges of Technical Textiles growth in India

 Import dependence for machinery	 Lack of standardization & Adoption
 Entrepreneurial Gap	 Inadequate R&D facilities

3.5.3. Space Economy



CONTEXT

Budget 2024–25 announced a venture capital fund of Rs.1,000 crore to promote space economy.

ANALYSIS



About Venture Capital Fund

- ▶ It will provide finance to Space tech startups & small- to medium-sized enterprises. It will supplement initiatives like **Seed fund scheme (2023)**, launched by **IN-SPACE**.
- ▶ **Need for Setting up a Venture Capital Fund:**
 - ▷ **Increasing India's share in the global commercial space economy to 10% by 2030** (currently it stands at 2%).
 - ▷ **Ensuring availability of low cost capital** as space sector is capital-intensive domain.

Private sector participation in Space

- ▶ There are **more than 200 space-based start-ups in India**.
- ▶ **Vikram-S**, India's first privately built rocket was launched in 2022 under 'Mission Prarambh'.
- ▶ **IIT Madras-incubated startup Agnikul Cosmos** test launched indigenously designed & developed world's first rocket with a **single-piece 3D printed engine**.
- ▶ **OneWeb India** recently became first company to receive **approval from IN-SPACE** for providing satellite broadband services.

Challenges in Promoting Start-ups and Private participation in Space Sector

- ▶ **Regulation Issues:** Multiplicity of regulations E.g. approvals needed from DoS, ISRO, etc. and **absence of a dedicated and independent regulator**.
- ▶ **Funding Constraints:** Indian investor's preference for **safe investments** due to risky nature of space industry, **high reliance on imports** increases costs etc.
- ▶ **Security and strategic concern:** Potential interference of foreign entities in private sector etc.
- ▶ **Other:** Limited Talent Pool, increase in space debris with growing space economy, etc.

Way Forward

- ▶ **Enact Space Activities Act:** It will further provide clarity, focus, and propulsion for the industry.
- ▶ **Capacity building:** Emphasizing on academic programs for systemic development. For instance, investing in training programs to enhance skills in systems engineering.
- ▶ **Building synergy in the sector:** Ensure partnerships between start-ups, ISRO, and foreign companies to access expertise and markets.

BRIEF BACKGROUND

India's Initiatives to promote space-tech entrepreneurship

- ▶ **Indian Space Policy 2023:** Enables end-to-end participation of Non-Government Entities (NGEs) in all domains of space activities.
- ▶ **FDI:** Allowed 74% FDI for satellite manufacturing and operation, & up to 49% FDI for launch vehicles, spaceports and associated systems etc.
- ▶ **SpaceTech Innovation Network:** Public-Private collaboration for start-ups & MSMEs in space industry.
- ▶ **Atal Innovation Mission (AIM): ATL Space Challenge** encourages students to find efficient & innovative solutions for specific, real-world challenges in Space sector.

Key organisations Promoting Private Sector Participation in Space Sector

- ▶ **Indian National Space Promotion and Authorization Centre (IN-SPACE):** Autonomous agency under Department of Space (DoS) responsible to promote, enable authorize & supervise various space activities of NGEs.
- ▶ **Indian Space Association (ISpA):** Established in 2020, ISpA is an apex non-profit industry body, setup for development of the private space industry in India.
- ▶ **New Space India Limited (NSIL):** Schedule 'A' Category Company under DoS set up in 2019, to handle the commercial activities of ISRO.

Need of Promoting Space tech Start-ups and Private Sector in Space

-  Reducing import dependency
-  Freeing up ISRO from ancillary activities
-  Enhance Global Competitiveness of Indian space sector
-  Connected socio-economic benefits in agriculture, communication, etc.

3.6. INFRASTRUCTURE

3.6.1. Transshipment Port



CONTEXT

India welcomed its first cargo ship at its newly built semi-automated transshipment port in **Vizhinjam International Transshipment Deepwater Multipurpose Seaport, Kerala**.

ANALYSIS

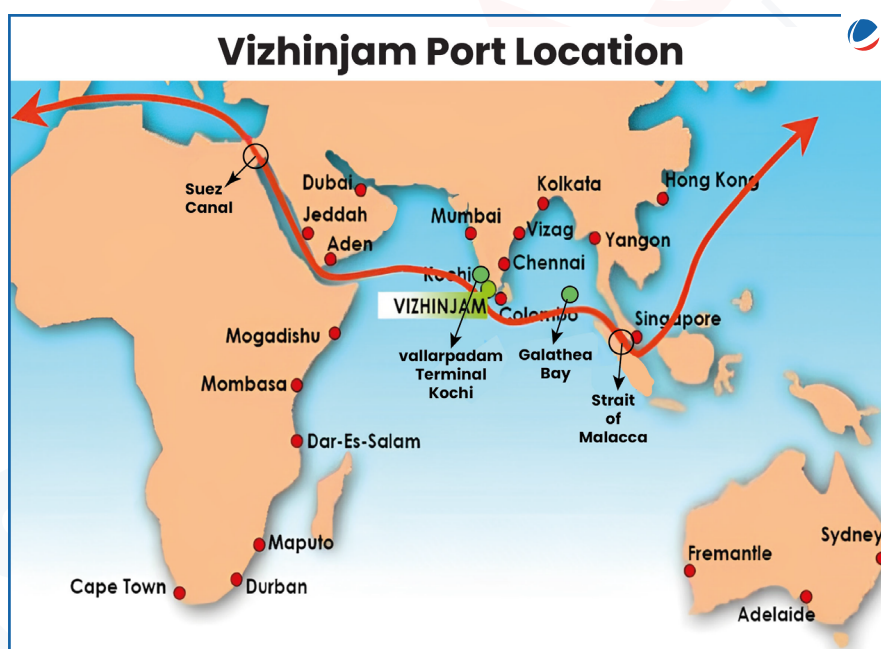


What is Transshipment Port?

- It is a transit hub where cargo from one ship is transferred to another on the way to its final destination. (Includes rails, roads, etc.)

About Vizhinjam Transshipment Port

- It is **landlord Port model** with a Public Private Partnership component on a **Design, Build, Finance, Operate and Transfer ("DBFOT")** basis.
 - Under **landlord model**, port authority acts as regulatory body, while port operations are carried out by private companies.
- Significance**
 - Strategic Location:** Just 10 nautical miles from international shipping route connecting Europe, Persian Gulf, and Far East.
 - Natural Advantage:** With deep draft of 18m, its curvilinear coast mitigates tsunami impact while port's positioning results in only mild erosion, minimizing maintenance costs.
 - Trans-shipment Hub:** It is strategically poised to emerge as transshipment hub that can consolidate and transfer Indian & regional origin cargo to mainline vessels at lower costs.



Steps Taken

<p>Maritime AmritKaal Vision 2047: Outlines a comprehensive plan to transform India's maritime sector</p>	<p>New international Container Transshipment Terminal development at Galathea bay</p>	<p>Tariff Guidelines, 2021 provide flexibility of fixing market determined tariff to PPP Operators</p>
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Issues in development of Transshipment Port

<p>Insufficient Natural Depth: Major Indian Ports have natural depths of only 10-14 meters</p>	<p>Indian Ports are at a distance from major international shipping lines</p>	<p>Labor issues: Indian ports are bogged with frequent strikes, congestions, inefficiency & low productivity</p>	<p>Other Issues: Funding, Land Acquisition Delays, Logistics, Competition from foreign ports etc.</p>
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Significance of India as a Transshipment Hub

- ▶ **Revenue Generation:** Transshipment hub has potential to curb revenue losses for Major ports (\$200–220 Million) in transshipment handling.
- ▶ **Reduced Logistic Costs:** by increasing efficiency.
- ▶ **Self-Reliance:** Nearly 75% of India's Transshipment cargo is handled at ports outside India.
- ▶ **Other: Stimulating Economic Growth, Integration with Global Value Chain** (poor shipping connectivity has hindered India's integration in global value chain etc.

Way-Forward

- ▶ **Infrastructure Investment:** By implementing modern cargo handling techniques for increased capacity at existing ports (especially for dry cargo).
- ▶ **PPP Projects:** Taxes should be rationalized to attract foreign shipping companies and a single window system should be set up for approving PPP projects.
- ▶ **Competing with International Ports:** Identify key areas for differentiation, such as cost efficiency, turnaround time, and customer service, to position Indian ports favorably.
- ▶ **Prepare Coastal Zone management Plan (CZMP):** Ports may be permitted to prepare CZMP taking into consideration future construction requirements.

Related News

Container Port Performance Index (CPPI)

- ▶ Nine of Indian ports have found their position among top 100 global ports in CPPI in 2023. Top-ranked container port in the CPPI 2023 is Yangshan Port (China).
 - ▷ CPPI is developed by the World Bank and S&P Global Market Intelligence. It helps to identify opportunities to improve a terminal or a port that will ultimately benefit all public and private stakeholders.



3.6.2. Digital Public Infrastructure (DPI)



CONTEXT

The 'Report of India's G20 Task Force on DPI' was released by 'India's G20 Task Force on Digital Public Infrastructure for Economic Transformation, Financial Inclusion and Development'.

ANALYSIS



Key Highlights of Report

- ▶ The report defines DPI and outlines a three-part framework for global DPI advancement.

What is DPI?	What is 'Not' DPI?
<p>It is a set of shared digital systems that-</p> <ul style="list-style-type: none"> ▶ Should be secure and interoperable, ▶ can be built on open standards and specifications to deliver and provide equitable access to public and / or private services at societal scale , ▶ are governed by applicable legal frameworks & enabling rules to drive development, inclusion, innovation, trust, & competition and respect human rights and fundamental freedoms. 	<ul style="list-style-type: none"> ▶ Interventions which are complementary to DPI: E.g., connectivity infrastructure that improves individuals' access to mobile & internet via physical infrastructure. ▶ Digital processes that may not enable private innovation: E.g., digitizing existing physical processes or workflows to create a government portal.

- ▶ **Significance of DPI**
 - ▶ **Accelerate Development:** E.g., with its DPI India achieved in less than a decade financial inclusion levels that would have otherwise taken 5 decades.
 - ▶ **Spurs Innovation:** By reducing transaction costs, maintaining competition through interoperability, and attracting private capital.
 - ▶ **Inclusive development:** E.g., **Number of Bank accounts opened in India tripled** from 147.2 million in 2015 to 508.7 million in 2023 in which **women own 55 % of these accounts**
 - ▶ **Effective Public Service Delivery:** E.g., DPI enabled effective direct benefit transfer across several Central Government Schemes leading to \$ 41 billion savings in India.
- ▶ **Initiatives for Global Advancement of DPI:** One Future Alliance, Global DPI Repository, Social Impact Fund
- ▶ **Challenges for Global Advancement of DPI:** Funding & resource allocation, Digital divide, developing appropriate policies & regulations, Data privacy & security, cultural & social acceptance.

Way Forward

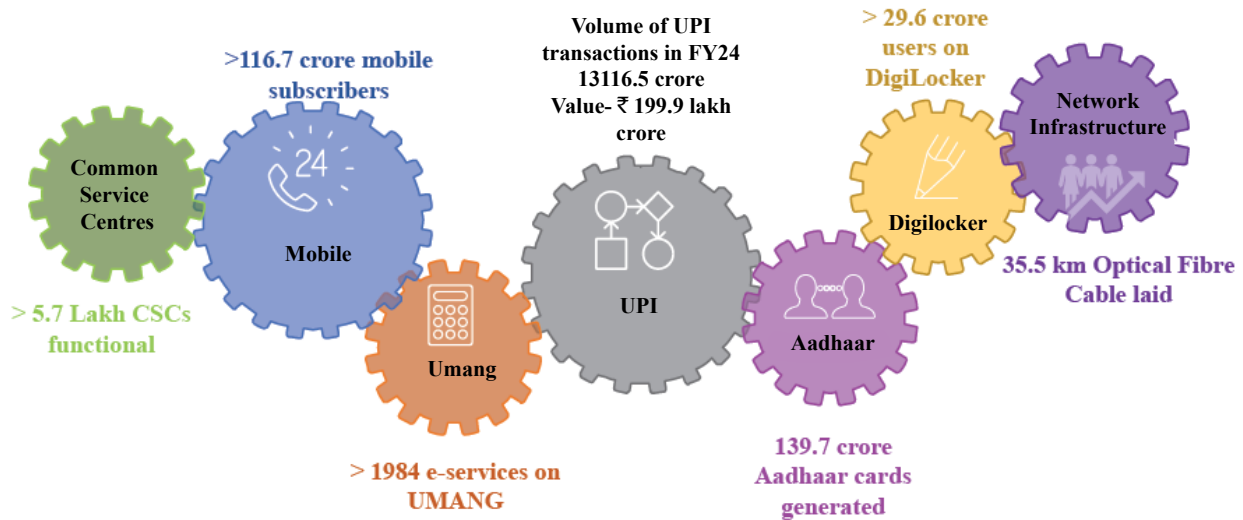
- ▶ **Adopting 3 pillared DPI Approach (suggested by report)**
 - ▶ **Technology Design** – Interoperable & unified, privacy and security by design etc.
 - ▶ **Governance** – Legal regulation and clear institutional mandate etc.
 - ▶ **Market participation** – Open access, guard against unfair practices.
- ▶ **Bilateral or Multilateral Engagement among countries** to jointly offer to deploy DPI within the recipient country.
- ▶ **Focused Institution** to work on policy dimensions, formulation and implementation of strategies.
- ▶ **Leveraging AI for making DPIs more effective and efficient.**



India's DPI

India Stack is India's own foundational DPI, consists of 3 interconnected layers: **Identity Layer** – (e.g, Aadhar), **Payment layer** (e.g., UPI) and **Data governance layer** (e.g, DigiLocker.)

India's Digital Public Infrastructure:



3.6.3. Indian Railways Safety



CONTEXT

Recently, several incidents of train derailment/collision in last six months raised concern over railways safety.

ANALYSIS



Railway Accidents in India

- ▶ Indian Railways has been grappling with a recent rise in accidents, particularly derailments. In the last 5 years 75% of the railway accidents involved derailment.
- ▶ There is a steep **decline in the number of consequential train accidents** from 473 in 2000-01 to 48 in 2022-23.
 - ▷ Consequential train accidents include those with serious repercussions, including injuries, loss of life etc.

Causes of Railway Accidents

- ▶ **Derailment:** Factors could be inadequate maintenance of locomotives, rolling stock, track, signals etc.;
- ▶ **Human Error:** Around **75% of derailments occur due to 'railway staff failure'** (Indian Railways).
- ▶ **Signal Failure:** Due to Defective/damaged track circuits & axle counters. E.g., Balasore train collision (2023).
- ▶ **Fire accidents in coaches:** Factors like inflammable material carried by passengers, Short circuit, etc.
- ▶ **Human Resources:** Vacancy of around 20,000 in safety-critical categories workforce (loco crew, train manager, station master etc) in Indian railways.

Steps taken for Railway Safety

- ▶ **KAVACH System:** It is an Indigenous **Automatic Train Protection (ATP) system** or **Train Collision Avoidance System (TCAS)** useful for high speeds as well as foggy weather.

BRIEF BACKGROUND

Global Best Practices

- ▶ **Europe: European Train Control System (ETCS)** is a signalling and train control system that is being implemented across Europe to improve the safety and efficiency of railway transport.
- ▶ **United Kingdom: Train Protection and Warning System** aims to enhance safety by preventing trains from passing danger signals and controlling speed in critical areas.
- ▶ **Japan: The Automatic Train Control (ATC) system** is used to automatically control train speeds in accordance with those speed signals.

- ▶ **Rashtriya Rail Sanraksha Kosh (RRSK):** Launched in 2017-18, it is a Rs 1 lakh crore 5-year fund for upgrading critical railway safety infrastructure.
- ▶ **Infrastructure Up gradation:** Steps such as **Electrical/Electronic Interlocking Systems** with centralized operation of points and signals have been provided at stations etc.
- ▶ **Use of New Technology:** Such as **GPS-based Fog Safety Devices** alert locomotive pilots to upcoming signals and crossings in fog-prone areas, improving safety during low visibility.
- ▶ **Other: Use of fire retardant materials, Unmanned level crossing eliminated by 2019, Safety Information Management System** (a web based application developed in 2016) etc.

Way Forward

- ▶ **Railway Safety Authority:** As recommended by **Kakodkar Committee**, need to create a statutory Railway Safety Authority to have a safety oversight on the operational mode of Railways.
- ▶ **Detailed Outcome Framework:** CAG's 2021 report on '**Derailment in Indian Railways**' recommends creating a 'Detailed Outcome Framework' for safety works funded by RRSK.
- ▶ **Track Safety Tolerances** (recommended by **Khanna Committee**): Draw out safety tolerances for different speeds and categories of track.
- ▶ **Other: Developing AI-enabled applications for flagging critical irregularities, adopting best practices etc.**

3.6.4. E-mobility



CONTEXT

The "e-mobility R&D Roadmap for India" report has been released by the Principal Scientific Adviser to the Government of India to achieve net-zero targets.

ANALYSIS



Proposed R&D Roadmap	
Sphere	Measures Required
Energy Storage Cell	Accelerate lithium reserves discovery, implement globally available established extraction technologies and utilize existing supply-chain strategies.
EV Aggregates	Emphasis on Hybrid Energy Storage Systems (HESS).
Material and Recycling	Analyze recycling value-chain and implement environmental impact monitoring.
Charging and Refuelling	Road Infrastructure for designing scalable systems for charging infrastructure.

Need/Requirement of E-mobility

- ▶ **Environment Sustainability:** Out of 142 Million Tonnes of CO2 emissions annually from Transport sector, 123 million tonnes is contributed by road transport segment alone.
 - ▷ Reduction in emission of **particulate matter** and **NOx (Nitrogen Oxides)** emission which are a major cause of respiratory ailments.
 - ▷ **Alignment with Sustainable Development Goals (SDGs) and Panchamrit climate action plan.**
- ▶ **Reducing Import Dependence:** EVs can reduce vulnerability to volatile international crude oil prices
- ▶ **Export Potential:** India is world's **third-largest automobile** market, which can help in EV export.
- ▶ **Others:** Create 10 million direct jobs and 50 million indirect jobs.

Initiatives for E-Mobility



Electric Mobility Promotion Scheme 2024



Faster Adoption & Manufacturing of (Hybrid & Electric Vehicles (FAME) India



National Electric Mobility Mission Plan 2020



Power Ministry Issued guidelines & standards for charging infrastructure



Production Linked Incentive Scheme for Automobile & Auto components



State EV Policies e.g. Karnataka, Telangana, etc.

Challenges in transitioning to E-mobility

- ▶ **Higher Cost:** EVs have a higher upfront cost due to expensive batteries.
- ▶ **Charging Infrastructure:** Scarcity of charging stations (around 2000 charging stations) lead to issues like **range anxiety**.
- ▶ **Lack of Clean Energy:** Transition to EVs is not fully sustainable due to fossil fuel-generated electricity.
 - ▷ **Coal (including lignite)** contributes about 50% of total electricity generation in India (Ministry of Power).
- ▶ **Lack of Standardisation:** Different manufacturers adopt varying battery chemistries, charging connectors, and powertrain configurations.
- ▶ **E-Waste Management:** India ranks third in **e-waste generation** after **China** and the **USA**. (**Global e-waste monitor, 2024**)
- ▶ **Complex/Vulnerable Supply Chain:** Dependency on imports of key elements such as cobalt, lithium, and nickel.

Way Forward

Recommendations of 'Standing Committee on Industry' in its report on 'Promotion of Electric Vehicles in the Country':

- ▶ **Formulating Battery Technology swapping Policy** and promoting battery swapping network.
- ▶ **Standardisation:** Stakeholders to adopt common standards for interoperability
- ▶ **Focus on Infrastructure:** Incentivizing establishment of charging stations, establishing dedicated manufacturing hubs and industrial parks for EV components.
- ▶ **Others:** Bring EVs under **priority sector lending**, allocate more funds towards developing public transport system and accelerate lithium extraction.

3.6.5. Transit Oriented Development

CONTEXT

Union Budget 2024-25 announced that the Union Government will formulate a transit-oriented development plan for 14 large cities with a population of over 30 lakhs, along with implementation and financial strategy.

ANALYSIS

Transit-Oriented Development (TOD)





- ▶ **Concept:** TOD integrates **land use and transport planning** and aims to develop **planned sustainable urban growth centres**, having walkable and livable communes with high-density mixed land use.
 - ▷ It promotes urban development that is compact, mixed-use, pedestrian- and bicycle-friendly, and closely integrated with mass transit by **clustering jobs, housing, services, and amenities around public transport stations**.
- ▶ **Transit Stations:** TOD focuses on development in the **influence zone of transit stations (like metro stations, BRTS etc.)**, i.e. within walking distance of (500-800 m) transit station.
 - ▷ TOD advocates **pedestrian trips** to access various facilities such as shopping, entertainment and work.

Eight principles of inclusive and resilient TOD

-  Align human/economic densities, mass transit capacity and network characteristics for greater accessibility
-  Create compact regions with short commutes
-  Ensure resilience of areas connected by mass transit
-  Plan and zone for mixed-income neighborhoods at corridor level
-  Create vibrant, people-centric public spaces around stations
-  Develop neighborhoods that foster walking and biking
-  Develop good quality, accessible, and integrated public transit
-  Manage private vehicle demand





► **Components of TOD:**

- ▷ **Influence Zone:** Area near **transit station** has high-density compact development with **mixed land use** to support all residents' basic needs.
- ▷ **Mandatory and Inclusive Housing:** Mix of all economic groups in influence zone.
- ▷ **Multimodal Integration:** High quality integrated multimodal transport system in influence area.
- ▷ **Vibrant Public Spaces:** Designated spaces for street vendors, preservation of open spaces, playgrounds, parks etc.

Government Initiatives for TOD	
 National Transit Oriented Development Policy	 Metro Rail Policy 2017
 Smart Cities Mission	 Multimodal Transport Development

Significance of TOD

- **Agglomeration effects:** Promoting higher densities and concentration of jobs within relatively small areas, thus boosting a city's competitiveness.
- **Livable Cities:** It creates vibrant communities with high-quality public areas and shorter commuting distances.
- **Efficient public transportation:** Mass transit can **support the large passenger flows** that come with high-density development, while the concentration of jobs and housing around stations helps make **public transport financially viable**.
- **Improved financing:** Proximity to mass transit improves access to TOD neighbourhoods, **increasing real estate value**.
 - ▷ A part of this value increase can be utilized in **financing additional transit improvements, affordable housing** etc.
- **Climate-friendly:** TOD typically translates into **reduced energy consumption** and a **smaller carbon footprint**.

Challenges with TOD			
 Social exclusion as TOD can drive up property prices	 Lack of coordination at the metropolitan level	 Inadequate policies & regulations	 Financial constraints

Way Forward - World Bank's 3 Value (3V) Framework

- **Node value:** It describes the **importance of a station in the public transit network** based on passenger traffic, connections with other transport modes, and centrality within the network.
- **Place value:** It reflects the **quality and attractiveness of the area** around the station.
- **Market potential value:** It refers to the **unrealized market value** of station areas. It depends on demand and supply of land.



3.7. ENERGY

3.7.1. City Gas Distribution (CGD) Network

CONTEXT



FICCI in collaboration with PWC released a report titled 'charting the path forward in city gas distribution: Emerging trends and insights'.

ANALYSIS



About CGD

- ▶ **Pipeline Network:** CGD network consists of underground pipelines for supplying Piped Natural Gas (PNG) and Compressed Natural Gas (CNG).
 - ▷ **Natural gas** is a clean-burning fossil fuel mainly composed of Methane (CH₄).
- ▶ **Regulation:** Under the PNGRB Act 2006, PNGRB allows for CGD network development in specific geographical areas
- ▶ **Coverage:** Over 33,753 Kms of natural gas trunk pipelines authorized in India, with around **24,623 Kms currently operational**.
- ▶ **Growth:** Government plans to increase natural gas share in energy basket from 7% to 15% by 2030.
- ▶ **Relevance of CGD Network: Natural Gas as Transition Fuel, Equitable Energy Access, Economical and Safe Transportation, Benefits of CNG (low emissions), Benefits of PNG (Safe, assured supply, no wastage) etc.**

Advanced Technologies in CGD



SCADA Technology: Monitors compressor data, including flame detectors, ensuring safety and efficiency.



GIS Mapping: Provides location-specific data, allowing companies to manage their entire **pipeline network** from any location.



Smart Meters: Precise billing and improved leak detection.
Example: Gujarat Gas Limited uses automated meters in **GIFT City**.



Intelligent Pigging: pipeline conditions, detecting **corrosion, metal loss,** and other anomalies in real-time



IT-OT Convergence: Enables faster decisions. **Example:** Mahanagar Gas Limited deployed **5,000 smart meters** in Mumbai using a low-power, long-range network for simultaneous monitoring.

Challenges in the CGD Sector



Complex Policy Framework



Infrastructure gaps due to High costs, complex technology etc



Competition from cheaper alternative



Import Dependence: 48% of LNG imported



Technological & digitalisation Lag

Initiatives Taken to Promote CGD Network

- ▶ **Market Exclusivity:** For a period of 8 years, is given to companies selected for developing CGD network.
- ▶ **Infrastructure Status to Gas pipelines:** Status accorded by RBI facilitate financing from commercial banks and other financial institutions.
- ▶ **Unified Tariff Reform:** It will help achieve the objective of "One Nation, One Grid and One Tariff".
- ▶ **Financing:** Government has set an objective to invest \$67 Billion in the natural gas sector in the next six years.

Way Forward for Promoting CGD Networks

- ▶ **Government and Regulators:** Develop unified regulatory strategy to streamline CGD sector and address issues like **skilled personnel shortages, slow approvals, and volatile gas prices.**
- ▶ **CGD Companies:** Shift towards customer-led strategies to meet market demands including **rise of EVs.**
- ▶ **Technology Companies:** Developing advanced solutions like smart meters and GIS mapping.
- ▶ **Financial Institutions and Investors:** Identify promising CGD projects, develop risk mitigation strategies, prioritize investments in infrastructure expansion and technologies like SCADA, cloud computing, ML, and AI.

3.7.2. Coal Sector in India



CONTEXT

Ministry of Coal has informed that Compound Annual Growth Rate (CAGR) of imported coal share fell from 13.94% (2004-05 to 2013-14) to -2.29% (2014-15 to 2023-24).

ANALYSIS



Key Reforms/Initiatives in Coal Sector

- ▶ **Enactment of Coal Mines (Special Provisions) CMSP Act 2015:** Permitted auction of coal mines for commercial mining by private entities.
- ▶ **Mines and Minerals (Development and Regulation) Amendment Act, 2021:** Emphasized transparency and efficiency in mining license allocation.
- ▶ **FDI and Technological Advancement:** Allows 100% FDI in coal mining.
- ▶ **Initiatives for domestic production:** Integrated Coal Logistic Policy and Plan, 2024; Investment in Coal Gasification; PM Gati Shati-National Master Plan in coal sector etc.

Persistent Issues/Challenges in Coal Sector

- ▶ **High Import Dependence:** Mainly due to **less availability of high gross calorific value (GCV) coal** (with low ash and sulphur content) in India.
 - ▷ Major import sources include Australia, Russia, South Africa, US.
- ▶ **Dominance of Coal India Limited (CIL):** CIL contributes over 80% of country's indigenous coal production & supply.
- ▶ **Lack of Upgradation:** Technological obsolescence in mining techniques resulting in lower productivity, higher costs, and safety hazards.
- ▶ **Environment Issues:** The damage from **open-cast mining** is irreparable, rendering the land useless.
- ▶ **Others:** Higher coal logistics costs, **developing new coal mines** Land acquisition is key issue in it. Also, some times, requires displacement of the people.

Way Forward

- ▶ **Promoting Sustainable Practices:** Miyawaki plantation method can be used to promote green cover near mines.
- ▶ **Encouraging Private players:** Help to reduce burden on CIL and promote technological upgradation in mining.
- ▶ **For Import Substitution, the Inter-Ministerial Committee** in its report has suggested-
 - ▷ Promotion of **Rationalization of coal linkage policy**, to reduce the distance in transportation of coal from coal mines to the consumer.
 - ▷ Early operationalization of **Captive/Commercial coal blocks.**
 - ▷ Ministry of Power may need to **mandate domestic coal power plants** to use domestic coal instead of imported coal.

BRIEF BACKGROUND

About Coal

- ▶ Coal is a combustible, black or brownish-black sedimentary rock, primarily made of carbon.
 - ▷ Peat, a soft, organic material, is the precursor to coal.
- ▶ **Key Facts:** India is **5th largest geological reserves** of coal in world, and **2nd largest consumer and importer** of coal.
 - ▷ **50.7% of India's power generation** is supported by coal and lignite (2023).
 - ▷ Top three states with highest coal reserves in India are **Odisha, Jharkhand, Chhattisgarh.**

Types of coal found in India

- ▶ **Anthracite:** Highest grade of coal containing a high percentage of fixed carbon, found in regions of Jammu and Kashmir.
- ▶ **Bituminous:** Medium grade with having high heating capacity. It is the most commonly used type of coal for electricity generation in India.
 - ▷ Found in Jharkhand, Odisha, West Bengal, Chhattisgarh, and Madhya Pradesh.
- ▶ **Sub-bituminous:** Black, dull, and has higher heating value than lignite.
- ▶ **Lignite:** Lowest grade coal with least carbon content, found in Rajasthan, Tamil Nadu, and Jammu & Kashmir.

- ▷ Enhance **coal gasification** in country to produce synthetic gas for steel sector which is mainly depended on imported coal.

3.7.3. Offshore Minerals in India



CONTEXT

Central Government framed **Offshore Areas (Existence of Mineral Resources) Rules, 2024** under Offshore Areas Mineral (Development and Regulation) Act 2002.

ANALYSIS



Offshore Areas (Existence of Mineral Resources) Rules, 2024

- ▷ **Applicability:** To all minerals except mineral oils, hydrocarbons and minerals specified in Part B of First Schedule to Mines & Minerals (Development and Regulation) Act 1957.
- ▷ **Definitions:** Rules use the modified version of **United Nations Framework Classification (UNFC) and Committee for Mineral Reserves International Reporting Standards (CRIRSCO) Template for Exploration Stages (4 stages) & Feasibility Studies.**
- ▷ **Exploration Standards:** Rules mandate **rigorous exploration standards** for accurate assessment and sustainable development of offshore mineral resources.
- ▷ **Geological Study:** On completion of exploration operations, geological study report shall be prepared by the licensee to establish probable mineral reserve.
- ▷ **Specific Exploration Norms:** For a variety of deposits and minerals, including deep sea minerals, rare earth element (REE) minerals, hydrothermal minerals, nodules etc.

BRIEF BACKGROUND

About Offshore Minerals in India

- ▷ **Offshore Mining:** Process of retrieving mineral deposits from deep seabed, at a depth of more than 200 metres.
- ▷ **Extent:** India's **Exclusive Economic Zone (EEZ) of over two million square kilometers** holds significant recoverable offshore mineral resources.
- ▷ **Mineral Deposits:** India's offshore mineral reserves include **gold, diamond, copper, nickel, cobalt, copper, manganese, and rare earth elements** etc.
- ▷ **Reserves:** Geological Survey of India has delineated resources of following minerals in the offshore areas:
 - ▷ **Lime mud** within EEZ off Gujarat & Maharashtra coasts & **Construction grade sand** off Kerala coast.
 - ▷ **Heavy mineral placers** in the inner-shelf and mid-shelf off Odisha, Andhra Pradesh, Kerala, Tamil Nadu and Maharashtra.
 - ▷ **Phosphorite** in Eastern & Western continental margins.
 - ▷ **Polymetallic Ferromanganese (Fe-Mn) nodules and crusts** in Andaman Sea and Lakshadweep Sea.

Related News

- ▷ Central Government **notified Tantalum as a Critical and Strategic Mineral** under the Mines and Minerals (Development and Regulation) Act, 1957.
 - ▷ Tantalum (atomic number 73) is a rare metal. It's grey, **heavy, very hard, and corrosion-resistant.**
 - ▷ **Characteristics:** When pure, tantalum is **ductile** (can be stretched, pulled, or drawn into a thin wire), **extremely high melting point** etc.
 - ▷ **Uses:** Making capacitors in electronic devices, surgical equipment & implants, components for chemical plants, nuclear power plants, aeroplanes and missiles etc.
- ▷ **Atomic Minerals Directorate for Exploration and Research** has established 1,600 tonnes of Lithium resources in **Mandya district.**

To know more about Lithium, refer Article 7.6.2. of the Current Affairs Quarterly Revision Magazine of December 2023 to February 2024.

3.8. MISCELLANEOUS

3.8.1. Creative Economy



CONTEXT

The Indian Chamber of Commerce launched the All India Initiative on Creative Economy (AIICE) with an aim to “tap into the vast potential of India’s creative industries”.

ANALYSIS



Creative Economy or Orange Economy:

- ▶ An **evolving concept** based on **creative assets** potentially generating economic growth and development.
- ▶ Essentially, it is **knowledge-based economic activities** upon which ‘creative industries’ are based.
 - ▷ Creative industries are **cycles of creation, production and distribution of goods and services** that use creativity and intellectual capital as primary inputs (See infographic)
- ▶ In India it’s a **\$30 billion** industry and responsible for employment of nearly **8% of India’s working population**.

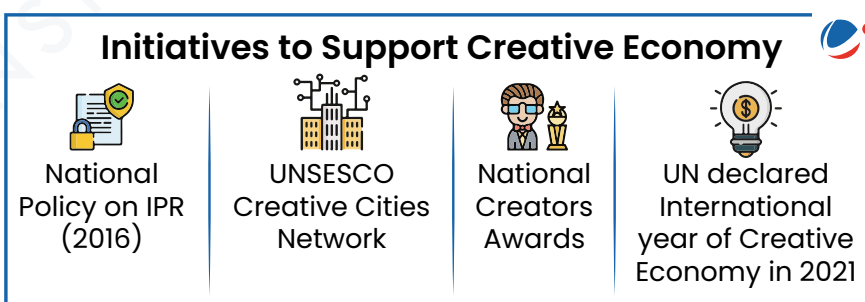
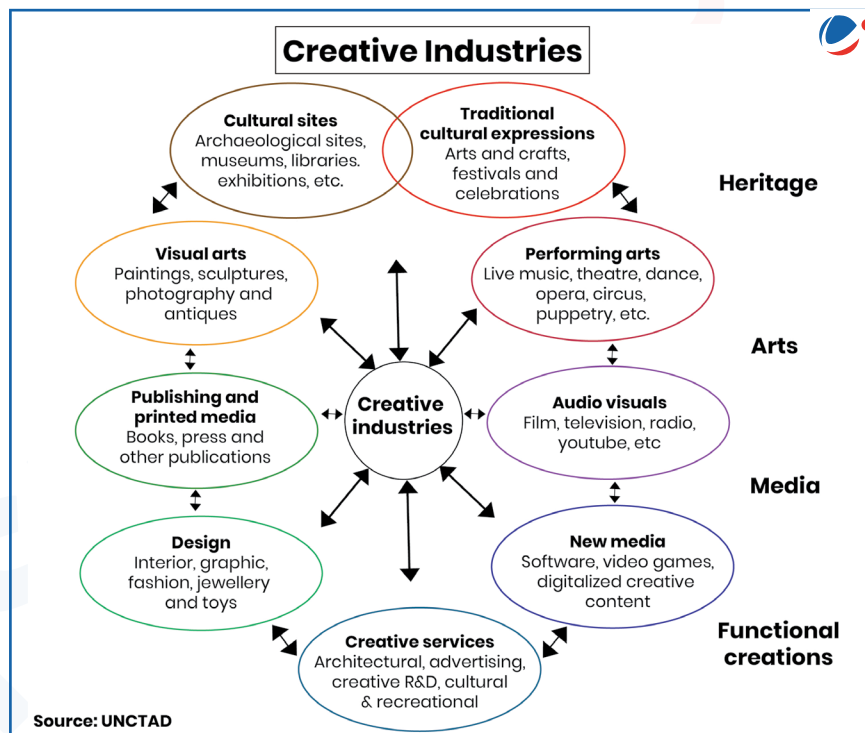
Significance of Creative Economy

- ▶ **Economic aspects:** Creates linkages and **spill-over effects**, increasing demand for other sectors, e.g., tourism industry.
 - ▷ According to UN estimates, creative economy industries **generate annual revenues of over \$2 trillion** and account for nearly **50 million jobs worldwide**.
- ▶ **Social aspects:** 23% of creative industry workers are aged 15-29 (**more than in any other sectors**), with women holding 45% of creative occupations.

- ▶ **Education:** Rise of edutainment, where education is combined with entertainment through digital platforms, has transformed **traditional learning methods**.
- ▶ **Diplomacy and Soft Power:** Cultural exchange promotes mutual understanding and diplomatic engagement.
 - ▷ E.g. Indian cuisine has become an integral part of India’s soft power.

Hurdles hindering growth of creative economy

- ▶ **Digitalization challenges:** Like Digital divide, cyber security concerns, and literacy issues hinder access to online platforms and digital art galleries.
- ▶ **India’s IPR regime:** In India, it takes **about 58 months on average** to dispose of a patent application as compared to about 20 months in China and 23 months in US.
- ▶ **Inherent issues:** Fragmentation of creative industries, ineffective market access and distribution, and lack of transparency in the selection process, etc.



- ▶ **Traditional career preferences:** Societal pressure in India to pursue conventional career paths like engineering, medicine, etc. as creative professions are seen as **risky and unstable**.

Way Forward

- ▶ **Promote Indian cultural and creative goods and services globally.** E.g. Ministry of Culture's Global Engagement scheme.
- ▶ **Access to Finance: Credit guarantees schemes and crowd funding** for financing entrepreneurs in creative sector.
 - ▷ **Adopt global best practices** such as "Crowdfunding4Culture" portal of European Commission.
- ▶ **Reforming IPR Framework:** Address issues of **copyrights, IP protection** and safeguard interests of creators.
- ▶ **Establishing Creative Districts/Hubs:** On the lines of creative district models in Thailand.
- ▶ **Integrated Policymaking Institution: Forming a Specialized institution for Creative Industries** on the lines of UK (Creative Industries Council).

3.8.2. Global Development Compact



CONTEXT

India proposed Global Development Compact for the Global South to address the rising debt of the developing countries and the Global South.

ANALYSIS



Reasons for rising debts of developing countries

- ▶ **High borrowing costs:** Developing regions borrow at rates that are 2 to 4 times higher than those of the United States.
- ▶ **High Public Debt:** Developing countries' public debt in 2023 was \$29 trillion.
- ▶ **Limited domestic resources:** Coupled with poor debt management, and low government revenues due to inefficient tax policies.
- ▶ **Political Instability:** It results in policy uncertainty, eroding investor confidence.
- ▶ **High reliance on private creditors:** Public debt owed to private creditors has risen across all regions, accounting for 61% of developing countries total external public debt in 2022.
- ▶ **New global challenges:** COVID-19 pandemic, climate change, geopolitical uncertainties, US-China trade, etc.

Impacts of high debt burden

- ▶ **Issue of debt sustainability:** Presently, ~60% of low-income countries are at high risk of debt distress or already in it.
- ▶ **Allocation of more resources to pay interest:** 54 developing countries spend more than 10 per cent of their revenues on net interest payments.
- ▶ **Hamper's Climate Change Outcomes:** E.g. developing countries are currently allocating a larger proportion of their GDP to interest payments (2.4%), than to climate initiatives (2.1%).
- ▶ **Challenges of over reliance on private creditors:** It leads to challenges of debt restructuring, high volatility especially during crises.
- ▶ **Sovereign debt crisis and global financial instability:** High debt levels in developing countries can contribute to global financial instability as it leads to a vicious cycle of borrowing and repayment, risking defaults and economic crises.

BRIEF BACKGROUND

What is Global Development Compact (GDC)?

India proposed a **comprehensive and human-centric "Global Development Compact"** for the Global South during third Voice of Global South Summit

- ▶ India will work to provide **affordable generic medicines, share experiences in natural farming** with Global South countries.
- ▶ India will also launch **a special fund of \$2.5 million** to boost trade promotion activities.
- ▶ **\$ 1 million fund** for capacity building in in trade policy and trade negotiation.

Key features of GDC

- ▶ **Comprises four elements:** Trade for development, Capacity building for sustainable growth, Technology sharing, Project specific concessional finance and grants.
- ▶ **No Debt Burden:** Ensure that development and infrastructure financing do not impose a debt burden on developing countries.
 - ▷ It is also expected to address the concerns of countries falling into the Chinese 'debt trap'.
- ▶ **Alternate development path:** Help in exploring alternative pathways for economic growth, social inclusion and environmental sustenance

Recommendations by UNCTAD for sustainable and inclusive debt solutions

- ▮ **Global Financial Reform:** Comprehensive reform of the global financial architecture and establishment of a global debt authority to coordinate and guide sovereign debt restructuring.
- ▮ **Concessional Loans:** Expand multilateral and regional banks' lending capacity by increasing their base capital.
- ▮ **Transparency in Financing:** Reduce resource and information asymmetry to improve transparency in financing terms.
- ▮ **Discourage predatory lending:** Introduce legislative measures to discourage predatory lending practices.
- ▮ **Crisis Resilience:** Implement standstill rules to halt debt repayments during external crises.
- ▮ **Automatic Restructuring:** Develop automatic restructuring rules and strengthen the global financial safety net.

Conclusion

Addressing rising public debt of developing countries requires a comprehensive strategy combining domestic initiatives and international cooperation including debt restructuring, fiscal consolidation, and growth-stimulating policies for sustainable long-term solutions.

3.8.3. Global Economic Prospects Report



CONTEXT

World Bank released 'Global Economic Prospects Report'.

ANALYSIS



- ▮ **Investment Level:**
 - Public investment averages about **25% of total investment in the median Emerging Markets and Developing Economies (EMDEs)**.
 - Public investment in these economies has experienced a **historic slowdown in the past decade**.
- ▮ **Benefits**
 - **Economic growth:** Increasing public investment by **1% of GDP can boost GDP by over 1.5%** and raise **private investment by 2.2%** in the medium term.
 - ◊ However, public investment **may also crowd out private investment**, especially when **fiscal space is limited** and additional **fiscal stimulus raises sovereign risk and borrowing costs for the private sector**
 - **Sustainability of growth:** Public investment can be critical in delivering public goods or services that may not be privately profitable, such as public health care and education.

BRIEF BACKGROUND

About public investment

- ▮ Public investment **usually** refers to **gross fixed capital formation** (total value of acquisitions, less disposals, of fixed assets) **by the State**, whether through central or local governments or publicly owned industries or corporations.
- ▮ It encompasses **physical or tangible investment** in infrastructure (such as transport, telecommunications, and buildings), but in a broader sense, it can include **human or intangible investment** in education, skills, and knowledge.

Recommendations ("three Es" package of policy priorities) to harness the benefits of public investment

- ▮ **Expansion of fiscal space:** Improve tax collection efficiency, enhance fiscal frameworks, and curtail unproductive spending.
- ▮ **Efficiency of public investment:** Tackling corruption, and poor governance, facilitating public-private partnerships, etc.
- ▮ **Enhanced global support:** Coordinated financial support and effective technical assistance are imperative for structural reforms.

3.9. TEST YOUR LEARNING

MCQ

Q1. Consider the following statements regarding India's demographic advantage:

1. India has a working-age population of 85% and a young population (aged 15-24) of over 47%.
2. India's young population presents an opportunity to bridge the labor supply gap in advanced nations experiencing demographic shifts.

Which of the statements given above is/are correct?

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

Q2. Consider the following factors impacting India's priority sector lending (PSL):

1. RBI has revised priority sector lending (PSL) guidelines to discourage small loan in districts with low average loan sizes.
2. Gadgil Committee (1969) is associated with PSL norms.
3. Non-performing assets (NPAs) are a significant issue within priority sector loans.

How many of the statements given above are correct?

- (a) Only one statement is correct
- (b) Only two statements are correct
- (c) All three statements are correct
- (d) None statement is correct

Q3. With reference to the Krishi Sakhi Convergence Program (KSCP), consider the following statements:

1. The KSCP aims to empower rural women by training and certifying them as para extension professionals.
2. It is jointly launched by the Ministry of Finance and the Ministry of Rural Development.
3. The program targets 1 crore women to be trained as Krishi Sakhis.

How many of the statements given above are correct?

- (a) Only one statement is correct
- (b) Only two statements are correct
- (c) All three statements are correct
- (d) None statement is correct

Q.4 The 'KAVACH System' recently seen in news is related to which of the following?

- (a) Railway Safety
- (b) Anti-piracy Mission
- (c) Cyber security
- (d) Dam safety

Q5. What are the reasons for high Credit-Deposit ratio in Indian banks?

1. Rising retail credit growth
2. Increased loans to MSMEs
3. Customers transitioning from savings to capital market investments
4. Increased competition between banks

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

QUESTIONS

1. Discuss the recent initiatives to promote private sector participation in India's space sector and suggest measures to address existing bottlenecks. (150 words)
2. Critically analyze the performance of the Pradhan Mantri Mudra Yojana (PMMY) and suggest measures for its improvement." (250 words)



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SECURITY



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4.1. 25 YEARS OF KARGIL WAR



CONTEXT

India is celebrating 25 years of Kargil War victory or success of Operation Vijay.

ANALYSIS



Reasons for Pakistan's intrusion of India

- ▶ **Politico-strategic:**
 - ▷ Internationalize Kashmir as a nuclear flash point requiring third party intervention.
 - ▷ Alter Line of Control (LOC) and disrupt its sanctity by capturing upheld areas in Kargil
 - ▷ Achieve better bargaining position for a possible trade-off against the positions held by India in Siachen.
- ▶ **Military/Proxy War Related Motives:**
 - ▷ To interdict the Srinagar-Leh road by disrupting vital supplies to Leh.
 - ▷ To outflank India's defences from the South and rendering its defences untenable in Turtuk and Siachen.
 - ▷ To boost militancy in J&K by diverting troops from the Valley

Shortcomings in defense architecture that contributed to the Kargil War

Issues highlighted by Kargil Review Committee (KRC):-

- ▶ **Intelligence failure:** Government of India did not anticipate possibility of a war
- ▶ **Low technology:** lack of proper satellite imagery capability, appropriate UAVs etc.
- ▶ **Decline in defence expenditure:** compromise with defence modernization, weapons systems
- ▶ **Lack of comprehensive security policy:** despite changing threat scenario because of the proxy war, nuclearisation in the sub-continent and RMA.

Suggestions made by KRC to strengthen India's defense architecture

- ▶ Strengthen National Security Council and have a full time National security adviser (NSA)
- ▶ Create an organization focused on electronic and communication intelligence (like National Security Agency in USA)
- ▶ Creation of an integrated Defence Intelligence Agency (DIA) and more powers to Joint Intelligence Committee (JIC)
- ▶ Create civil-military liaison mechanisms at various levels, from Command HQ to operational formations on ground to smoothen relationships.

Conclusion

Indian armed forces must be prepared for future conflicts as character and conduct of warfare have changed a lot since the Kargil war with growing use of terror, irregular methods of fighting by non-state actors and advancements in the cyber and space domains.

BRIEF BACKGROUND

About Kargil War

- ▶ **War theatre:** fought in the Kargil district of Union Territory of Ladakh across 170km high-altitude frontier near LoC.
- ▶ **Commencement of war:** commenced shortly after the signing of the Lahore declaration in 1999, when the Pakistan Army surreptitiously occupied the winter-vacated posts (vacated to prevent loss of soldier's life) of the Indian Army.
 - ▷ In 1999, India and Pakistan signed the Lahore Declaration to reduce nuclear risks and resolve their border disputes peacefully.

Various Operations

- ▶ **Operation Vijay by Indian Army** to tackle infiltration of Pakistani soldiers and militants into Kargil district of Kashmir.
- ▶ **Operation Safed Sagar by Indian Airforce** for conducting attacks on Pakistani troops positioned on high hills.
- ▶ **Operation Talwar by Indian Navy** to check Pakistan's navy in Arabian Sea.

Major initiatives taken for strengthening India's defence architecture

Specification	Reforms taken
Intelligence	<ul style="list-style-type: none"> Formation of National Technical Research Organization (2004), Establishment of 'Multi Agency Centre' (MAC) for Information sharing and Radar Imaging Satellite(RISAT-2:A) with all-weather capability
National Security Management	<ul style="list-style-type: none"> Establishment of Nuclear Command Authority (NCA) in 2003
Defence Modernisation	<ul style="list-style-type: none"> Corporatization of the ordnance factories to enhance functional autonomy, efficiency. Defence production and indigenization initiatives such as Positive Indigenisation List, ADITI (iDEX) Defence Offset Policy to leverage capital acquisitions to develop Indian defence industry
Border Management	<ul style="list-style-type: none"> Smart fencing: BOLD-QIT (Border Electronically Dominated QRT Interception Technique) under CIBM (Comprehensive Integrated Border Management System) is deployed in some Indo-Bangladesh and Pakistan border patches Vibrant Village Programme: development of the select villages near border areas All-weather roads and tunnels (E.g. Shinku-La)

Conclusion

Indian armed forces must be prepared for future conflicts as character and conduct of warfare have changed a lot since the Kargil war with growing use of terror, irregular methods of fighting by non-state actors and advancements in the cyber and space domains.

OPTIONAL SUBJECT CLASSES



- » Geography » Sociology
- » Political Science and International Relations

ADMISSION OPEN

- » Public Administration
- » Anthropology » Hindi Literature

STARTING SOON

4.2. TERRORISM IN J&K



CONTEXT

Recently, Jammu division of the Union Territory of Jammu & Kashmir (J&K) has been witnessing a rise in terrorist incidents.

- ▶ While terror incidents have been relatively common in Kashmir Valley, **resurgence of militant activity in Jammu region, which remained free of such incidents in past two decades**, raised concerns among the security establishment.

ANALYSIS



Reasons for recent rise in terrorism in Jammu

- ▶ **Reactivation of proxy-war:** Pakistan wants to re-establish its relevance, which was severely diminished after abrogation of Article 370 in 2019.
- ▶ **Thinning of Security Grid in Jammu: As security forces were moved to** from Jammu to the China border (post 2020 Galwan clashes).
- ▶ **Tightened security in Kashmir:** Tightened security in Kashmir pushes militants to attack Jammu where security is relatively low.

Reasons for persistence of terrorism in J&K

- ▶ **External: State-sponsored terrorism** from Pakistan, **Porous borders facilitating infiltration** to create religious and ethnic tensions, **Ideological influence from global extremist groups**
- ▶ **Internal**
 - ▶ **Political instability:** Periods of President's Rule, and absence of democratically-elected popular governments created a political vacuum that terrorist groups exploit.
 - ▶ **Governance issues:** AFSPA, internet shutdowns, arbitrary detentions, etc., resulted in alienation of local population.
 - ▶ **Role of Over Ground Workers (OGWs):** As OGWs sustain militancy through logistical support and propaganda **without directly participating in armed activities**; it becomes difficult to counter them.

Way Forward

- ▶ **Security and Intelligence:** Reinforcing HUMINT (Human Intelligence) to complement TECHINT (Technological Intelligence), implement the recommendations of **Madhukar Gupta Committee** on Border Protection.
- ▶ **Economic:** Implementation of **Jammu & Kashmir Industrial Policy 2021-30** for economic development and ensuring sustainable livelihood to people.
- ▶ **Diplomatic:** Proactive engagement with the international community including FATF to isolate terrorist groups and their sponsor states
- ▶ **Confidence Building Measures (CBMs):** Involvement of **Village Defence Guards and local religious leader to counter extremist narratives**, rehabilitation of former militants.

Measures taken to counter terrorism in J&K



Constitutional and political restructuring: Abrogation of Article 370 and reorganization of J&K in 2019.



Legal: 2019 amendment to UAPA to designate individual terrorists, declaration of Jamat-e-Islami as a terrorist organization, etc.



Security: Operation All-Out (2017), Multi-Agency Centre for better intelligence gathering, etc.



Developmental: Prime Minister's Development Package (2015), Central Sector Scheme for Industrial Development of Union Territory of Jammu & Kashmir (2021), etc.



Confidence Building Measures: Operation Sadbhavna (Goodwill) (2023), Rehabilitation Policy for ex-militants, etc.



International diplomacy: India's efforts to highlight Pakistan's role in supporting terrorism, efforts to put Pakistan in FATF's Grey List after Pulwama terror incident (2019).

4.3. NATIONAL SECURITY STRATEGY



CONTEXT

The Chief of Defence Staff (CDS) contested the need of a written National Security Strategy (NSS), sparking debate about importance of a NSS document.

ANALYSIS



What is National Security Strategy (NSS)?

- ▶ An NSS is a **concise summary of country's strategic vision and objectives** and encompasses domestic and external challenges to addresses **traditional, non-traditional threats and opportunities**. It is updated **periodically**.

Why does India need a written National Security Strategy?

- ▶ **Lack of written policy:** The only political direction for the Armed Forces is **Raksha Mantri's operational Directive of 2009**, which has not been updated. **US, UK, and Russia** have published and updated NSS.
- ▶ **Framework for effective long-term planning:** It ensures coherent, non-adhoc decisions.
- ▶ **Strategic signalling:** It will clarify India's **strategic intent to friends and foes**, highlight its role as a net security provider in the region
- ▶ **Meet changing security dynamics:** Regular reviews of threats and global trends will help in addressing challenges like hybrid warfare, China's naval growth etc.
- ▶ **Operational clarity:** It can help guide decision-making in areas like delegation, operationalisation of theatre commands etc.

Challenges in codifying NSS in India

- ▶ **Lack of political will:** Factors like lack of political consensus, limited expertise on defence matters etc. have **prohibited the political leadership** from formulating an NSS
- ▶ **Loss of strategic flexibility:** Implementing an NSS would **commit the political leadership to a specific approach**, whereas **ad hoc policymaking allows flexibility**. E.g., **Israel operates without formalized NSS policies**.
- ▶ **Resource Allocation:** Effective NSS implementation necessitates adequate financial and human resources and capability-building to meet set objectives.
- ▶ **Weak Institutional support and policy feedback:** Only few defense and security think-tanks currently exist in India.

Conclusion

As India enters Amrit Kaal, a term signifying a prosperous and self-reliant future, it is crucial to **discard hesitation and ambiguity** in national security planning.

BRIEF BACKGROUND

Previous steps taken to draft NSS

- ▶ **The Kargil Review Committee Report (2000):** It presented recommendations on national security yet failed to catalyse immediate NSS formulation.
- ▶ **The Naresh Chandra committee on Security (2011):** It enabled comprehensive discussions on security reforms, but failed to live up to the NSS development.
- ▶ **The Defence Planning Committee (2018), chaired by National Security Advisor:** It is a permanent body tasked with **preparing a draft national security strategy**.
- ▶ **Hooda Committee:** It was set up in 2018 to suggest comprehensive NSS. It suggested the following tenets to a draft NSS:
 - ▶ **Assuming our Rightful Place in Global Affairs**
 - ▶ **Achieving a Secure Neighbourhood**
 - ▶ **Peaceful Resolution of Internal Conflicts**
 - ▶ **Protecting our People and strengthening our capabilities**

Common Elements of NSS

	Strategic deterrence
	Territorial integrity and sovereignty
	Economic, Maritime, Cyber, Food security
	Counter terrorism and internal security
	Nuclear policy and non-proliferation

4.4. NATIONAL SECURITY COUNCIL SECRETARIAT (NSCS)



CONTEXT

Recently, the government has appointed the **Additional National Security Advisor (NSA)** to the National Security Council Secretariat (NSCS).

ANALYSIS



About National Security Council Secretariat (NSCS)

- ▶ **Genesis:** NSCS created in the late 1990s acts as the secretariat for the National Security Council or NSC.
- ▶ **Role:** It is the apex advisory body on all internal and external security-related matters and headed by the National Security Advisor (NSA) the Secretary of the NSC.
 - ▷ Since 2019, NSA holds the rank of Cabinet Minister and NSA and NSCS can generate Cabinet notes, access relevant Cabinet papers, and participate in any Inter-Ministerial consultation.
- ▶ **Aim:** To provide the strategy, direction and long-term vision so that every ministry concerned with national security may be adequately prepared to address all possible threats.
- ▶ In 2019, the allocation of Business Rules was amended to cover NSA and NSCS within its purview.

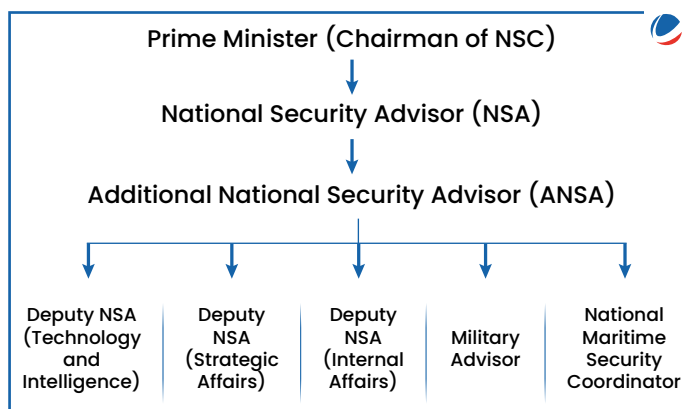
Significance of Appointing ANSA

- ▶ **Niche Role for NSA:** The ANSA will act as a key link between the NSA and other members of NSCS.
 - ▷ The NSA can now concentrate more effectively on overseeing key advisory bodies of NSC including the National Security Advisory Board (NSAB) and Strategic Policy Group (SPG).
- ▶ **Ensuring continuity:** The possibility of elevating the ANSA to the role of NSA would ensure continuity in the organization.
- ▶ **Adapting to Emerging Needs:** Continuous institutional reforms are necessary to respond to evolving geopolitical realities.

BRIEF BACKGROUND

About National Security Council (NSC)

- ▶ **Genesis:** Constituted 25 years ago based on the recommendations of a task force headed by K.C. Pant (in 1999).
- ▶ **Role:** It is an apex advisory body headed by the Prime Minister and comprising of the Ministers of Finance, Defense, Home and External Affairs.
- ▶ **Aim:** To promote integrated thinking and coordinated application of the resources of the State to protect and promote national security goals and objectives.
- ▶ **Composition:** It is a 3-tiered organization
 - ▷ **Strategic Policy Group (SPG):** It is the principal mechanism for inter-ministerial coordination. It is headed by NSA.
 - ▷ **National Security Advisory Board (NSAB):** Its principal function is to undertake long term analysis and to provide perspectives on the national security issues. It is headed by the NSA.
 - ▷ **Joint Intelligence Committee (JIC):** It assesses intelligence gathered by various intelligence agencies. It functions under the NSCS.



Emerging Threats that Demand Strengthening of NSCS



Western double standards on terrorism, human rights, etc.



Foreign Interference in domestic affairs like elections and national policies.



China's rising dominance in Indian Ocean and construction of infrastructure projects along the LAC.



Emerging threats like politically instable neighbours, cyber warfare, hybrid warfare, etc.

Way Ahead

- ▶ **Strengthening the role of NSA:** Establish **objective selection criteria with clear qualifications**, define **specific duties**, and ensure a **transparent chain of command**.
- ▶ **Structural Changes in NSCS:** Recruiting specialists with expertise in emerging security challenges and enhancing interdepartmental coordination to facilitate better anticipation of security issues.
- ▶ **Implementing a 'Whole-of-Nation' approach:** Develop partnerships between citizens, government agencies, the private sector, and civil society for information sharing and joint national security initiatives.



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4.5. NUCLEAR WEAPONS ARSENAL



CONTEXT

The Stockholm International Peace Research Institute (SIPRI) released its SIPRI Yearbook 2024 highlighting a concerning rise in nuclear weapon development and deployment.

ANALYSIS



Factors for Procurement of Nuclear Arsenal

- ▷ **Security:** Immense destructive power of nuclear weapons forces nations to acquire their own nuclear arsenals to balance against nuclear-armed rivals, preserving national security.
- ▷ **Domestic Politics:** Powerful state actors like nuclear energy officials, military units, and pro-nuclear politicians form a coalition to acquire nuclear weapons.
- ▷ **The Norm:** A normative belief where acquisitions of nuclear weapons bring in prestige and the ability to exercise influence.

Threats posed by nuclear weapons

Global Threat perception

- ▷ **Escalation of Nuclear Risk:** E.g., Russia withdrew the ratification of CTBT and suspended its membership of the New START.
- ▷ **The Risk of Nuclear Disaster in Ukraine:** E.g., Ukraine's Zaporizhzhia Nuclear Power Plant.
- ▷ **Cyber-Nuclear Security Threats:** It can be used to undermine the security of nuclear materials and facility operations.
- ▷ **Space nuclear weapons:** Nuclear detonation in space could damage satellites indiscriminately.

India's threat perception

- ▷ **China:** Modernisation of Chinese nuclear arsenal and a possible shift away from its "minimum deterrence" and "no first use" posture.
- ▷ **A 'Cascading Security Dilemma' with Pakistan:** When India arms itself to deter China, Pakistan perceives new threats from India and pursues enhanced capabilities of its own.
- ▷ **Pakistan has** opted to emphasize smaller battlefield or "tactical" nuclear weapons (TNWs) as a counter to India's larger and superior conventional forces.
- ▷ Unlike India, **Pakistan has not declared a No First Use policy**, hence, lower the nuclear threshold and introduce a far greater risk.

Way Forward to de-escalate Nuclear Race

- ▷ **The Korean Peninsula:** Refrain from nuclear threats and adopt nuclear no-first-use policy (NFU); Refrain from provocative military actions.
- ▷ **USA/NATO-Russia:** Russia join New START extension; US, Russia and NATO states commit not to issue public threats of NFU; Both ratify CTBT
- ▷ **South Asia:** Discuss a broader bilateral or multilateral nuclear test moratorium.

BRIEF BACKGROUND

Key findings

- ▷ India's arsenal increased from 164 in 2023 to 172, giving India two-warhead advantage over Pakistan.
- ▷ The reliance on nuclear deterrence has deepened, with nine nuclear-armed states modernizing their arsenals and deploying new nuclear-capable systems.
 - ▷ Presently, there're 12,121 warheads worldwide with 2,100 on high alert.
 - ▷ Also, transparency about nuclear forces has declined in Russia and the US.
 - ▷ Although, total nuclear warheads have declined, number of operational warheads has increased yearly, reflecting current tensions.

Treaties and Non-Proliferation Efforts:

- ▷ **Comprehensive Nuclear Test Ban Treaty (CTBT)**
- ▷ **Non-Proliferation of nuclear weapons (NPT)**
- ▷ **International Convention for the Suppression of Acts of Nuclear Terrorism, 2005.**
- ▷ **Nuclear Security Summits:** India participates in NSS.
- ▷ **Conference on Disarmament (CD):** India is a participant.
- ▷ **International Campaign to Abolish Nuclear Weapons (ICAN):** India has not signed it.

Nuclear weapon Technologies	
Fission Weapon	Fusion Weapon
<ul style="list-style-type: none"> ▶ Fission weapons are commonly referred to as atomic bombs ▶ U-235 isotope of Uranium serves as the primary fuel for the weapon. ▶ U-235 fission: neutron absorption splits atom, releasing energy and neutrons for explosions. ▶ The energy output: A ton of explosive TNT to 500 kilotons of TNT 	<ul style="list-style-type: none"> ▶ Fusion weapons are also referred to as thermonuclear bombs or, more commonly, hydrogen bombs ▶ Hydrogen bomb: Fission reaction initiates fusion of hydrogen, potentially causing more fission, releasing enormous energy ▶ Deuterium and tritium, which are isotopes of hydrogen, are used for the fusion process ▶ Hydrogen bombs yield megatons of TNT, thousands of times more powerful than atomic bombs
<p>Neutron bomb: It's a thermonuclear weapon. The explosion from a neutron bomb is relatively small</p>	

Current Affairs Quarterly Revision (June to August 2024)





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4.6. 25 YEARS OF INDIA'S NUCLEAR DOCTRINE

CONTEXT

India is celebrating 25 years of its nuclear doctrine launch.



ANALYSIS



Key features of India's nuclear doctrine

- ▶ **Building and maintaining a credible minimum deterrent:** Nuclear arsenals will be minimal enough to provide credible deterrence against adversaries.
- ▶ **A posture of "No First Use" (NFU):** Nuclear weapons will only be used in retaliation against a nuclear attack on Indian territory or Indian forces anywhere.
- ▶ **Mutually Assured Destruction (MAD) on both sides:** Nuclear retaliation to a first strike will be massive and designed to inflict unacceptable damage.
- ▶ **Non-use of nuclear weapons against non-nuclear weapon states (NNWS).**
- ▶ **Governance: Nuclear Command Authority (NCA)** comprises a **Political Council** and an **Executive Council**.
 - ▷ **Political Council:** chaired by **Prime Minister**, is the sole body (**civilian political leadership**) which can authorize the use of nuclear weapons for retaliatory attacks.
 - ▷ **Executive Council:** chaired by **National Security Advisor**, provides inputs for decision making by NCA and executes the directives given to it by the Political Council.

BRIEF BACKGROUND

About India's Nuclear doctrine

- ▶ Nuclear doctrine encompasses the goals and missions that guide the deployment and use of nuclear weapons.
- ▶ **India formally released and operationalized its official nuclear doctrine in 2003**

India's present nuclear standing in global nuclear discourse:

- ▶ **Comprehensive Test Ban Treaty (CTBT):** Prohibits all nuclear explosions; **India did not sign** due to lack of time-bound disarmament commitment by nuclear-weapon states.
- ▶ **Non-Proliferation Treaty (NPT), 1968:** Aimed at limiting spread of nuclear weapons through three pillars of non-proliferation, disarmament, and peaceful use of nuclear energy.
 - ▷ **India did not sign the treaty** due to biases as it divided world into "nuclear haves" and "nuclear have-nots"
- ▶ **Treaty on the Prohibition of Nuclear Weapons (TPNW):** First legally binding agreement to ban nuclear weapons. **India did not sign** as it does not contribute to customary international law or set new standards.
- ▶ **Global Multilateral Export Control Regimes**
 - ▷ India is a part of **Missile Technology Control Regime, Wassenaar Arrangement and Australia Group.**
 - ▷ **India is not a Part of Nuclear Suppliers Group (NSG) 1974** which was established **post-India's 1974 nuclear test** to prevent nuclear exports for weapon-making.



Factors underscoring need for India’s nuclear doctrine

Aspect	Against NFU	In Favour of NFU
Risk of Initial Casualties	Could lead to unacceptably high initial casualties and damage to Indian population, cities, and infrastructure.	Contributes to India’s strategic restraint posture and enables civil nuclear cooperation agreements and accommodation in multilateral nuclear export control regimes.
Ballistic Missile Defence (BMD)	An elaborate and costly BMD system required to defend against a first strike.	NFU helps India maintain a defensive and non-escalatory stance.
Effectiveness Against Nuclear neighbours	Ineffective against Pakistan, which is lowering its threshold with Tactical Nuclear Weapons (low-yield weapons to be used in their own territory against Indian forces).	A prudent and non-escalatory approach to managing tensions with China and contributes to regional stability.

How can the present nuclear doctrine be strengthened?

- ▶ **Dedicated defence technology programs** on the lines of **Integrated Missile Development Programmes** can be started to ensure capacity building alongside technological developments.
- ▶ **Increase flexibility in the ‘massive retaliation’ stance** to avoid escalation and allow nuanced responses, especially against TNWs.
- ▶ **Synchronizing with evolving Foreign Policy** in light of geopolitical changes. E.g. Intensification of China-Pakistan relations and their growing nexus with Russia, along with geopolitical instability across the globe demands calibrated review of India’s doctrine.
- ▶ **Engaging in multilateral discussions** at the UN and other platforms such as **Conference on Disarmament** to voice the security and non-proliferation issues concerning states like itself.

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4.7. JOINT DOCTRINE FOR CYBERSPACE OPERATIONS



CONTEXT

Chief of Defence Staff (CDS) released India's first Joint Doctrine for Cyberspace Operations (JDCO) which lays emphasis on understanding military aspects of cyberspace operations.

ANALYSIS



What is Cyber Space?

- ▶ It refers to **global volume of entities** (such as ICT systems) **processing, storing and transmitting digital information and code**, regardless of whether they are connected or not.
- ▶ **Military Advantages of operating in cyberspace:** Real time intelligence gathering, offensive and defensive operations, Improved Communication, Signal Intelligence etc.
- ▶ **Vulnerabilities of operating in cyberspace:** Cyberspace warfare or Cyber-attacks can **disable official websites and networks**, disrupt or disable essential services, steal or alter classified data, cripple financial systems etc.

Significance of the doctrine

- ▶ **Provides conceptual guidance** to commanders of armed forces, staff and practitioners in planning and conducting operations.
- ▶ **Promotes Jointness and Integration** of three services (Army, Navy and Air Force).
- ▶ **Preventing hostile actions in cyberspace**, which can impact nation's economy, cohesion, political decision-making, and ability to defend it.
- ▶ **Competing globally**, as countries like China have developed cyber weapons to degrade/destroy adversary's military assets and strategic networks.

BRIEF BACKGROUND

About Chief of Defence Staff (CDS)

- ▶ CDS post was created in 2019 the **rank of a four-star General**.
 - ▶ A Group of Ministers (GoM) in 2001 had recommended creation of the post based on **Shri K Subrahmanyam Committee Report**.
- ▶ **Functions and responsibilities:**
 - ▶ **Heads the Department of Military Affairs** and function as its Secretary.
 - ▶ A **Permanent Chairman of Chiefs of Staff Committee**
 - ▶ A member of **Defence Acquisition Council chaired** by Ministry of Defence and **Defence Planning Committee** chaired by National Security Advisor.
 - ▶ Acts as **Principal Military Adviser to Ministry of Defence** on all tri-services matters of military and Military Adviser to Nuclear Command Authority.
 - ▶ **Function as the Military Adviser** to the Nuclear Command Authority.
 - ▶ **CDS do not exercise any military command**, including over the three Service Chiefs.

Other Measures for strengthening cyberspace capabilities in India

- ▶ **Defence Cyber Agency (2019):** It is a tri-service agency responsible for handling cybersecurity threats and coordinating cyber defense efforts.
- ▶ **Exercise Cyber Suraksha (2024):** Conducted by the Defence Cyber Agency to develop **Cyber Defence Capability of all Cyber security organizations** and promote synergy amongst all stakeholders.
- ▶ **Cyber Emergency Response Teams (CERTs):** To prevent and react to cyber-attacks.
- ▶ **Cyber Security Operations Centre (CSOC):** It monitors and manages cyber threats, ensuring the protection of defense-related information and communication systems, especially in Assam Rifles.

Conclusion

The doctrine is set to influence future military strategies and operations by emphasizing the vital role of cyberspace in national defence and recognizing it as a key domain in modern warfare, alongside the traditional domains of land, sea, and air.

4.8. FINANCIAL ACTION TASK FORCE (FATF)



CONTEXT

The Financial Action Task Force (FATF) plenary held in Singapore adopted 'Mutual Evaluation Report (MER) of India'.

ANALYSIS



What is Mutual Evaluation Report of FATF?

- ▶ MER is an assessment of a country's measures to combat money laundering and the financing of terrorism and proliferation of weapons of mass destruction.
 - ▷ The reports are **peer reviews**, where members from different countries assess another country.
 - ▷ During a mutual evaluation, the **assessed country must demonstrate** that it has an effective framework to protect the financial system from abuse.
- ▶ **Components of MER:** It has two main components. Effectiveness rating and Technical Compliance assessment
- ▶ **Categorization of countries in MER**
 - ▷ **Regular follow-up:** The top most category
 - ◊ Only 24 including India, UK, Italy, France, and (members of G20) are in this category.
 - ▷ **Enhanced follow-up:** These are countries with significant deficiencies.
 - ◊ Includes Russia even developed countries like the US, Australia, and several European nations.
 - ▷ **ICRG review:** For High-risk and other monitored jurisdictions
 - ◊ These have a one-year Observation Period to address deficiencies.
 - ◊ Failure to address deficiencies may result placement of the countries in the Black or Grey list.

What makes functioning of FATF less effective?

- ▶ **Perceived lack of objectivity:** No formal rules exist as to how many members must object to scuttle a proposal or spare a country from inclusion in grey list.
- ▶ **Weakness in Listing Regime:** No differentiation between countries lacking capacity and those unwilling to comply, leading to inflexible responses.
- ▶ **Lack of graduated response:** Placing non-compliant countries either in black list or the grey list doesn't allow for a flexible and graduated response against terror financing countries.
- ▶ **Lack of effectiveness:** Relies on technical compliance without considering actual performance E.g. Pakistan's removal from grey list despite ongoing state sponsored terroris.

BRIEF BACKGROUND

- ▶ The first Mutual Evaluation of India was adopted in 2010.
- ▶ The current MER places India in the regular follow-up category and recognizes initiatives like JAM (Jan Dhan, Aadhaar, Mobile) Trinity

Significance of Being Placed in Regular Follow-up' Category



Financial Stability and Integrity: It demonstrates the stability and integrity of the financial system.



Global Financial Market Access: Better ratings lead to improved access and increased investor confidence.



UPI Global Expansion: Supports the global expansion of India's Unified Payments Interface (UPI).



Commitment to International Standards: Underscores country's proactive stance in the global fight against financial crimes

About Financial Action Task Force (FATF)

- ▶ **Genesis:** established in 1989, by a G-7 Summit held in Paris.
- ▶ **Membership:** 38 member countries including India.
- ▶ FATF makes decisions by consensus.
- ▶ **Key Role:**
 - ▷ International watchdog to combat money laundering, terrorist financing etc.
 - ▷ **Financial inclusion:** Bringing more people into the formal financial system where transactions can be more easily monitored.
- ▶ **Grey and Black List of FATF:** These are countries identified as jurisdictions with weak measures to combat money laundering and terrorist financing.
 - ▷ **Grey List (Jurisdictions under Increased Monitoring):** These are countries that have committed to resolve the identified strategic deficiencies within agreed timeframes.
 - ▷ **Black List (High-Risk Jurisdictions subject to a Call for Action):** Countries or jurisdictions with serious strategic deficiencies.

- ▶ **Other issues:** Marginalisation of Global South voices, emerging source of terror financing due to cryptocurrencies, deepwebs etc.

Way forward for making FATF more effective

- ▶ **Enhanced transparency in functioning:** Formalize appointments and ensure job security and independence within the secretariat.
- ▶ **Categorization within grey list:** Differentiating countries based on willingness to comply for more targeted actions.
- ▶ **Tailored response to need of poor countries:** Provide special assistance to strengthen legal and financial frameworks in resource-limited countries.
- ▶ **Global cooperation:** Strengthen coordination with IMF, World Bank, UN, and FATF style regional bodies to enhance effectiveness.

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4.9. AIRCRAFT CARRIER



CONTEXT

India's Defence Minister recently announced plans for India to commence building its 2nd indigenous aircraft carrier, with intentions to construct "five or six more" in the future.

ANALYSIS



Why India needs a third aircraft carrier?

- ▶ **Enhancing 'Blue Water Navy' capabilities:** It will reinforce capability of Indian Navy as **Blue Water Force** and help in achieving India's goal of **net security provider** in Indian Ocean amid rising China's presence.
- ▶ **Continuous operational readiness:** Three carriers ensure that at least two are always operational, providing coverage for both India's eastern and western seaboard.
- ▶ **Incorporation of advance technologies:** The third carrier (IAC-2) may feature advanced systems like the **Electromagnetic Aircraft Launch System (EMALS)** and **CATOBAR** for **launching heavier aircraft and enhanced capabilities**.
- ▶ **Facilitating projection of India's soft power:** It can also be used in Humanitarian Assistance and Disaster relief (HADR) enhancing India's image




BRIEF BACKGROUND

About Aircraft Carrier

- ▶ An aircraft carrier offers a **wide range of strategic services** including surveillance, air defence, airborne early warning, protection of Sea Lines of Communication (SLOC), and anti-submarine warfare.
- ▶ **Navy Perspective Plan (1985-2000) and Maritime Capability Perspective Plan (2012-27)** envisaged a requirement of **three aircraft carriers**, with two to be operational (East and West coast) and one in refit at any time.
- ▶ At present, the Indian Navy operates **two 45,000-tonne aircraft carriers**, the **INS Vikramaditya** and the **INS Vikrant**.
 - ▶ Both are **conventionally-powered carriers** (not nuclear powered) that use **ski-jump ramps to assist aircraft takeoffs**.
 - ▶ The **INS Vikrant** (means "valiant"), India's **first indigenous carrier**, has been constructed by Cochin Shipyard Ltd, while the **INS Vikramaditya** was **bought from Russia** and operationally deployed in 2014.
 - ▶ **INS Vikrant marked India's entry into a select group**—China, France, the US, and the UK—of nations capable of constructing their own aircraft carriers.
- ▶ **Cochin Shipyard Limited (CSL) is poised to begin construction** on India's third aircraft carrier (its 2nd indigenous aircraft), marking a significant step towards expanding India's naval fleet.

Types of Aircraft Carriers



 <p>CATOBAR (Catapult Assisted Take-Off Barrier Arrested Recovery)</p>	<ul style="list-style-type: none"> ▶ Uses catapults (steam or electromagnetic) for aircraft launch. ▶ Operated by the U.S. (Nimitz and Ford-class) and France (Charles de Gaulle), China's Fujian. ▶ Can launch aircraft with heavy payloads and low thrust-to-weight ratios, such as AWACS. ▶ High development maintenance costs.
 <p>STOBAR (Short Take-Off Barrier Arrested Recovery)</p>	<ul style="list-style-type: none"> ▶ Uses ski-jumps for aircraft launch, without catapults. ▶ Operated by India (INS Vikramaditya and INS Vikrant), Russia, and China. ▶ Simpler and cheaper than CATOBAR but limited to high thrust-to-weight ratio aircraft. ▶ Cannot launch aircraft with heavy payloads.
 <p>STOVL (Short Take-Off and Vertical Landing)</p>	<ul style="list-style-type: none"> ▶ Cheapest type to build, often using conventional power. ▶ May feature ski-jumps, but lacks recovery systems for landing. ▶ Suitable for aircraft capable of vertical or short take-offs and landings.

Conclusion

Navigating financial constraints and operational challenges while advancing technological capabilities will be crucial for India to maintain and enhance its aircraft carrier capabilities amidst regional competition and geopolitical dynamics.

4.10. FORENSIC SCIENCE



CONTEXT

Recently, Union Cabinet approved a Central Sector Scheme 'National Forensic Infrastructure Enhancement Scheme' (NFIES) for the period from 2024-25 to 2028-29.

ANALYSIS



Significance of Forensics



Criminal investigation, particularly where witness testimony is lacking or unreliable.



Deterrence, advanced forensics may deter potential criminals knowing that sophisticated methods can link them to crimes.



Disaster victim identification, in cases of mass disasters, terrorist attacks, or war crimes.



Historical and archaeological insights, providing new insights into past events and civilizations.



Cybercrime fighting, computer forensics has become increasingly significant in combating cyber threats and solving digital crimes.

BRIEF BACKGROUND

- ▶ The scheme was approved in the context of expected increase in the workload of forensic science laboratories
 - ▷ **Bharatiya Sakshya Adhiniyam, 2023** mandates forensic investigation for offences involving punishment of 7 years or more.
- ▶ **Financial outlay** of the Scheme will be provisioned by the **Union Ministry of Home Affairs** from its own budget.

About Forensics

- ▶ Forensics involves **application of scientific methods and techniques to investigate crimes and gather evidence for use in legal proceedings.**
- ▶ It involves **collecting, preserving, and analysing physical evidence** to support or refute hypotheses in the court of law.
- ▶ **Techniques used in Forensics: DNA analysis, Fingerprint analysis, Ballistics, Toxicology, Digital forensics** for electronic devices, etc.

Challenges of Forensics in India

- ▶ **Infrastructure and resources:** E.g. ~40% shortage of staff in forensic labs across India. (BPRD)
- ▶ **Inadequate budgetary allocations:** For modernizing state police forces, including forensic capabilities.
- ▶ **Quality:** Lack of standardized procedures and protocols across different forensic laboratories results in inconsistencies in forensic results.
- ▶ **Legal and institutional:** Challenges related to admissibility and reliability of forensic evidence in courts due to issues like contamination, improper handling, etc.
- ▶ **Bureaucratic hurdles and lack of effective inter-agency coordination** often leads to inefficiencies and miscommunication.

Way Forward

- ▶ **Recommendations by Malimath Committee (2003)**
 - ▷ **Institutional:** Establish a mechanism for coordination amongst investigators, forensic experts and prosecutors at the state and district level
 - ▷ **Training and capacity building:** An year long induction training programme for newly recruited prosecutors and judges, a part of which should be with the police, forensic laboratories, courts and prisons.
 - ▷ **UGC should consider creating the departments of Forensic Science in at least all the major universities.**
- ▶ **Others**
 - ▷ **Cybercrime investigation:** Expand **Indian Cyber Crime Coordination Centre (I4C)** initiative with a focus on training more cybercrime investigators and establishing more cyber forensic labs.
 - ▷ **Public-Private Partnerships:** To expand capabilities and reduce backlogs.
 - ▷ **International collaborations:** for knowledge exchange and transfer of technology in digital forensics.

4.11. IT DISRUPTIONS AND IMPACT ON CRITICAL SERVICES



CONTEXT

Microsoft – CrowdStrike Outage caused worldwide IT disruption

- ▶ Outage was caused by a **logic error in a sensor configuration update** for Microsoft Windows systems which led to a system crash, **affecting critical sectors like healthcare and banking.**
- ▶ Later, an **assessment by the RBI** showed that **10 banks and NBFCs** in India had **minor disruptions** due to this global outage.

ANALYSIS



Impact of IT outages on critical services

- ▶ **Economic disruption:** Freezing of financial markets, shutdown of businesses reliant on cloud services, etc.
 - ▷ e.g., In 2021, major outage in National Stock Exchange halted trading for nearly 4 hours.
- ▶ **Healthcare:** Disruption of telemedicine services, inaccessible digital health records, etc.
 - ▷ e.g., 2017 **Wannacry** Ransomware attack on Hospitals in UK led to cancellation of ~19000 appointments
- ▶ **Government and security:** e.g., 2020 cybersecurity breach at Kundankulam Nuclear Power Plant of NPCIL.
- ▶ **Others:** Communication breakdown, energy sector disruptions due to failure of smart grids, etc.

Measures taken for protection of digital infrastructure



Institutional: National Critical Information Infrastructure Protection Centre (NCIIPC), Defence Cyber Agency (DCA), CERT-In, etc.



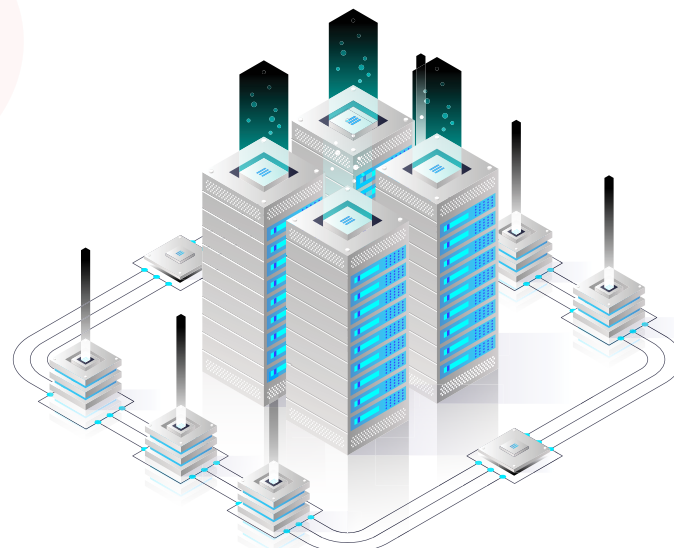
Legal: Digital Personal Data Protection Act (2023), Information Technology Act, 2000.



Policy: National Cyber Security Policy (2013), etc.

Vulnerability of digital infrastructure in India

- ▶ **Import dependence:** Heavy reliance on imported hardware and software create supply chain vulnerabilities and security risks.
- ▶ **Large digital footprint with low digital literacy:** Only 38% of households in India are digitally literate. (**Central Board For Workers Education**)
- ▶ **Limited redundancy:** Lack of adequate backup and redundancy measures, making systems more vulnerable to single points of failure.
- ▶ **Others:** State-sponsored cyber-attacks, lack of robust cybersecurity protocols, etc.



4.12. RHUMI-1

CONTEXT



RHUMI-1, developed by Tamil Nadu-based startup **Space Zone India** in collaboration with Martin Group, was launched from Thiruvudandhai in Chennai.

- ▶ It was **launched using mobile launcher** and carried **3 Cube Satellites and 50 PICO Satellites**, which will collect data on global warming and climate change.
 - ▷ **Cube satellites** are a class of **nanosatellites**, weighing between 1-10 kg.
 - ▷ **Pico satellites** are small satellites that typically weigh between 0.1 and 1 kg.

ANALYSIS



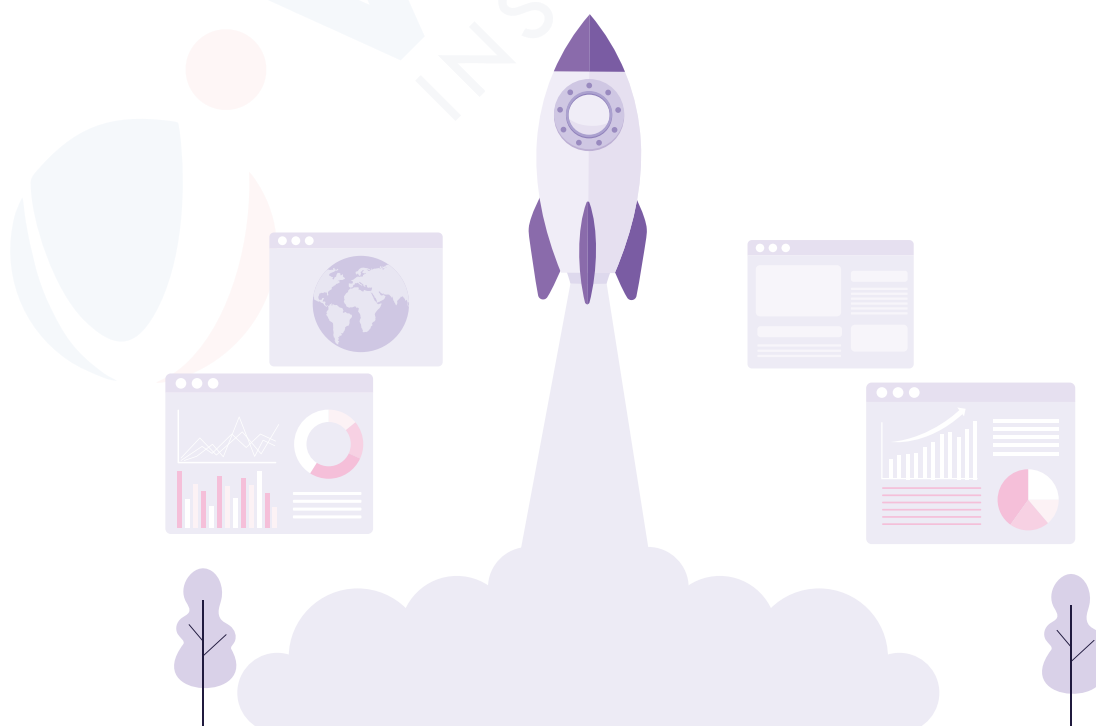
Features of RHUMI-1

- ▶ **Hybrid Rocket Engine:** RHUMI-1 is a **hybrid rocket engine** that uses a **combination of solid and liquid propellants** to improve efficiency and reduce operational costs.
- ▶ **Adjustable Launch Angle:** Precise adjustments from **0 to 120 degrees** allow for **meticulous control over its trajectory**.
- ▶ **Electrically Triggered Parachute System:** An **innovative, cost-effective, and eco-friendly** descent mechanism ensures **safe recovery of rocket components**.
- ▶ **Environment Friendly:** RHUMI is **100% pyrotechnic-free** and **0% TNT**.

BRIEF BACKGROUND

Reusable Rockets

- ▶ Reusable rockets release the payload, **lands back on Earth** and can again be launched with new payload.
- ▶ **Benefits**
 - ▷ **Cost Savings:** Up to **65% cheaper** than building a new rocket for every launch.
 - ▷ **Reduce Space Debris:** By **minimizing discarded rocket components**.
 - ▷ **Increased launch frequency:** Lesser turnaround time enables the rocket to be used more frequently.



4.13. EXERCISES IN NEWS

Exercise	Context
Tarang Shakti	Indian Air Force (IAF) hosted Phase-I of the Exercise Tarang Shakti in Tamil Nadu. It is India's first multinational air exercise.
Udara Shakti	It is a joint air exercise of India and Malaysia .
Parvat Prahaar	It was carried out by Indian Army in Ladakh , focusing on high-altitude warfare and operations and to maintain readiness near the India-China border .
Mitra Shakti	It is an annual military exercise between India and Sri Lanka
Khaan Quest	Indian army participated in Multinational military exercise , conducted at Ulaanbaatar, Mongolia.
Maritime Partnership	Indian Naval Ship Tabar participated in Maritime Partnership Exercise (MPX) between India and Russia .
Nomadic Elephant	Joint Military Exercise between armies of India and Mongolia will be conducted in Meghalaya.
Exercise MAITREE	Joint military Exercise between India-Thailand was conducted in Thailand.
RIMPAC Exercise	<ul style="list-style-type: none"> Opening ceremony of biennial Rim of the Pacific (RIMPAC) exercise was held in Hawaii (USA). It is world's largest international multilateral maritime exercise (India also takes part in it) It aims to enhance interoperability, contribute to peace and stability in Indo-Pacific region.
Exercise Freedom Edge	South Korea, US and Japan began their first trilateral multi-domain exercise, Freedom Edge. It took place in South Korea's southern island of Jeju .
Exercise Pitch Black	<ul style="list-style-type: none"> Indian Air Force Contingent reached Australia to participate in Exercise Pitch Black. It is held every two years and is a multinational exercise.
Exercise Sagar Kavach - 01/24	It is a coastal security exercise held along Andhra Pradesh coast .
JIMEX	Bilateral Japan - India Maritime Exercise (JIMEX) 2024 commenced at Yokosuka in Japan. This is the eighth edition, since its inception in 2012.
Exercise HOPEX	It is a joint military exercise between Indian Air Force (IAF) and Egyptian Air Force held in Egypt .

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4.14. TEST YOUR LEARNING

MCQs

Q.1 What is CATOBAR, STOBAR in the context of Indian defense?

- (a) A new high-melting explosive formulation certified by the Indian Navy
- (b) Types of aircraft carriers
- (c) Satellite-guided munition for precision airstrikes
- (d) None of the above

Q.2 With reference to Financial Action Task Force (FATF), which of the following statements is/are correct?

- 1.The FATF was established by G-20 Summit in 1989.
- 2.India's current Mutual Evaluation Report places it in the regular follow-up category.
- 3.FATF has 38 member countries including India

Select the correct answer using the code given below:-

- a) 1 and 3 only
- b) 1 and 2 only
- c) 2 and 3 only
- d) None of the above

Q.3 Which of the following exercises is correctly matched with its nature?

- 1.JIMEX - Bilateral maritime exercise between India and Japan
- 2.Mitra Shakti - Annual military exercise between India and Sri Lanka
- 3.Exercise Freedom Edge - Trilateral exercise between India, Japan and South Korea
- 4.Nomadic Elephant - Joint military exercise between India and Mongolia

Select the correct answer using the code given below:

- a) 1, 2 and 4 only
- b) 2 and 4 only
- c) 1 and 3 only
- d) All of the above

Q.4 Consider the following statements regarding the National Forensic Infrastructure Enhancement Scheme (NFIES):-

- 1.It is a Centrally Sponsored Scheme implemented for 2024-25 to 2028-29.
- 2.The financial outlay will be provided by the Union Ministry of Home Affairs.
- 3.Bharatiya Sakshya Adhinyam, 2023 mandates forensic investigation for offences involving punishment of 7 years or more.

Select the correct answer using the code given below:

- a) 1 and 2 only
- b) 2 and 3 only
- c) 1 and 3 only
- d) All of the above

Q.5 Consider the following statements regarding security arrangements for dignitaries in India:-

1. Security by the Union Government is provided based on the guidelines under the "Blue Book" and "Yellow Book" of the Union Ministry of Home Affairs.
2. The Special Protection Group (SPG) is responsible for providing proximate security to both Prime Minister and President.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) None of the Above

Questions

- 1) Discuss the key features of India's Nuclear Doctrine and analyze how it can be strengthened to address emerging security challenges in the 21st century. (250 words)
- 2) "Recent global IT outages highlight the double-edged nature of digital transformation in critical sectors." Discuss with reference to India's digital infrastructure vulnerabilities. (250 words)



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ENVIRONMENT



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5.1. BIODIVERSITY

5.1.1. High Seas Treaty



CONTEXT

Union Cabinet approved India to sign the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement or High Seas Treaty with the Ministry of Earth Sciences to spearhead its implementation.

ANALYSIS



About BBNJ Agreement

- ▶ Under UNCLOS for conservation and sustainable use of marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ).
- ▶ Adopted by Intergovernmental Conference on Marine BBNJ in 2023.
- ▶ Will become international law after being signed and ratified by at least 60 countries.
- ▶ As of June 2024, 91 countries signed, eight ratified.
- ▶ Objective: Ensure conservation and sustainable use of marine biodiversity.

Key Provisions of BBNJ Agreement

- ▶ Applies to Areas Beyond National Jurisdiction (ABNJ), including high seas.
- ▶ Does not apply to warships, military aircraft, or naval auxiliary.
- ▶ Part-II, dealing with Marine Genetic Resources, applies to any government vessel in non-commercial service.
- ▶ Conference of Parties (COP) as main decision-making body.
- ▶ Clearing-House Mechanism (CHM) as centralized platform for information dissemination.
- ▶ Other bodies include Scientific and Technical Body (STB) and Subject-Matter Committees.

▶ Financial Mechanism: Voluntary trust fund by COP, Special fund, Global Environment Facility trust fund.

Other provisions:

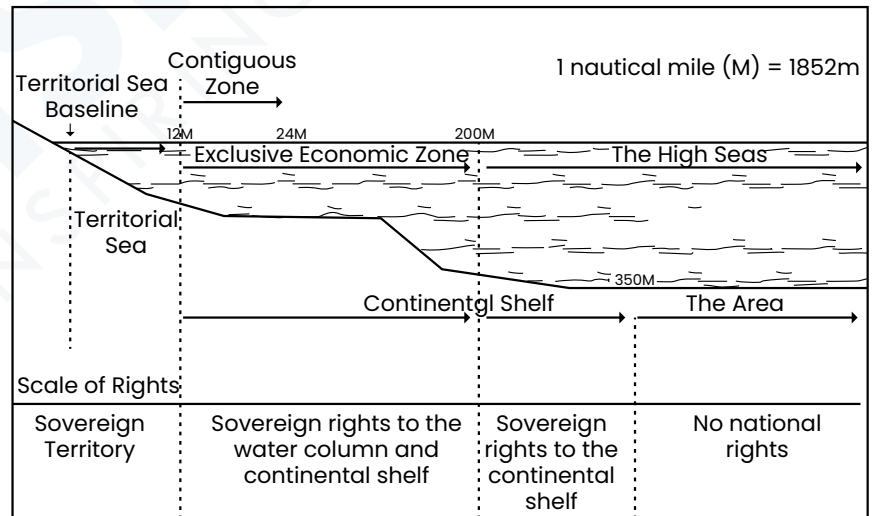
- ▶ No country must claim sovereignty over Marine Genetic Resources (MGRs).
- ▶ EIA framework for identifying and evaluating potential impacts.
- ▶ Mechanism for fair sharing of benefits associated with MGRs and associated Digital Sequence Information (DSI).

BRIEF BACKGROUND

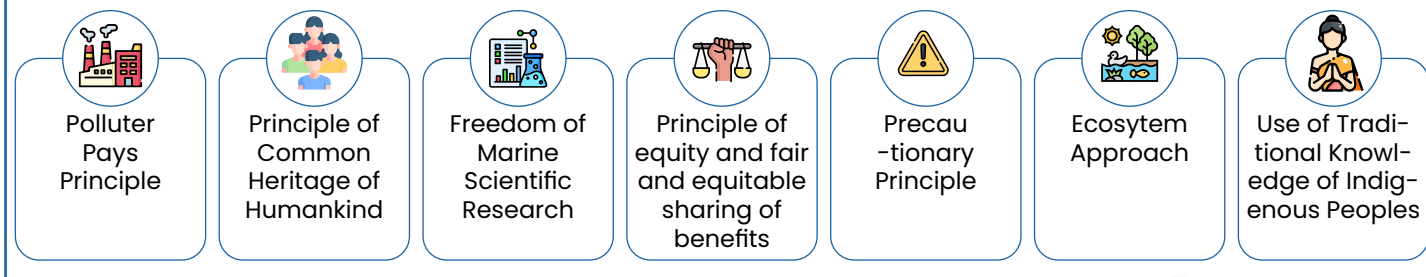
About High Seas

- ▶ Areas outside the national jurisdiction of any country.
 - ▶ Typically, national jurisdictions extend up to 200 nautical miles (370 km) from the coastline, an area called Exclusive Economic Zone (EEZ).
- ▶ Constitute 64%, roughly two-thirds, of the total ocean area considered as global commons.
 - ▶ Belongs to no one, and everyone enjoys equal rights for navigation, overflight, economic activities, scientific research, etc.

UNCLOS Maritime Zones



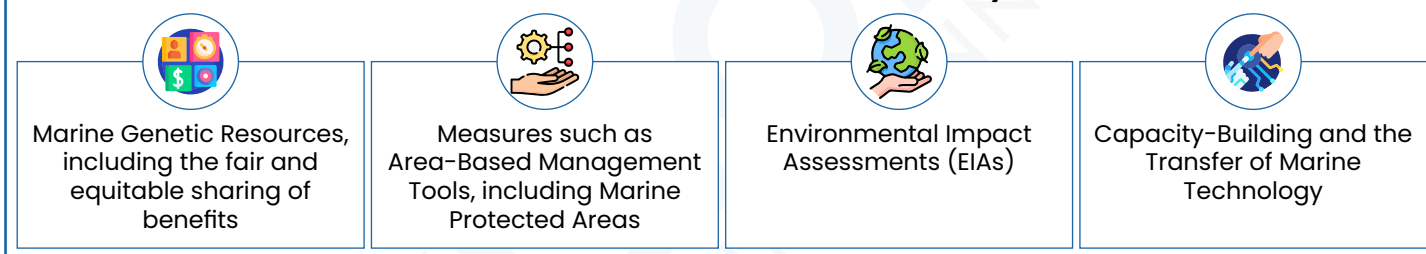
Key Guiding Principles of the Agreement



Significance of BBNJ Agreement

- Addresses overexploitation of resources, biodiversity loss, and pollution (~17million tonnes of plastics dumped in oceans in 2021)
- Achieves “30x30” initiative targets for marine ecosystem protection by 2030.
- Mitigates impacts of climate change on marine ecosystems.
- Promotes equitable economic order considering interests of developing states.
- Significance for India
 - Enhances strategic presence beyond India’s EEZ.
 - Strengthens marine conservation efforts and collaborations.
 - Promotes traditional knowledge through an inclusive, ecosystem-centric approach.

Four Substantive Elements of BBNJ Treaty



5.1.2. Great Indian Bustard

CONTEXT

Ministry of Environment, Forest and Climate Change (MoEFCC) approved funds for next phase (from 2024 to 2029) of Bustard Recovery Program.

ANALYSIS

Bustard Recovery Program

- Coverage of Species: Great Indian Bustard (GIB) and Lesser Florican.
 - There are 4 species others being Bengal Florican; Macqueen’s Bustard.
- Background: Recovery plans began in 2013 under National Bustard Recovery Plan and the Bustard Recovery Project in 2016.
 - Initial duration 2016-21 and further extended till 2033.

BRIEF BACKGROUND

About Great Indian Bustard (GIB)

Conservation Status

- Wildlife Protection Act, 1972: Schedule I and IV
- IUCN: Critically Endangered
- CITES: Appendix I



- ▶ **Current status:** Around 140 GIBs and fewer than 1,000 Lesser Floricans surviving in the wild.
- ▶ **Implemented by Wildlife Institute of India**, funded by **National Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Authority.**
- ▶ **Objectives:** Conservation Breeding, Applied Research, Capacity-Building and Outreach, and Pilot Implementation of Surgical Habitat Management.
- ▶ **Collaborating agencies:** Bombay Natural History Society, International Fund for Houbara Conservation / Reneco, The Corbett Foundation, Humane Society International, Jivdaya Charitable Trust, The Grasslands Trust.
- ▶ **Partner agencies:** MoEFCC, Rajasthan, Gujarat & Maharashtra Forest Departments

Steps taken for GIBs

- ▶ **Declaration of Protected Areas:** National Parks/sanctuaries like Desert National Park, Rajasthan, Naliya Grassland, Lala Bustard Wildlife Sanctuary.
- ▶ **Species Recovery Programme:** Covers GIBs.
- ▶ **Legal Protection:** Schedule-I of the Wild Life (Protection) Act, 1972.
- ▶ **Supreme Court:** Monitoring GIB and Lesser Florican conservation programme.
- ▶ **Others:** Capacity Development, Training, financial and technical assistance, conservation breeding and in-situ conservation projects.

Conclusion

Multi-level collaboration beyond single species, to protect whole ecosystems. Addressing complex challenges demands coordinated action for long-term conservation success.

Key Characteristics

- ▶ **Habitat:** Agro-grassland bird endemic to Indian Subcontinent confined mainly in **Rajasthan and Gujarat**, with small populations in **Maharashtra, Karnataka, and Andhra Pradesh.**
- ▶ **Omnivorous** bird feeding on grass seeds, insects, rodents, reptiles.
- ▶ **Lacks frontal vision** and primarily breeds during monsoon
- ▶ **Considered indicators** of grassland ecosystem health.

Threats to GIBs



Predation: Domestic and feral animals (dogs, cats) and natural predators target eggs and chicks.



Power lines: GIBs are more vulnerable due to narrow frontal vision and large size. As per WII study, (2020) 18 GIBs die annually due to power lines.



Poaching and Hunting: Hunted for meat, feathers, and body parts despite legal protection.



Human Disturbance: Grazing, recreation, and tourism disrupt nesting and foraging areas.



Organophosphate pesticides: Continuous exposure of such contaminated feed to birds could pose a severe threat in the near future.



Climate Change: Alters Habitat degradation and availability of food resources.



5.1.3. New Ramsar Sites



CONTEXT

With the addition of news sites, the total number of Ramsar sites in India has reached to 85 (Tamil Nadu having maximum followed by Uttar Pradesh).

ANALYSIS



About the New Ramsar Sites

- ▶ **Nagi and Nakti bird sanctuaries, Jamui, Bihar**
 - ▷ Both are **man-made reservoirs** (Nagi dam and Nakti dam) and feature **dry deciduous forests surrounded by hills**.
 - ◊ Although Nagi lies in the Gangetic Plains of India, it has a **landscape reminiscent of the Deccan Plateau**.
 - ▷ They are also recognized as an **Important Bird and Biodiversity Area (IBA)** by BirdLife International.
 - ▷ **Major birds' habitat**
 - ◊ **Migratory birds:** Bar-headed Goose, Greylag Goose, Northern Pintail, Red-crested Pochard, Steppe Eagle, etc.
 - ◊ **Resident birds:** Indian Robin, Ashy-crowned Sparrow-Lark, Asian Koel, Asian Pied Starling, Bank Myna, etc.
- ▶ **Nanjarayan Bird Sanctuary (Tamil Nadu)**
 - ▷ **Nanjarayan Lake a large shallow wetland** named after King Nanjarayan (who restored and repaired it).
 - ▷ It depends on **heavy rain water flow from Nallar drainage**.
 - ▷ Acts as **feeding and nesting habitat for resident and migratory birds**; water source for agricultural purpose.
- ▶ **Kazhuveli Bird Sanctuary (Tamil Nadu)**
 - ▷ **Brackish shallow lake** located on Coromandel Coast in North of Pondicherry.
 - ▷ **Connected to Bay of Bengal** by brackish Uppukalli creek and Yedayanthittu estuary.
 - ▷ **Lies in Central Asian Flyway** of migratory species.
 - ▷ **Breeding ground** for birds, fish; **source for aquifer recharge**; houses highly degraded mangrove patches containing **Avicennia species**
- ▶ **Tawa Reservoir (Madhya Pradesh)**
 - ▷ Located **inside Satpura Tiger Reserve and borders Satpura National Park and Bori Wildlife Sanctuary**.
 - ▷ Constructed at **confluence of Tawa and Denwa rivers**.
 - ▷ **River Tawa** (left bank tributary of Narmada River) originates from Mahadeo Hills.
 - ▷ **Rivers Malanni, Sonbhadra and Nagdwari** are major tributaries of reservoir.

BRIEF BACKGROUND

About Wetland

- ▶ An area of land that is saturated with water.
- ▶ **Must meet at least 1 of 9 criteria** like regularly supports 20,000 or more water birds, or conserving biological diversity etc.

Ramsar Convention

- ▶ **Intergovernmental treaty** for the **conservation and wise use of wetlands** and their resources.
- ▶ Adopted at Ramsar (Iranian city) in 1971 and enforced in 1975.
- ▶ India became a party in 1982.
- ▶ '**List of wetlands of international importance**' or the **Ramsar List** contains wetlands which hold **significant value for humanity as a whole**.

Ramsar list



Wetlands in the Ramsar list meet at **least one of nine** criteria as defined under the conventions including **supporting vulnerable, endangered, or critically endangered species or threatened ecological communities**.



Contracting **Parties are expected to manage** their Ramsar Sites to maintain their ecological character.



Montreux Record : Ramsar sites where **changes in ecological character have occurred**, are occurring, or are likely to occur as a result of technological developments, pollution or other human interference. **Loktak (Manipur) and Keoladeo National Park (Rajasthan)** of India are included in it.

5.1.4. 67th Global Environment Facility (GEF) Council Meeting



CONTEXT

67th GEF Council approved \$736.4 million funding.

ANALYSIS



Source of Funding

- ▶ Funding has been mobilized for Projects from the **GEF Trust Fund**, **Least Developed Countries Fund (LDCF)**, and **Global Biodiversity Framework Fund (GBFF)**, which are a part of the **GEF family of funds**.

Projects Included

- ▶ Includes Projects like **Great Green Wall (GGW)**, **Sustainable Cities Integrated Program (SCIP)** etc.
 - ▷ **GGW** focused on restoring landscapes and ecosystems across the Sahel region of Africa.
 - ▷ **SCIP** is a 20-country program to catalyze urban system transformation.
- ▶ **Two Indian Projects-**
 - ▷ Conservation and sustainable use of biodiversity to meet commitment to the **Kunming-Montreal Global Biodiversity Framework targets**.
 - ▷ **CoHABITAT** - Conservation and sustainable management of **wetlands forest** and **grassland** to secure migratory species' population along the **Central Asian Flyway in India**.
 - ◊ Projects are implemented by the **UNDP** along with **Indian Ministry of Environment, Forest, and Climate Change** acting as executive agency.

BRIEF BACKGROUND

About Global Environment Facility (GEF)

- ▶ **Genesis:** Established in 1992 during the eve of **Rio Earth Summit**.
- ▶ **About:** Partnership of 18 agencies to address the world's most challenging environmental issues.
- ▶ **Functions:** Serves as a financial mechanism to five conventions.
- ▶ **Members:** 186 countries (India is a member)

Conventions under GEF

- Convention on Biological Diversity (CBD)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- UN Convention to Combat Desertification (UNCCD)
- Minamata Convention on Mercury

5.1.5. 50th year of Crocodile Conservation Project



CONTEXT

It was launched in **Odisha's Bhitarkanika National Park** in 1975 with the assistance of **United Nations Development Programme (UNDP)** and the **UN's Food and Agriculture Organisation (FAO)**.

ANALYSIS






About Crocodiles

- ▶ **Largest surviving species** of the vertebrate class **Reptilia**.
- ▶ **Habitat:** **Mainly in freshwater swamps, lakes and rivers** (except for one saltwater species).
- ▶ **Behaviour:** **Nocturnal animals** and are **poikilothermic** (regulate their body temperature only to limited degree).

- ▶ There are **three main species of crocodiles in India** (see table).
- ▶ **Major threats:** Habitat destruction, egg predation, illegal poaching, dam construction, sand mining etc.

Bhitarkanika National Park

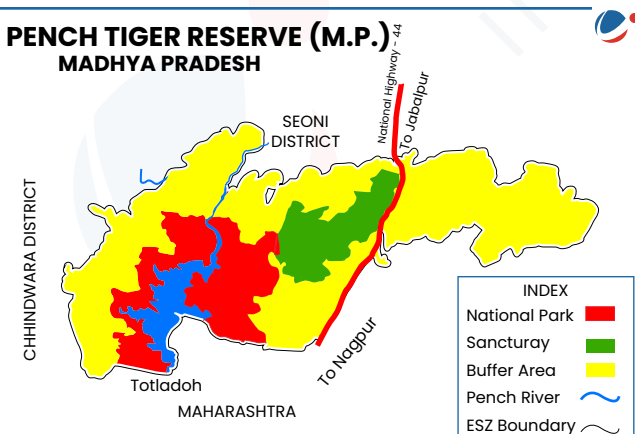
- ▶ Located in **Odisha**
- ▶ A **ramsar site** and **India's second largest mangrove ecosystem** after the Sunderbans.
- ▶ Network of **creeks and canals** inundated with waters from **Brahmani, Baitarani, Dhamra and Patasala** rivers.
- ▶ Home to **largest congregation of Saltwater Crocodile** along with water monitor lizard, pythons, hyenas etc.

Brief Background		
Species	Description	Natural Habitat
Estuarine or saltwater crocodile (<i>Crocodylus porosus</i>) 	<ul style="list-style-type: none"> • Largest living reptile on earth. • IUCN: Least Concern • Schedule I of Wildlife Protection Act, 1972 (WPA) • CITES: Appendix I 	<ul style="list-style-type: none"> • Found in only three locations: Bhitarkanika, Sundarbans and Andaman and Nicobar Islands.
Mugger or marsh crocodile (<i>Crocodylus palustris</i>) 	<ul style="list-style-type: none"> • Broad snouts, dig burrows or holes for nesting purposes. • IUCN: Vulnerable • Schedule I of WPA • CITES: Appendix I 	<ul style="list-style-type: none"> • It is present in 15 of India's states including much of the Ganga River drainage.
Gharial (<i>Gavialis gangeticus</i>) 	<ul style="list-style-type: none"> • Named Gharial due to a bulbous knob at the end of their long narrow snout. • Primarily eats fish. • IUCN: Critically Endangered • Schedule I of WPA • CITES: Appendix I 	<ul style="list-style-type: none"> • Inhabit freshwater rivers: Chambal, Girwa, Ghagra, Son and Gandak.

5.1.6. Protected Areas in News

Pench Tiger Reserve

Context: Advanced Artificial Intelligence (AI) system for early detection of forest fires has been launched here



**PENCH TIGER RESERVE (M.P.)
MADHYA PRADESH**

SEONI DISTRICT
CHHINDWARA DISTRICT
Tottladoh
MAHARASHTRA

National Highway-44
To Jabalpur
To Nagpur

INDEX
National Park (Red)
Sancturay (Green)
Buffer Area (Yellow)
Pench River (Blue)
ESZ Boundary (Wavy line)

- ▶ **Location:** Across states of Maharashtra, Madhya Pradesh in lower southern reaches of Satpura hills.
- ▶ **Background:** Declared National Park, 1975, and Tiger Reserve, 1992.
- ▶ **Forest Types:** South Indian **Tropical Moist Deciduous**, Southern **Tropical Dry Deciduous Teak**, and **Southern Dry Mixed Deciduous**.
- ▶ **Pench River** divides it into two halves.
- ▶ **Flora:** Mahua, White Kulu, Salai, Saja, Bijiyasal, Dhaora, Amaltas, etc.
- ▶ **Fauna:** Tiger, leopard, sloth bear, Indian gaur, wild dog, wolf, etc.
- ▶ Mentioned in **Ain-i-Akbari** and it is the original setting of **Rudyard Kipling's most famous work, The Jungle Book**.

5.1.7. Species in News

Iberian lynx

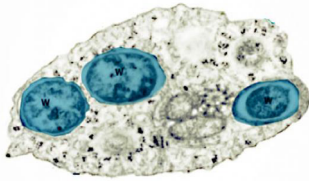
- Context: According to IUCN, conservation status of Iberian lynx has improved from Endangered to Vulnerable, reflecting significant increase in its population.



- Native to **Iberian Peninsula, Portugal and Spain.**
- Appearance:** Medium sized, weighing half as heavy as Eurasian species.
- Characteristics:** Solitary hunter, nocturnal lives in small, isolated meta-populations, European Rabbit accounts for 80-99% diet.
- Threats:** Decreasing food base, Poaching, habitat loss etc.
- Conservation status:** Appendix I of CITES.

Wolbachia Bacteria

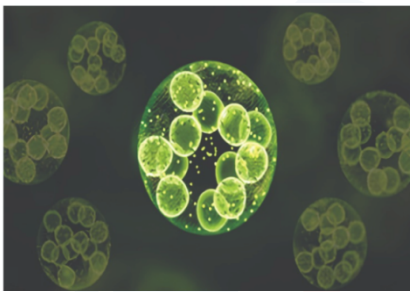
- Context:** Recent study highlighted that Wolbachia bacteria manipulated wasp *Encarsia Formosa* to get rid of its males.
 - Encarsia Formosa* wasps helps in controlling population of whiteflies, a major agricultural pest.



- Commonly found in **nematodes and arthropods**, especially in eggs of insects (absent in sperms).
- Hence, females can transmit it to their offspring while males can't.
- As a result, Wolbachia have evolved ways through its **Tragene** to manipulate their insect hosts producing more female than male progeny.
- Potential Application:** Mosquitoes with Wolbachia can be used to reduce numbers of target mosquito species, example, *Ae. Aegypti* mosquitoes.

Microalgae

- Context:** CSIR-IICT scientists highlighted microalgae potential as a protein supplement.



- Diverse group of single-cell photosynthetic organisms**, both prokaryotes and eukaryotes.
- These are groups of **autotrophic microorganisms** that live in marine, freshwater, and soil ecosystems.
- Significance:**
 - Nutrition:** Rich in nutrients and biologically active substances like proteins, vitamins, etc.
 - Carbon cycle:** Absorb carbon dioxide, produce oxygen through photosynthesis.
 - Food Chain:** Phytoplankton, forming the base of the food chain, includes microalgae.

Jerdon's Courser

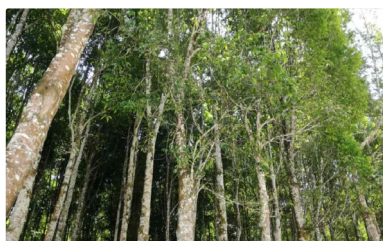
- Context:** Jerdon's Courser has not been visually spotted in over a decade.



- Nocturnal bird** found only in Eastern Ghats.
- Exclusively endemic to Andhra Pradesh, specifically Sri Lankamalleswara Wildlife Sanctuary in Kadapa, Andhra Pradesh.
- Protection Status:**
 - Under **Integrated Development of Wildlife Habitats'** (IDWH) scheme.
 - Schedule-I** of the Wildlife (Protection) Act, 1972
 - IUCN Status:** Critically Endangered

Aquilaria Malaccensis (agarwood)

► **Context:** CITES eases export of agarwood from India, move to benefit lakhs of farmers.



- **Evergreen tree** native to Northeast India, Bangladesh, Bhutan, and parts of Southeast Asia,
- Considered a **precious aromatic plant** in the region.
- **Economic Utility:** aromatic plant's oil and chips are highly valued.
- **Protection:**
 - ▷ **IUCN Status:** Critically Endangered
 - ▷ **CITES:** Appendix II
 - ▷ **Wildlife (Protection) Act, 1972:** Schedule IV

Ceropegia Shivrayiana

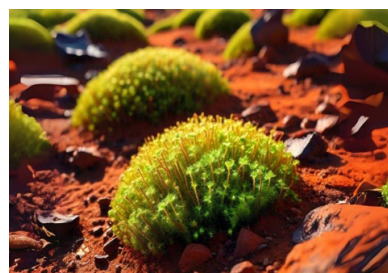
► **Context:** Flowering plant from Ceropegia genus) has been discovered in Vishalgad area of Kolhapur. It has been named after Chhatrapati Shivaji Maharaj.



- **Rare plant** endemic to India.
- Has unique, tubular flowers that attract moths.
- **Habitat:** Rocky places & can survive in soil with few nutrients.
- **Family:** Asclepiadaceae family, which includes many medicinal plants.
- **Similarity:** Species is similar to Ceropegia lawii Hooker f., but differs in having a climbing habit, hairy peduncles etc.
- **Threat:** Habitat loss

Syntrichia Caninervis

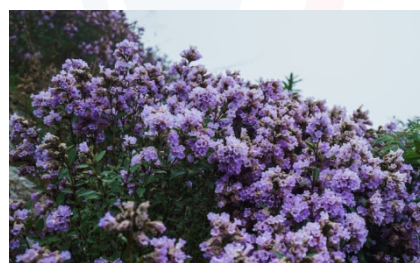
► **Context:** Scientists found a desert moss - **Syntrichia Caninervis** - which is able to withstand Mars-like environment conditions.



- **Mosses** are small, non-vascular flowerless plants in the taxonomic division Bryophyta.
- Commonly found in **moist-shady locations** and are distributed throughout the world except in salt water.
- **About Syntrichia Caninervis**
 - ▷ Widespread in some of Earth's harshest locations including Antarctica and the Mojave Desert.
 - ▷ It could be the first possible pioneer species for the colonization of Mars.

Neelakurinji (Strobilanthes kunthiana)

► **Context:** It has been included on the IUCN (International Union for Conservation of Nature) official Red List of threatened species under the **Vulnerable category**.



- **About:** Shrub known for massive blooming every 12 years. Semelparous, i.e., single reproductive episode before death.
- **Location:** Shola grasslands of Western Ghats - the Nilgiri hills, Palani hills and the Eravikulam hills of Munnar, also Shevaroy hills in the Eastern Ghats.
- The name Nilgiris (blue mountains) was derived from the colors of these flowers.
- **Major Threats:** Tea and softwood plantations, urbanization, invasion of exotic species like eucalyptus, black wattle, etc.

5.2. CLIMATE CHANGE

5.2.1. Small Island Developing States (SIDS) and Climate Change



CONTEXT

Panama became the first nation to **evacuate** an island community due to climate impact. Due to rising sea levels, about 300 Indigenous Guna families are being relocated from the **Gardi Sugdub island to mainland Panama**.

ANALYSIS



How is climate change affecting SIDS?

- ▶ **Threat of forceful displacement** due to coastal erosion and submergence.
 - ▷ E.g., it is estimated that, **by 2050, half of Tuvalu's capital will be flooded** by tidal waters.
- ▶ **Economic impact:** E.g., Ocean Acidification impacts marine ecosystems like coral reefs and affects tourism, fisheries, etc.
 - ▷ From 1970 to 2020, **SIDS lost US\$153 billion due to weather extremes**, a significant amount relative to the average GDP for SIDS, \$13.7 billion.
- ▶ **Disproportionate impact on indigenous population**
- ▶ **Climate injustice:** Accounting for **only 1% of global emissions**, SIDS hold the least responsibility for the climate crisis, yet **suffer from its worst impacts**.
- ▶ **Lack of access to economic prowess and technological advances** to tackle climate change.
- ▶ **Access to drinking water:** Climate change and sea-level rise are likely to **threaten freshwater resources through saltwater intrusion** within freshwater aquifers.
 - ▷ E.g. **Bahamas** is almost entirely dependent on groundwater.

Measures taken for Protection of SIDS

- ▶ **Alliance of Small Island States (AOSIS):** intergovernmental organization advocating for SIDS.
- ▶ **Global Conference on the Sustainable Development of Small Island Developing States (1994) (Barbados Programme of Action)**
- ▶ **UNDP initiatives:** Climate Promise Initiative; Progressive Platforms Initiative.
- ▶ **Small Island Developing States Accelerated Modalities of Action (SAMOA) Pathway.**
- ▶ **Coalition for Disaster Resilient Infrastructure (CDRI):** Announced **\$8 Million funding** through its **Infrastructure for Resilient Island States (IRIS)** programme.
- ▶ **Infrastructure Resilience Accelerator Fund (IRAF) (2022):** **US\$50 Million Trust Fund** established with the support of **UNDP and UNDRR**, with special focus on **developing countries and SIDS**.

Way forward

- ▶ **Integrating risk reduction strategies** with other **sectoral policy initiatives**.
- ▶ **Improve data collection and technical capacity** through **climate change impact and vulnerability assessments**.
- ▶ **International Financing:** E.g., **Bridgetown Initiative (2022)** proposed a **SDG Stimulus package** to invest in **SDGs**.

BRIEF BACKGROUND

About Small Island Developing States (SIDS)

- ▶ They share **similar sustainable development challenges** and facing similar social, economic and environmental **vulnerabilities**.
 - ▷ **E.g., of SIDS:** Maldives, Seychelles, Marshall Islands, Solomon Islands, Singapore etc.
- ▶ **Located in 3 geographic regions:** Caribbean, Pacific, and Atlantic, Indian Ocean and South China Sea (AIS).
- ▶ Recognized as **special case** at the **1992 United Nations Conference on Environment and Development** for their environment and development.

Common characteristics of SIDS



Remoteness making access to them difficult.



Small populations limiting potential for economic growth.



Dependence on Ocean resources making ocean and marine resources vital to their **economies**.



Limited access to finance, most SIDS do **not qualify for concessional finance** as they are categorized as **middle-income** countries.

- ▶ **Nature-based solutions:** E.g. Blue Carbon projects, restoring degraded ecosystems etc.
- ▶ **Promote renewable energy:** E.g., **SIDS Lighthouses Initiative**- targets 10GW renewable energy installed capacity in SIDS by 2030.

5.2.2. Indian Himalayan Region (IHR)



CONTEXT

Recent Supreme Court judgments suggest that the Indian Himalayan Region (IHR) needs a sustainable development model to ensure its freedom from climate change impact.

ANALYSIS



Observations by the Court

- ▶ **MK Ranjitsinh vs. Union of India (2024):** Recognized **right to be free** the adverse effects of climate change under Articles 14 and 21 of Indian Constitution.
- ▶ **Ashok Kumar Raghav vs Union of India (2023):** Asked the Centre to suggest a way forward enabling the Court to pass directions on carrying capacity of Himalayan States
- ▶ **State of Telangana vs Mohd. Abdul Qasim (2021):** Court emphasized need for **ecocentric** (keeping nature at the Centre) view of environment and alignment of growth and development with science and human rights.

Importance of IHR

- ▶ **Drainage and Water Resources:** It is a 'water tower of the earth', supporting livelihoods for 1.4 billion people.
- ▶ **Ecosystem Services:** Provides food, medicine, genetic resources, and services like carbon sequestration and water regulation.
- ▶ **Climate Regulation:** Prevents frigid, dry arctic winds and forms a **barrier for monsoon winds**, causing rainfall in the south.
- ▶ **Tourism Potential:** High-altitude lakes, mountain peaks, and sacred natural sites attract tourists.

Challenges associated with IHR: Unsustainable development, Rising Tourism, Impact of Climate Change, Water Crisis, Flaw in Environment Clearance System, etc.



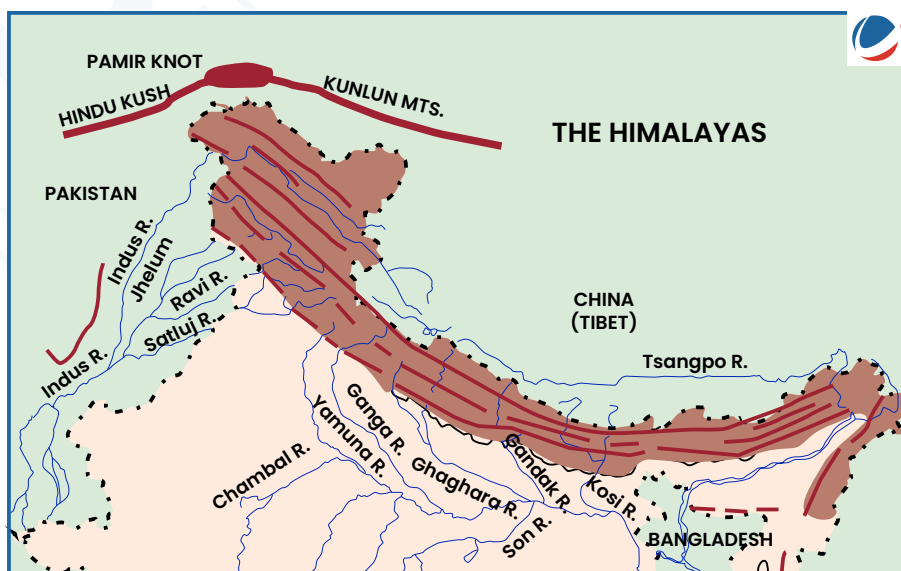
Read From Essential Material

Chapter 2: Structure and Physiography (Geography Class XI Indian Geography)

BRIEF BACKGROUND

About Indian Himalayan Region

- ▶ **Tectonically active Young fold mountains** formed 50 million years ago by **collision between Eurasia and Indian plate.**
- ▶ Spread across **13 Indian States/Union Territories.**
- ▶ Occupies **18% of India's total area and 50% of forest cover and biodiversity.**
- ▶ Biodiversity hotspot for various plant and animal species.



Steps taken to Protect IHR



National Mission for Sustaining the Himalayan Ecosystem (NMSHE): To scientifically assess the vulnerability of the Himalayan region to climate change.



Indian Himalayas Climate Adaptation Programme (IHCAP): Aims at strengthening the capacities of Indian institutions in climate science, adaptation planning.



SECURE Himalaya Project: Promotes sustainable management of alpine pastures and forests, conserve endangered wildlife (like snow leopards) and ensure sustainable livelihoods for local communities.



Himalayan State Regional Council: Constituted by NITI Ayog to ensure sustainable development of the Indian Himalayan region.

Way-forward for Himalayan Development

- ▶ Establish a **“Himalayan Authority”** for holistic development coordination and monitoring of SDGs.
- ▶ Develop **“Smart Mountain Tourism Destinations”** and introduce **‘Green Cess’ for eco-certification.**
- ▶ Improve **water security** by building on **best practices** (e.g., Dhara Vikas in Sikkim and others) for spring revival.
- ▶ Strengthen research on resource use and management, **blending traditional knowledge with modern scientific approaches.**
- ▶ Improve the **Clearance System** by implementing an **Environment Impact Assessment (EIA)** for project identification

5.2.3. Bonn Climate Change Conference Concluded



CONTEXT

Progress was made toward **adaptation indicators** and better functioning of **international carbon market** under **Article 6 of the Paris Climate Deal** during the conference.

ANALYSIS



New Collective Quantified Goal

- ▶ Proposed in COP21 for setting post-2025 climate finance goal (new goal).
 - ▷ In 2009 parties to UNFCCC decided to **mobilise \$100 billion annually by 2020** subsequently extended to 2025. However, developed countries **failed to deliver this target fully.**
 - ▷ NCQG proposed to raise floor on **climate finance above current \$100 billion annual target** addressing key shortcomings in current climate financing mechanism.

Mitigation Work Programme

- ▶ Established at COP26 to urgently enhance mitigation ambition and implementation to **achieve 1.5°C goal of the Paris Agreement.** Program in 2024 will focus on **“Cities: buildings and urban systems”**, including by
 - ▷ **Reducing operational emissions** (heating, cooling);
 - ▷ **Designing building envelope** for efficiency (retrofitting);
 - ▷ **Reducing embodied emissions** (building materials).

BRIEF BACKGROUND

About SAPCC

- ▶ **States/UTs prepare SAPCCs** to address climate change adaptation and mitigation.
- ▶ **Context-specific**, considering ecological, social, and economic conditions.
- ▶ **Align with National Action Plan on Climate Change (NAPCC)** released in 2008 outlining national strategy for India.
- ▶ **Funding comes from Climate Change Action Plan scheme.**
- ▶ **34 States/UTs** have prepared their SAPCC.

Significance of State level climate strategies/Plans:



Enabling a just transition: E.g. Swaniti initiative in Jharkhand.



Integrating climate action into decentralized development planning: E.g. Carbon Neutral Meenangadi project in Kerala.



Conservation of mangroves and marine biodiversity: E.g. Mangrove cell of Maharashtra

5.2.4. State Action Plan on Climate Change (SAPCC)



CONTEXT

Delhi government to overhaul its State Action Plan on Climate Change (SAPCC) originally adopted in 2019 amid intensifying extreme weather like heatwaves and rains this year.

ANALYSIS



Barriers to implementation of SAPCC

- ▶ Lack of leadership and political will due to top down approach & already existing strategies/plans.
- ▶ Lack of clear actions to facilitate implementation.
- ▶ Resource constraints as funding expected from central government/elsewhere.

Way forward

- ▶ International climate finance could cover additional costs of adaptation.
- ▶ Nominating nodal officers (For addressing institutional bottleneck) within each key department to act as a focal point.
- ▶ Developing detailed project reports & Regular updation of plan.

BRIEF BACKGROUND

About Article 6 of the Paris Climate Deal

- ▶ Helps achieve countries' emission-reduction goals with two main market mechanisms:
 - ▷ Bilateral deals between countries and
 - ▷ A new global offset market
- ▶ New Collective Quantified Goal (NCQG) on climate finance & negotiations on Mitigation Work Programme (MWP) remained main issues with no progress.

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21 NOV, 6 PM

5.2.5. White paper on Glacial Geoengineering



CONTEXT

A group of scientists have released a landmark white paper on glacial geoengineering.

ANALYSIS



Glacial Geoengineering

Deliberate modification of the climate system around a glacier to slow the melt of the ice shelf and reduce sea level rise.

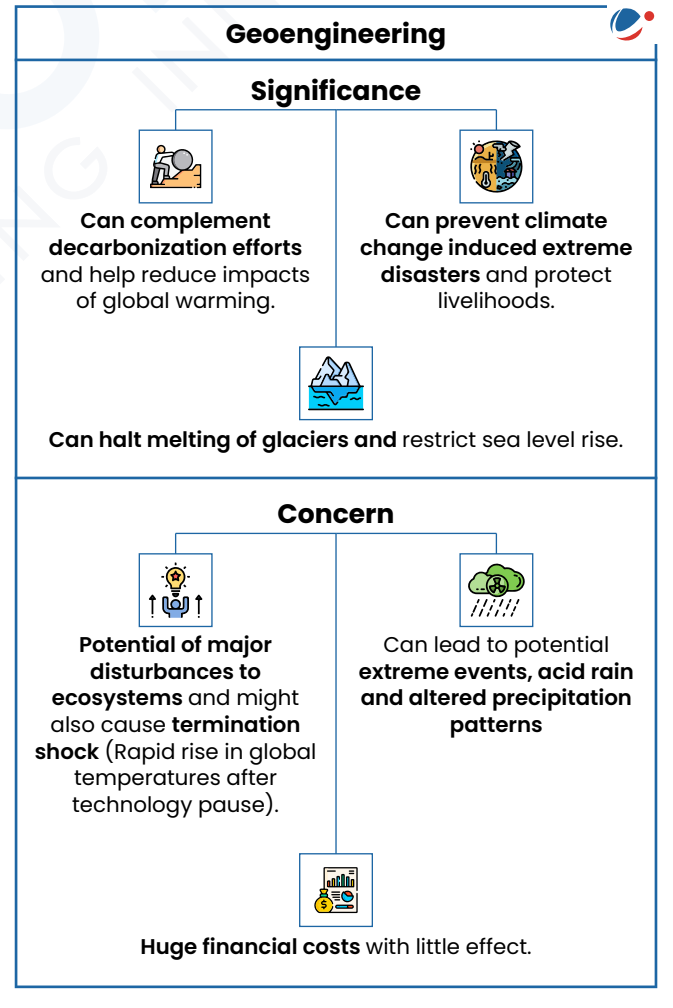
Proposed Glacial Geoengineering Strategies

- ▶ **Ocean-heat transport interventions:** Setting sediment berms or curtains to block warm circumpolar deep water flow.
- ▶ **Basal-hydrology interventions:** Slowing flow of streams carrying meltwater off ice sheets.
 - ▶ **Drilling holes** through glacier beds to create drainage channels.

BRIEF BACKGROUND

About Geoengineering

- ▶ Deliberate manipulation of Earth's climate systems to counteract global warming.
- ▶ Categories include
 - ▶ **Solar Geoengineering / Solar Radiation Management (SRM)**
 - ▶ SRM aims to limit sun's radiation and reduce global average temperature.
 - ▶ **Carbon Geoengineering / Carbon Dioxide Removal (CDR).**
 - ▶ CDR strategies include Aerosol Injection, Marine Cloud Brightening, Albedo Improvement, Ocean Mirror.



5.3. POLLUTION

5.3.1. 30th Anniversary of UNCCD



CONTEXT

30th anniversary of the United Nations Convention to Combat Desertification (UNCCD).

ANALYSIS



Issue of Land Degradation and Desertification

- ▶ It is the **deterioration or loss of the productive capacity** of the soils for present and future.
- ▶ Affects up to **40% of the world's land area**, causing loss of 100 million hectares of healthy land each year.
- ▶ **32% and 25% of land in India is under degradation and desertification in India.**

Flagship initiatives on preventing Land Degradation

- ▶ **Land Degradation Neutrality (LDN) target setting programme (LDN TSP), 2015:** Parties were invited to formulate voluntary targets to achieve LDN.
 - ▷ **India committed to restore 26 million hectares by 2030.**
- ▶ **Strategic Framework 2018–2030 in 2017:** Urged nations to incorporate desertification/land degradation and drought concerns into national policies.
- ▶ **Other initiatives:** the Great Green Wall (2007), The Changwon Initiative (2011), International Drought Resilience Alliance (2022), G20 Global Land Initiative (2020), etc.

BRIEF BACKGROUND

About UNCCD

- ▶ Established in 1994, it is the **sole legally binding international agreement** linking environment and development to sustainable land management.
 - ▷ One of the three global agreements known as the **Rio Conventions (1992)**, alongside the **UN Framework Convention on Climate Change (UNFCCC)** and the **Convention on Biological Diversity (CBD)**.
- ▶ **Members:** 196 countries and the European Union.
- ▶ **Objectives**
 - ▷ **Protect and restore land**, ensure a safer, just, and more sustainable future.
 - ▷ Committed to **bottom-up approach**, encouraging the **participation of local people** in combating desertification.
- ▶ **Report:** Global Land Outlook.

5.3.2. Air pollution harms pollinators More: Study



CONTEXT

Recent study in Nature Communications reveals that air pollution disproportionately harms pollinators like bees and butterflies while crop-destroying pests remain largely unaffected.

ANALYSIS



Key Findings

- ▶ **Scent-based communication disruption:** Alters scent trail (airborne chemical signals), disrupting bees' and wasps' ability to locate flowers, mates, or prey.
- ▶ **Biological impact:** Impacts feeding, growth, survival, and reproduction, the ability to locate food most severely impaired.

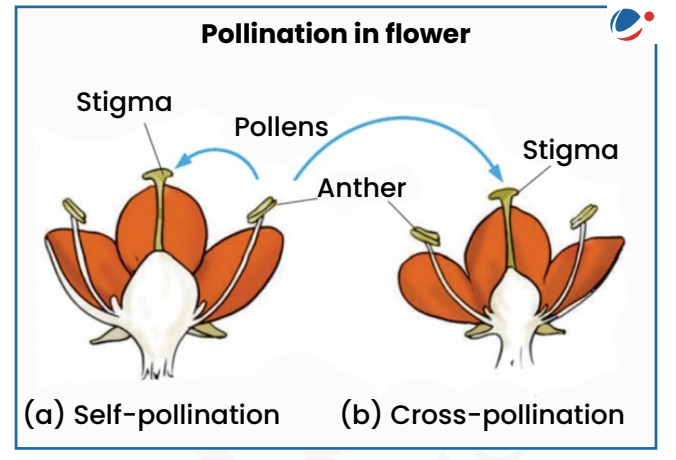
BRIEF BACKGROUND

About Pollination and pollinators

- ▶ Pollination is a crucial part of **plant reproduction**, transferring pollen grains from male anther to female stigma.
- ▶ Types include **self-pollination** within the same flower or another flower of the same plant, and **cross-pollination** to flowers of different plant of same kind.

- ▶ **Ozone reduced beneficial insects' ability** to thrive by around 34%. Nitrogen oxides also had substantial negative effects.
- ▶ **Damage at low pollution levels:** Changes in insect performance occur even at low levels of air pollution.

- ▶ **Pollinators are agents or facilitators of pollination**, including abiotic (wind and water) and biotic (insects, birds, bats).



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5.4. SUSTAINABLE DEVELOPMENT

5.4.1. Great Nicobar Island



CONTEXT

NITI Ayog prepared a Draft Report on **Social Impact Assessment (SIA)** Study for Greenfield International Airport – Great Nicobar.

ANALYSIS



About the “Holistic Development of Great Nicobar Island (GNI) in Andaman and Nicobar(A&N) Islands” Project

- ▶ Proposed by **A & N Administration** under the guidance of **GoI** and **NITI Aayog**.
- ▶ Granted **in-principal forest clearance** and **environmental clearance** in **2022**.
- ▶ **Implementation Agency: Andaman and Nicobar Islands Integrated Development Corporation (ANIIDCO)** (incorporated under the **Companies Act 1956**).
- ▶ **Projects Proposed:**
 - ▷ **International Container Transshipment Terminal (ICTT); Green Field International Airport; Township and Area Development; Power Plant**

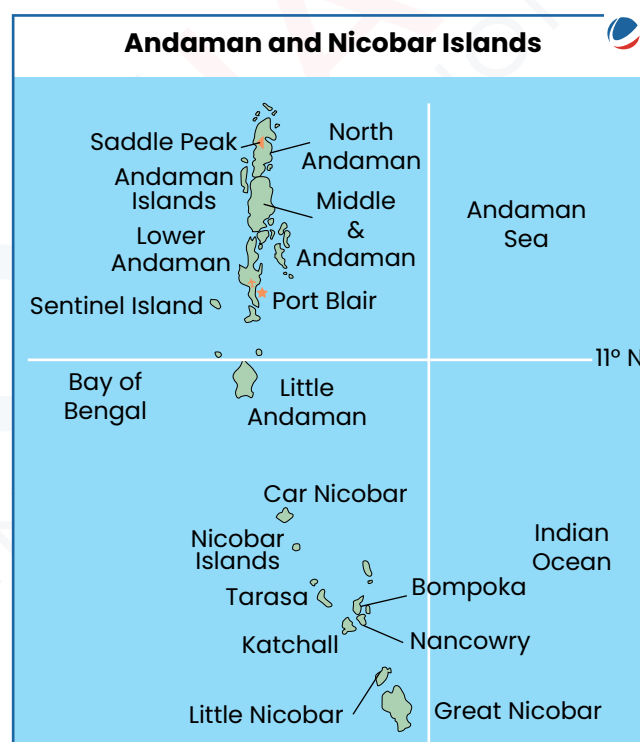
Need and Importance of the Project

- ▶ **Strategic Location:** Near major international sea route, carries about **20-25% of global sea trade** and **35% of world oil supplies**.
- ▶ **Counter foreign power consolidation:** For instance, **China’s String of Pearls** to encircle India.
- ▶ **Improving Connectivity:** With the **Indian mainland** and other global cities.
- ▶ **Promoting sustainable tourism:** In tropical forests, **adventure tourism, beach tourism, water sports** such as **scuba diving** etc.

Concerns related to the project

- ▶ **Environmental concerns:** Loss of top soil, sewage waste generation, impact on mangroves, artificial illumination on the beach might affect sea turtle nesting and hatching.
- ▶ **Threat to fauna:** Galathea Bay, one of the world’s largest nesting sites for the **leatherback turtle**, a species listed under Schedule I of the **Wildlife (Protection) Act, 1972**.
- ▶ **Social:** In 2022, the **Tribal Council of Great Nicobar and Little Nicobar** withdrew its **NOC** for the project due to the administration’s lack of transparency and the hasty consent.
- ▶ **Health:** The **Shompen (habiting the proposed site)**, are highly vulnerable to **infectious diseases**.
- ▶ **Natural Disaster Vulnerability:** A&N are situated in a **high-risk seismic zone**.

BRIEF BACKGROUND



About Great Nicobar Island (GNI)

- ▶ **GNI**, with an area of **910 sq.km** is one of the largest islands of the **Andaman & Nicobar archipelago**.
 - ▷ The **Andaman and Nicobar Islands** are a group of **836 islands** on the **Bay of Bengal**.
- ▶ **Location:** Southernmost tip of the **Nicobar group of islands** (**520 km** from **Port Blair**).
 - ▷ **The Indira Point**, earlier known as **Pygmalion Point**, lies at the tip of the **GNI** and is the southernmost point of the country.
- ▶ **Headquarter:** **Campbell Bay**
- ▶ **Ecological Characteristics:**
 - ▷ **Tropical wet evergreen forests**, mountain ranges reaching a height of **642 m (Mt. Thullier)** and coastal plains.
 - ▷ **Fauna:** **Crab-eating Macaque, Nicobar Tree Shrew, Dugong, Nicobar Megapode, Serpent Eagle, salt water crocodile, marine turtles** etc.

Way forward (Suggested in Environmental Impact Assessment (EIA) report)

- ▶ Planning to recognize major landscape changes according to landscape planning concepts.
- ▶ Halting offshore construction activities during breeding season (Nov-Feb) of leather back turtles.
- ▶ Using Sodium vapor lights for lightings, as sea turtles are less affected by it.
- ▶ Implement Integrated Solid waste management system.
- ▶ Strict measures to ensure that none of the worker ever trespasses the Shompen area.
- ▶ Implement Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 for displaced people.

- ▶ **Flora:** Cyathea albosetacea (tree fern), Phalaenopsis speciosa(orchid), gymnosperms, bryophytes and lichens etc.
- ▶ **Ecological Landscape:** Great Nicobar Biosphere reserve, Campbell Bay National Park and Galathea National Park.
- ▶ GNI was included in the World Network of Biosphere Reserves as part of the Man and Biosphere Programme of UNESCO in 2013.

5.4.2. Renewable Energy (RE) in India



CONTEXT

According to Ministry of New and Renewable Energy, India’s renewable energy capacity grew by 165% in 10 years, from 76.38 Gigawatts (GW) in 2014 to 203.1 GW in 2024.

ANALYSIS



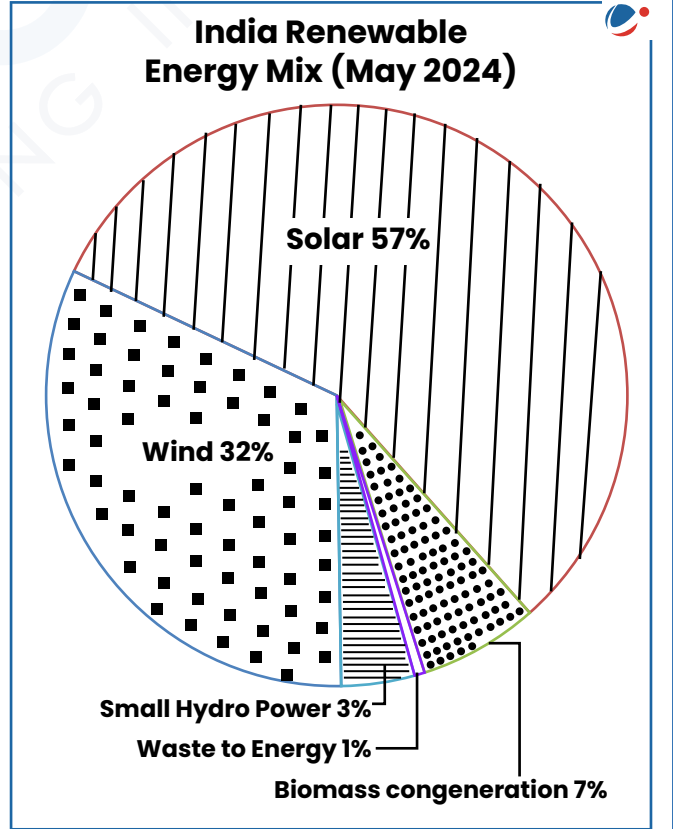
Challenges faced by RE Sector in India

- ▶ **High Cost:** Higher material and Natural Resource (primarily land) cost, diffused nature of RE requires elaborate installations.
- ▶ **Land Acquisition:** Identifying and converting potential RE land, obtaining clearances, and implementing land leases, etc.
- ▶ **Poor DISCOMS Performance:** Most DISCOMs are bound by Power Purchase Agreements, reducing their capacity to procure solar power.
- ▶ **Storage Concerns:** Intermittency and grid balancing challenges.
- ▶ **Environmental:** Collision of birds and bats with wind turbines especially during migration season.

Key Initiatives taken to promote Renewable Energy in India

- ▶ **FDI:** Up to 100% FDI is allowed under the automatic route.
- ▶ **PM Surya Ghar Muft Bijli Yojana:** Install rooftop solar plants in 1 crore households to be implemented until FY27.
- ▶ **Green Energy Corridor (GEC) projects**
- ▶ **Solar Parks Scheme:** Plug and play model, by facilitating necessary infrastructure along with all statutory clearances.
- ▶ **National Green Hydrogen Mission, 2023:** 5 million metric tonnes (MMT) of annual Green Hydrogen production capacity by 2030.

BRIEF BACKGROUND



About Renewable Energy

- ▶ Energy derived from natural sources that are replenished at a higher rate than they are consumed.

Significance of Renewable Energy



Reducing greenhouse gas emissions: By 2030, India will reduce the Carbon intensity of its economy by less than 45%.



Improving energy security: By relying on locally available resources, countries can reduce dependence on foreign energy sources.



Providing access to energy: It can help to reduce poverty and improve quality of life by providing accessible lighting, cooking, and heating.



Creating jobs: The growth of the solar power industry has created a large number of jobs in the production of solar panels.

Way forward

- ▶ **Increase Energy Storage Capacity:** Utilize systems like pump-storage hydroelectricity and battery storage to reduce variability.
- ▶ **Centre-State Coordination:** To identify exclusive land for renewable energy zones and ensure 'must run' (supply electricity to the grid under all conditions) status for renewable power.
- ▶ **Financing Innovations:** Streamline contracting, standardize contracts, and expand green bonds.
- ▶ **Upgrade Grid Technology:** Provide visibility of grid status and coordinate with neighboring balancing areas.
- ▶ **Optimize Land Use:** Promote use of wasteland, marginal land, and rooftops for solar projects to reduce competition with agricultural and forest land.

- ▶ **For Example:** Solar Energy, Wind Energy, Geothermal Energy, Hydro Power, Ocean Energy, Bio Energy.

Current Status of RE in India

- ▶ The share of RE in the total installed generation capacity in the country stands at **43.12%**.
- ▶ India ranks **fourth** globally in renewable energy capacity.
 - ▷ **4th in Wind Power (46.65 GW) capacity** and **5th in solar photovoltaic power (85.47 GW).**
- ▶ First time crossed **200 GW** capacity from non-fossil fuel sources.
 - ▷ It includes Solar power: **85.47 GW**, Large hydro power: **46.93 GW**, Wind power: **46.66 GW**, Biopower: **10.95 GW**, Small hydropower: **5.00 GW**, Waste to Energy: **0.60 GW**.
- ▶ **RE targets in India**
 - ▷ Non-fossil fuel energy capacity of **500 GW** by 2030.
 - ▷ **At least half** of its energy requirements via RE by 2030.



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5.4.3. River Linking Project



CONTEXT

Maharashtra government approved the Wainganga–Nalganga river linking project.

- It involves redirection of water from Wainganga (Gosikhurd) river in Godavari basin to the Nalganga (Purna Tapi) project in Buldhana district by constructing 426.52km of link canals.

ANALYSIS



Benefits of Interlinking of Rivers

- Benefits 35 million hectares of irrigation (25 million from surface waters and 10 million from groundwater use).
- Contributes to hydro power generation, estimated at 34000 Megawatts (NPP)
- Enhances water security as per NITI Aayog's Composite Water Management Index, Nearly 600 million people in India are facing high to extreme water stress.
- Reduces stress on road/rail transport with canals as navigation waterways.
- combat droughts and floods that caused economic loss over US\$ 4.2 billion in 2022.

Challenges of Interlinking of Rivers

- State Water Dispute:** Challenging to have consensus among states like the Cauvery water dispute between Tamil Nadu and Karnataka.
- Environmental Impact:** Could disrupt complex nature cycles, disrupting monsoon cycles and biodiversity.
 - Disrupting native fish species in Ken due to its diversion to Betwa.
- Loss of Forests:** The proposed Daudhan dam could put over 10% of Panna Tiger Reserve's tiger habitat under water.
- Social Cost:** The Polavaram Link project has affected around 1 lakh families, 80% of whom are tribals.
- Bilateral Challenges:** Himalayan rivers flow across multiple international boundaries.
- Economic Cost:** The Wainganga–Nalganga river linking project will cost around ₹87,342.86 crore.

Government Steps

- Task Force for Interlinking of River:** Constituted by Ministry of Water Resources in 2015.
- Special Committee for Interlinking of Rivers:** Constituted in 2014, which formed 3 sub-committees
 - Sub-Committee for Comprehensive Evaluation of various Studies/Reports available.
 - Sub-Committee for System Studies for identification of most appropriate alternative plan.
 - Sub-Committee for Restructuring of NWDA
- Group on Intra-state River Links:** Formed in 2015 to review key issues, define intra-state links, etc.
- National Bank for Agriculture and Rural Development (NABARD) Funding:** For the Accelerated Area Benefited Programme component of the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) through the Long Term Irrigation Fund.

Conclusion

The ILR project promises to revolutionize water distribution, boosting agriculture, employment, and overall development.

BRIEF BACKGROUND

About Interlinking of Rivers

- Connects surplus and deficient rivers in India.
- Background: National Perspective Plan (NPP) prepared by Ministry of Irrigation (now Ministry of Jal Shakti) in 1980.
- National Water Development Agency identified 30 links (16 peninsular and 14 Himalayan) for feasibility reports under NPP
- Union Cabinet approved Ken Betwa river link in 2021, marking the first interlinking of rivers project.

About Wainganga and Nalganga River

- Wainganga River, known as Pranhita (after its confluence with Wardha), originates from the Mahadeo Hills (Madhya Pradesh).
- Largest tributary of Godavari with its three principal branches, i.e., Penganga, Wardha, and Wainganga.
- Riparian states: Chattisgarh, Madhya Pradesh, Maharashtra, and Telangana.
- Nalganga are the main left bank tributaries of the river Purna.
 - Purna, a tributary of Tapi, joins from the left.

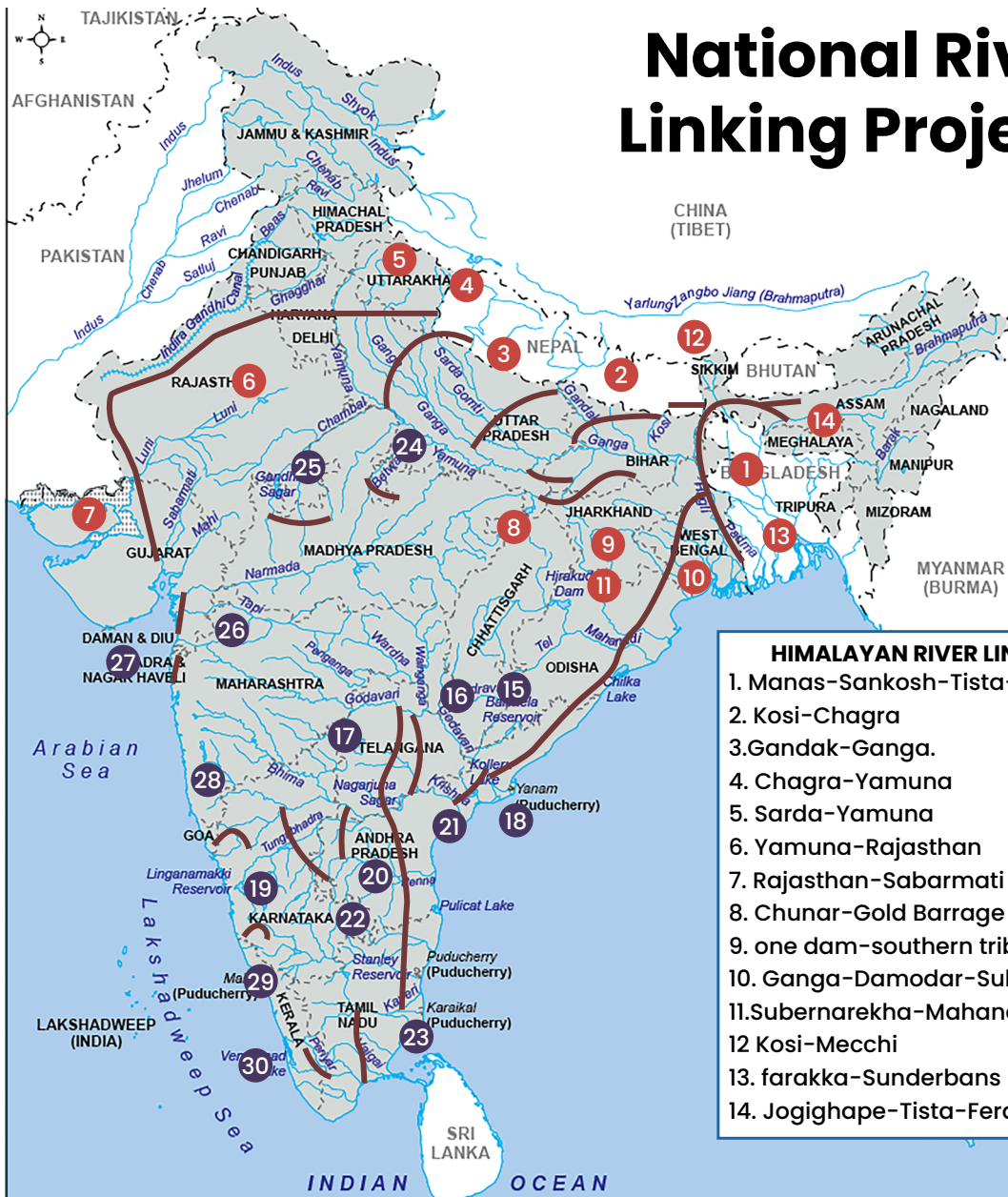


Judicial pronouncement in context of Interlinking of rivers

In Re: Networking of Rivers (2012): SC recognised the need for inter-linking of rivers in India and directed the Central Government to constitute a Special Committee for Inter-linking of Rivers which will be responsible for carrying out the inter-linking program.



National River Linking Projects



HIMALAYAN RIVER LINKING SYSTEM

1. Manas-Sankosh-Tista-Canga
2. Kosi-Chagra
3. Gandak-Ganga.
4. Chagra-Yamuna
5. Sarda-Yamuna
6. Yamuna-Rajasthan
7. Rajasthan-Sabarmati
8. Chunar-Gold Barrage
9. one dam-southern tributaries of Ganga
10. Ganga-Damodar-Subernarekha
11. Subernarekha-Mahanadi
12. Kosi-Mecchi
13. farakka-Sunderbans
14. Jogighape-Tista-Ferakk

PENINSULAR RIVER LINKING SYSTEM

- | | |
|--|--|
| <ol style="list-style-type: none"> 15. Mahanadi (Manibhadra)-Godavari (Dowlaiswaram) 16. Godavari Inchampalli-Krishna (Pulichintala) 17. Godavari (Inchampalli)-Krishna (Nagarjunasagar) 18. Godavari (Polavaram)-Krishna (Vijaya) 19. Krishna (Almatti)-Pens 20. Krishna Srisaillam)-Pennar 21. Krishna (Nagarjunasagar)-Pennar (Somasila) 22. Pennar (Somasila)-Cauvery (Grand | <ol style="list-style-type: none"> 23. Cauvery (Kattalai) Vaigai-Gundar 24. Ken-Betwa 25. Parbati-Kalisindh-Chambal 26. Par-Tapi Narmada 27. Damanganga-Pinjal 28. Bedti-Vanda 29. Netravati-Hemavati 30. Pamba-Achankovil-Valppar |
|--|--|

5.4.4. Offshore Wind Energy



CONTEXT

Cabinet recently approved **Viability Gap Funding (VGF)** scheme for implementation of **Offshore Wind Energy Projects**.

ANALYSIS



Features of the scheme

- ▶ **Nodal Ministry:** Ministry of New and Renewable Energy
- ▶ **Aim:** Installation and commissioning of **1 GW of offshore wind energy projects** (500 MW each off the coast of Gujarat and Tamil Nadu)
 - ▷ Upgradation of two ports to **meet logistics requirements for offshore wind energy projects.**
 - ◊ **Viability Gap Funding aims to support** economically justified infrastructure projects with marginal financial viability.
- ▶ **Significance:**
 - ▷ Realization of the aim of the **National Offshore Wind Energy Policy (2015).**
 - ▷ **Reduce the cost of power** from offshore wind projects by VGF and make them **viable for purchase by DISCOMs.**
 - ▷ **Annual reduction of 2.98 million ton of CO₂ equivalent emission** for a period of 25 years.

Other Government Initiatives

- ▶ **“National Offshore Wind Energy Policy – 2015”:** Offshore wind power development up to a seaward distance of 200 nautical miles from the baseline, i.e., up to the country's EEZ.
 - ▷ **Ministry of New & Renewable Energy (MNRE)** is the Nodal Ministry, and the **National Institute of Wind Energy (NIWE)** is the Nodal Agency.
- ▶ **Long-term target for off-shore wind power capacity additions is 30 GW by 2030**
- ▶ **Declaration of trajectory for Wind Renewable Purchase Obligation** up to the year 2030.

Way forward on promoting wind energy

- ▶ **Wind Resource Assessment** as wind is an intermittent and site-specific resource of energy.
- ▶ **Maritime Spatial Planning** with expert opinion and demonstration projects to assess the viability of projects.
- ▶ Discoms can **adopt FiT regulations** and make **offshore wind power procurement mandatory.**
 - ▷ **Feed-in tariff (FiT):** Price-driven policy where the government offers a guaranteed purchasing price for electricity produced from Renewable sources for fixed periods of time.

BRIEF BACKGROUND

About Offshore Wind Energy

- ▶ It refers to the use of **wind turbines** to generate **electricity in bodies of water** such as **oceans or large lakes.**
- ▶ Offshore wind energy projects of more than **57 GW** are installed in **18 different countries**, of which leading countries are **UK, China, Germany, Denmark and The Netherlands.**
- ▶ **Potential in India:** India's **gross wind power potential** of **695.50 GW** at 120 meter and **1163.9 GW** at 150 meter above ground level.
 - ▷ India stands **4th in wind power capacity** with **46.65 GW installed capacity.**

Offshore vs and Onshore wind energy projects

Offshore

Pros:

- Offshore turbines **generate 1MW more energy than onshore turbines.**
- **Stronger and uniform winds at sea.**
- **Fewer environmental impacts.**
- No issues related to Land acquisition

Cons:

- Lack **dependency and predictability.**
- **Tedious Transmission and distribution process.**
- **High maintenance costs** due to **corrosive effect of moisture.**

Onshore

Pros:

- Cheaper with **lower infrastructure and maintenance costs.**
- **Boosts local economy** due to land utilization.
- **Less voltage drops** between wind turbine and consumer.
- Proven **technology** and **reduced wear and tear**

Cons:

- **Discomfort to locals** due to noise pollution.
- **Reduced efficiency** due to unpredictable **wind speeds and direction.**
- **Land availability and landscape** considerations.

5.4.5. Underground Coal Gasification (UCG)



CONTEXT

Ministry of Coal has launched a pioneering Underground Coal Gasification pilot project in Jharkhand's Jamtara District.

ANALYSIS



Benefits of UCG

- ▶ **Access to unmineable coal:** Potential for trillions of tonnes of unmineable coal.
- ▶ **Reduced capital expenditure:** Elimination of expensive process units in coal mining and surface gasification.
- ▶ **Energy Density:** Needs less than 3% of land area for gas energy production.
- ▶ **Other benefits:** Reduced dependence on imports, no environmental impacts, Unique potential in recovering heating value from high ash coal.

Concerns associated with UCG

- ▶ **Induced Subsidence:** Potential deformation in coal and surrounding rocks.
- ▶ **Groundwater Contamination:** Potential migration of chemicals from coal seam to nearby groundwater sources.
- ▶ **Lack of Proven Technology:** Impacts syngas and downstream product costs and project viability.
- ▶ **Unsteady-State Process:** Parameters like cavity growth, coal properties, water influx, and ash layer build-up affect reactions.

Government Initiatives for Coal Gasification

- ▶ **National Coal Gasification Mission:** Aims to liquefy 100 MT of coal by 2030.
- ▶ **Scheme for Coal/Lignite Gasification Promotion:** Financial assistance scheme for PSUs and Private Sector, with an allocation of Rs. 8500 crores.
- ▶ **Joint Venture Agreement (JVA):** Government promotes projects using coal gasification, like CIL and BHEL's ammonium nitrate plant.

Conclusion

Indian government is promoting underground coal gasification to attract investments and foster innovation in the coal sector, aiming for sustainable development.

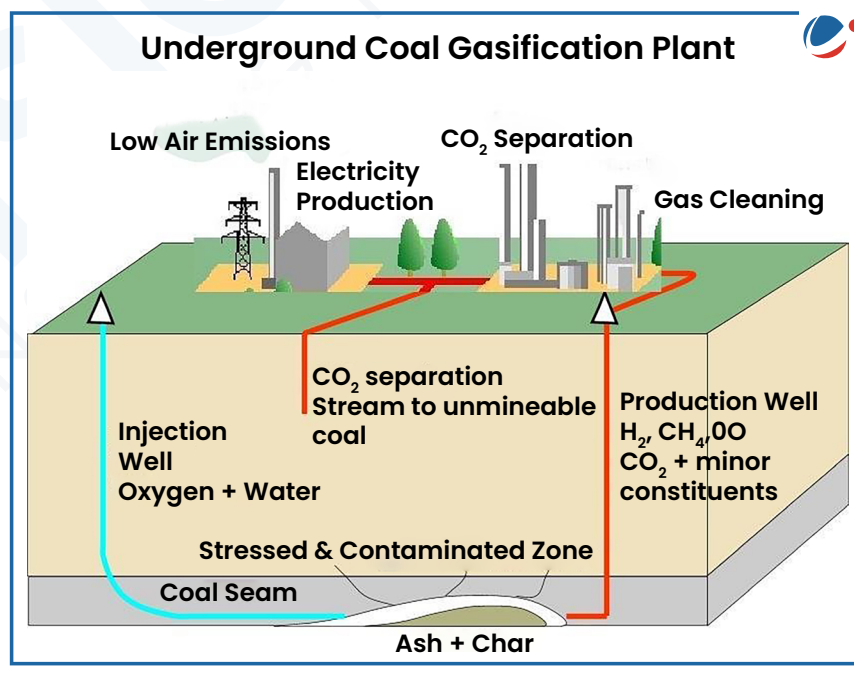
BRIEF BACKGROUND

About Underground Coal Gasification (UCG)

- ▶ An in-situ energy manufacturing process where coal is chemically converted (or gasified) into synthesis gas.
- ▶ Similar to surface coal gasification gas, it's a mixture of methane, CO₂, hydrogen, and CO.
- ▶ Initiated by injecting steam and air/oxygen into the coal seam, igniting it at temperatures over 1000°C.
- ▶ Resulting products vary based on coal type, temperature, pressure, and combustion method.

Products of UCG

- ▶ **Electricity:** Uses hot syngas to generate steam for electric turbines.
- ▶ **Chemical Feedstock:** Syngas can be used as chemical feedstock for methanol, hydrogen, ammonia, etc.
- ▶ **Hydrogen Production:** Coal, is a source of H₂, potential near-zero carbon energy carrier.



5.4.6. National Green Hydrogen Mission



CONTEXT

The Ministry of New and Renewable Energy (MNRE) released Scheme Guidelines for funding of testing facilities, infrastructure, and institutional support for development of Standards and Regulatory framework under the National Green Hydrogen Mission.

ANALYSIS

Key-features of the Guidelines

- ▶ **70% of capital cost** for Non-Government entities.
- ▶ **Budgetary Outlay:** Rs. 200 Crore till FY 2025-26.
- ▶ **Objective:** Identify gaps in testing facilities for Green Hydrogen components, technologies, and processes.
- ▶ **Implementation:** National Institute of Solar Energy (NISE)
- ▶ **Implementation Methodology:** SIA identifies test facilities, issues call for proposals, evaluates, recommends selected agencies, and issues Letter of Award.
- ▶ **Funding and Disbursement:** MNRE funds up to 100% of capital cost for Government entities.

Challenges in Green Hydrogen Adoption

- ▶ **Economic viability:** Current cost of green hydrogen production is too high (\$4.10 to \$7 per kg) against grey or brown hydrogen.
- ▶ **Hydrogen Storage:** Requires High-pressure tanks and cryogenic storage.
- ▶ **Skill Shortage:** Workforce demand expected to reach approximately 2.83 lakhs.
- ▶ **Resource Scarcity:** Green hydrogen production requires up to 9 litres of water per kilogram.
- ▶ **Lack of Global Standards:** Regulations for green hydrogen definitions, transportation, storage, safety, etc. vary across countries.

Initial steps taken under NGHM

- ▶ India's maiden project of blending Hydrogen in City Gas Distribution grid in Indore (MP) by GAIL Limited.
- ▶ **NTPC Limited** has initiated blending of Green Hydrogen up to 8% in PNG Network at **NTPC Surat** by NTPC.

BRIEF BACKGROUND

What is Green Hydrogen (GH2)?

- ▶ Hydrogen produced through **electrolysis**, splitting water molecules (H₂O) into hydrogen (H₂) and oxygen (O₂) using electricity from renewable sources like solar, wind.
- ▶ Another method of producing **GH2** is from gasification of biomass.
- ▶ **Applications of GH2:** Fuel Cell Electric Vehicles (FCEVs) Aviation and Maritime, Industry (Fertilizer Refinery, Steel, Transport (Road, Rail), Shipping, Power Generation.
 - ▶ **70% of the capital cost** (For Non-Government entities).

Types of Hydrogen						
Colour						
Type	Black/Brown Hydrogen	Grey Hydrogen	Blue Hydrogen	Turquoise Hydrogen	Pink Hydrogen	Green Hydrogen
Process	Coal Gasification	Methane Reformation	Coal Gasification & Methane Reformation with CCUS	Pyrolysis	Electrolysis	Electrolysis/Biomass Gasification
Source	Coal	Natural Gas	Fossil Fuel	Methane	Nuclear Energy	Renewable Energy

About National Green Hydrogen Mission (NGHM)

- ▶ **Launched** in 2023 with a budget of ₹ 19,744 crore.
- ▶ **Duration:** Phase I (2022-23 to 2025-26) and Phase II (2026-27 to 2029-30).
- ▶ **Objective:** Make India a global hub for Green Hydrogen.
- ▶ **Key components:** Demand creation, Strategic Interventions for Green Hydrogen Transition (SIGHT) program, pilot projects, development of Green Hydrogen Hubs, etc.

EXPECTED OUTCOMES OF THE MISSION BY 2030		
India's Green Hydrogen Production Capacity will Reach at Least 5 MMT Per Annum		Renewable Energy Capacity Addition of ~125 GW
Over ₹8 lakh crore in Total Investments	Create Over 6 lakh Full Time Jobs	50 MMT per annum of CO ₂ Emissions are Expected to be Averted

- Hydrogen based Fuel-Cell Electric Vehicle (FCEV) Buses in **Greater Noida (Uttar Pradesh) and Leh** by NTPC.
- Oil India Limited** has developed a **60-kW** capacity hydrogen fuel cell bus developed by Oil India Limited.

Way forward

- Reduce Cost:** India aims to reduce green hydrogen production costs to \$1 per kg by 2030.
- Incentives:** Like Production-Linked Incentive (PLI) schemes for green steel.
- Research and Development:** Invest \$1 billion in R&D by 2030.
- Initiate green hydrogen standards and a labelling program:** with AI/ML equipped certification.
- Create an inter-ministerial governance structure:** With an interdisciplinary Project Management Unit (PMU) for effective implementation.

5.4.7. UNESCO’s Greening Education Partnership



CONTEXT

UNESCO launched two new tools – new **Greening Curriculum Guidance (GCG)** and new **Green School Quality Standards (GSQS)** – under **Greening Education Partnership**.

ANALYSIS



About new tools

- New GCG:** Provides a common understanding of climate education and mainstreaming of environmental topics.
- New GSQS:** sets minimum requirements for creating a green school, promoting an action-oriented approach.

Relation between Climate Change and Education

- 50% of 100 countries** in recent UNESCO survey have no mention of climate change in their curriculum.
- Around 70%** of young people could not explain climate disruption.
- A higher level of education** ensures higher probability to engage in adaptation action.
- Increasing girls’ education can mitigate climate change indirectly through its **impact on demographic growth**.

BRIEF BACKGROUND

About Greening Education Partnership

- Global initiative with **80 member states**.
- Aims to equip learners with **knowledge, skills, values, attitudes, and actions to combat climate change**.
- Pillars of Green Education:** Green Schools, Greening Curriculum, and Greening Teacher Training and Education Systems.

Greening Education in National Education Policy 2020



Infuse climate literacy into mainstream subjects



Integrate environmental awareness for water and resource conservation in curricula



Inclusion of traditional ways of learning and sustainable practices



5.4.8. Soil Health



CONTEXT

UNESCO pledged to support its member states by establishing 'world soil health index' at International Conference on Soils, Morocco.

ANALYSIS



Reasons for Soil Degradation

- ▶ **Deforestation:** 30 Mha of land degradation in India during 2018-19 due to vegetation degradation (ISRO).
- ▶ **Salinization/Alkalization:** ~50% of arable land in Punjab damaged due to salinity.
- ▶ **Intensive cereal-based crop (wheat and rice) rotations:** due to Population growth, land shortage, etc.
- ▶ **Overgrazing:** Degradation of Banni grasslands in Gujarat.

Steps taken for Promoting Soil Health in India

- ▶ **Promotion of Organic Farming** through various programs like Rashtriya Krishi Vikas Yojana, Mission for Integrated Development of Horticulture, etc.
- ▶ **Soil Health cards** and Pradhan Mantri Krishi Sinchayee Yojana.
- ▶ **Increase in Forest Cover** through National Afforestation Programme and National Mission for a Green India.
 - ▷ In 2 years total forest and tree cover increased by 2261 square kilometre in India (ISFR, 2021)
- ▶ **National guidelines to prevent crop residue burning.**
- ▶ India's pledge under Bonn Challenge to restore 26 million hectares of degraded land by 2030.

Way Forward

- ▶ **Sustainable Agricultural Practices** like utilize diverse crop rotations.
- ▶ **Maximize soil cover** through protective vegetation.
- ▶ **Minimize disturbances by limiting tillage** and optimizing chemical input.
- ▶ **Implement integrated land use planning** considering diverse sectors.
- ▶ **Utilize precision farming** for water, nutrients, and pesticide optimization.
- ▶ **Promote community-based soil conservation.**

BRIEF BACKGROUND

About Soil Degradation

- ▶ It is the **physical, chemical, and biological decline** in soil quality causing loss of organic matter, declining fertility, etc.

Status of Soil Degradation

- ▶ **75% of soils degraded, impacting 3.2 billion people.**
 - ▷ With current trends to rise to 90% by 2050.
- ▶ **Total degraded land:** 96.4 million hectares (29.32% of total)

Soil Profile

O horizon Loose: and partly decayed organic matter

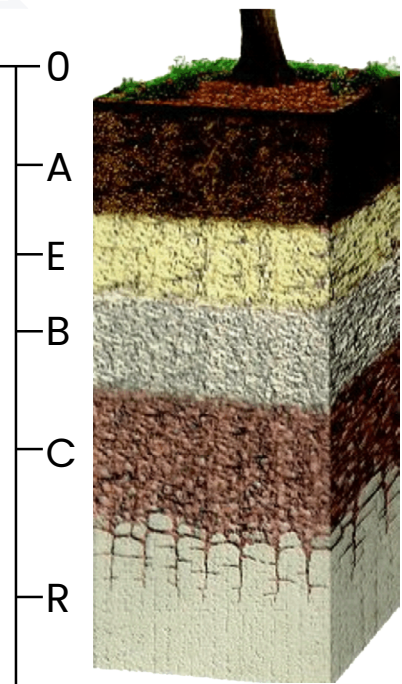
A horizon: Mineral matter mixed with some **humus**

E horizon: Light colored mineral particles. Zone of **eluviation and leaching**

B horizon: Accumulation of clay transported from above

C horizon: Partially altered parent material

Bedrock (R): Unweathered parent material



5.4.9. International Solar Alliance (ISA)



CONTEXT

Recently, **Paraguay** became the 100th country to join the International Solar Alliance (ISA).

ANALYSIS



Global Energy Transition Landscape

- ▶ Current trajectory **misaligns with Paris Agreement's 1.5°C limit.**
- ▶ Current projections suggest **only 4% reduction in emissions by 2050**, increasing global warming to 2.4°C.
- ▶ UNFCCC calls for **43% reduction in emissions to reach Paris 1.5°C limit.**
- ▶ IEA recommends **\$1.6 - \$2 trillion in solar investment by 2030 (IEA).**

Significance of ISA

- ▶ **Promotes energy equity and justice**, democratic access to solar energy, especially for **developing and low-income countries.**
- ▶ Encourages **global solar energy market** through large-scale deployment and collaborative development.
- ▶ **Facilitates standardized policies and procedures** to instill investor confidence.
- ▶ Provides a platform for **collaborative R&D** in developing countries.
- ▶ Aids India's foreign policy, leveraging its global leadership in sustainability. E.g., Mission LiFE.

Challenges for ISA

- ▶ **Coordination issues among member states** hindering effective implementation of initiatives. E.g. Issues like **membership rights**, importance to **procedure over pragmatism**, etc.
- ▶ **Geopolitical challenges:** **China dominates the global solar supply chain**, hindering **energy equity.**
- ▶ **Private sector participation:** may hinder **energy equity and justice.**
- ▶ **Implementation issues:** Issues of **land acquisition and potential ecological harm.** E.g. Of the 50 Solar Parks sanctioned, only 11 are completed till 2023.
- ▶ **Technical challenges** E.g. **Grid integration.**

Way Forward

- ▶ **Address challenges due to unequal access:** due to regional disparities in adoption costs etc.
- ▶ **Ensure equity in ensuring energy security:** **Decoupling of per capita energy consumption with energy intensity** with focus on **people-centric growth.**
- ▶ **Focus on Energy Equality:** **Inclusion of all stakeholders** with a **bottom-up approach.**

Conclusion

India's initiatives like ISA, Green Hydrogen Innovation Centre, and Global Bio-Fuel Alliance showcase its ability to shape global renewable energy discourses, rooted in the traditional Indian ethos of **Vasudhaiva Kutumbakam.**

BRIEF BACKGROUND

About ISA

- ▶ **Genesis:** Jointly announced by **India and France** in 2015 at the **UN Paris Climate Change Conference.**
- ▶ **Secretariat:** Gurugram, India.
- ▶ **Membership:** 120 signatory members
- ▶ **Eligibility:** All UN member states.

Initiatives taken by ISA

- ▶ **One Sun One World One Grid (OSOWOG):** connects different regional grids through a common grid.
- ▶ **Solar Technology Application Resource Centre (STAR C)**
- ▶ **Global Solar Facility:** to catalyze solar investments in across Africa.
- ▶ **Development of Large-Scale Solar Power Projects** under **Solar Park** Concept
- ▶ **ISA Solar Fellowship for Mid-Career Professionals**
- ▶ **International Solar Festival**

5.4.10. SOP for Green Tug Transition Program (GTTP) launched



CONTEXT

Union Minister of Port Shipping and Waterways launched the SOP for GTTP to drive the transition from conventional fuel-based harbour tugs to greener, more sustainable Green shipping.

ANALYSIS



Need of Green Shipping

- Shipping accounts for nearly 3% of world's CO₂ emissions.
- For India, GHG emissions from maritime (excluding military operations) contribute 1% of overall transport sector GHG emissions.

Challenges in Decarbonization of Shipping

- High dependency on fossil fuels: 99% of energy demand from international shipping is met by fossil fuels.
- Transition cost: LNG fuel requires extensive retrofits to existing infrastructure.

Other issues: Inadequate port facilities, inefficient fuel consumption, and difficulty in enforcing regulations in international waters.

BRIEF BACKGROUND

About GTTP

- Announced in 2023 under 'Panch Karma Sankalp' to phase out conventional fuel-based harbour tugs in Indian Major Ports replacing them with green tugs.
 - Tugs assist mega-ships in port entry/exit.
 - Panch Karma Sankalp includes 5 major announcements including 30% financial support for Green Shipping promotion, etc.

Key Initiatives



Global



Revised Greenhouse Gas (GHG) Strategy by IMO: sectoral target of **net-zero emissions by 2050**.



Green Voyage 2050: supports developing countries to reduce emissions from ships, in line with 2023 IMO GHG Strategy.

India



Sagarmala Programme: Port-led development with emphasis on green port initiatives etc.



Maritime India Vision 2030: Development of Green Ports & Green Shipping in India.



5.5. DISASTER MANAGEMENT

5.5.1. The Disaster Management (Amendment) Bill, 2024



CONTEXT

The Union Government introduced the Disaster Management (Amendment) Bill, 2024 in Lok Sabha to amend the Disaster Management Act, 2005.

- ▶ The Bill aims to mainstream disaster management in development plans, as per recommendations of 15th Finance Commission.

ANALYSIS



Key Findings

- ▶ **Preparation of DM plans:** By National Disaster Management Authority (NDMA) and State Disaster Management Authority (SDMA).
- ▶ **New Functions of NDMA and SDMA at their respective levels**
 - ▷ Taking **periodic stock** of disaster risks.
 - ▷ **Providing technical assistance** to authorities.
 - ▷ **Recommending guidelines** for minimum standards of relief.
 - ▷ **Preparing national and state disaster databases.**
- ▶ Provides for **creation of Disaster database at national and state levels.**
 - ▷ Includes disaster assessments, fund allocation details, expenditure, preparedness and mitigation plans, risk register etc.
- ▶ **Empowers National Disaster Management Authority (NDMA) and State Disaster Management Authority (SDMA)** to prepare the disaster plan at national and state level.
 - ▷ National plan to be **reviewed every 3 years** and updated at least once in every 5 years.
- ▶ Proposes **“Urban Disaster Management Authority”** for State capitals and large cities having Municipal Corporations.
- ▶ **Statutory recognition to existing bodies – National Crisis Management Committee (nodal body to deal with major disasters) and High-Level Committee (for approval of financial assistance).**
- ▶ Enables **state government to constitute State Disaster Response Force.**

Issues with Bill

- ▶ **Lack of Financial Devolution:** Difficulty for Urban Local Bodies to set up, equip, and run UDMA's due to financial constraints.
- ▶ **Centralization:** Excessive rulemaking power to Central government, potentially overlapping with legislative powers reserved for States.
- ▶ **Constitutionality Test:** Bill brought under Entry 23 (dealing with social security) of the Concurrent List of Seventh Schedule.
- ▶ **Restricted Definition of ‘Disaster’:** Does not expand list of notified disasters to include climate-induced disasters.

Conclusion

- ▶ Bill 2024 aims to **enhance disaster risk reduction and management by establishing Urban Disaster Management Authorities**, but success depends on **overcoming coordination, authority, and resource allocation challenges.**

BRIEF BACKGROUND

About Disaster Management Act, 2005

- ▶ Enacted post-2004 tsunami.
- ▶ Establishes **three-tier structure for disaster management:**
 - ▷ National Disaster Management Authority (NDMA),
 - ▷ State Disaster Management Authorities (SDMA's), and
 - ▷ District Disaster Management Authorities (DDMA's).
- ▶ Mandates **preparation of disaster management plans** at national, state, and district levels.
- ▶ Establishes **National Disaster Response Force (NDRF)** for specialized disaster response.
- ▶ Provides for creation of **National Disaster Response Fund (NDRF)** and **State Disaster Response Funds (SDRF)** for relief and response.
- ▶ Establishes **National Institute of Disaster Management (NIDM)** for disaster-related research, training, awareness, etc.

5.5.2. Technology in Disaster Management & Risk Reduction (DMRR)



CONTEXT

Recently, advancement in geospatial technology based on AI, Machine Learning (ML) and Internet of things (IoT) have been widely used in DMRR.

ANALYSIS



Challenges with Implementation

- ▶ **Technical limitations:** Lack of technical knowledge & technical infrastructure.
- ▶ **High cost:** of technologies like AI and drones.
- ▶ **Data requirements:** Issue of access, quality, timeliness and relevance for real time decision making.
- ▶ **Data responsibility and integrity:** Including Privacy and integrity can impact lives of people.
- ▶ **Gender Dimension:** Limited access to Women raises concerns like data collection and crisis management.

Way Forward

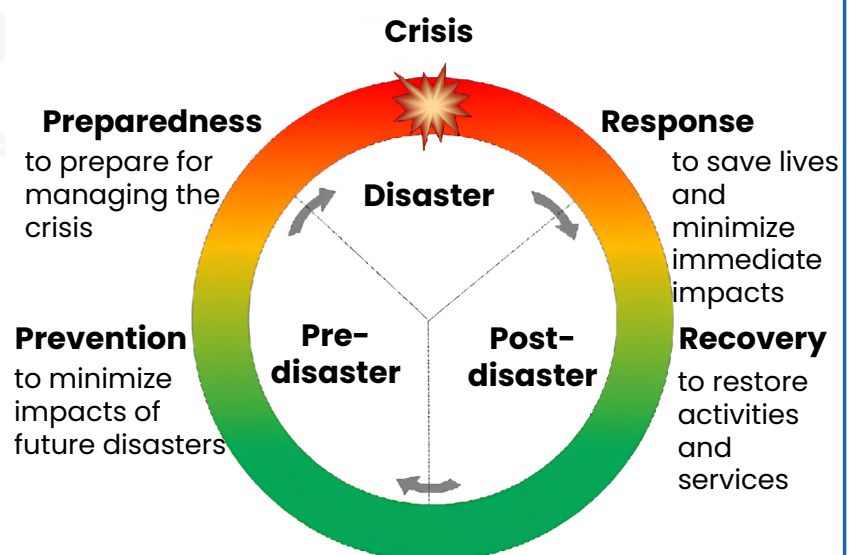
- ▶ **Private sector Participation:** To bridge the technology gap.
- ▶ **Bridging the Digital Divide and Enhancing Technical Capacity.**
- ▶ **Strengthening Community-Based Private Sector Networks** to support their communities more effectively during disasters.

BRIEF BACKGROUND

About Technology in Disaster Management

- ▶ **Prevention/Mitigation:** Improving predictions and reducing risks. E.g. Building Hazard Maps using AI.
- ▶ **Preparedness:** Creating and implementing emergency plans
 - ▶ **Odisha State Disaster Mitigation Authority (OSDMA)'s** web based platform called "SATARK" provides warning information for various hazards.
- ▶ **Response:** Technology coordinates and manages the response effort in emergencies.
 - ▶ **Disaster detection:** Using Social media platforms
 - ▶ **Emergency communication:** Using AI-powered chatbots
 - ▶ **Search and rescue:** Identifying people in critical need through satellite imagery or social media posts.
- ▶ **Recovery:** Rebuilding after a disaster, assessing damage, creating reconstruction plans, and coordinating relief efforts.
 - ▶ **Disaster relief logistic/resource allocation:** 3D printing ensures the functionality of critical systems.

Disaster management Cycle



5.5.3. Urban Development and Disaster Resilience



CONTEXT

Rising frequency of various disasters, especially in Monsoon, have brought to fore the unpreparedness of Indian cities to deal with disasters and seasonal extremities.

ANALYSIS



Vulnerability of Indian Cities

- ▶ **Population Centers:** Over 30% of India resides in cities, projected to grow to 40% by 2030.
- ▶ **Unplanned Urbanization:** Megacities like Chennai, Kolkata, and Mumbai reached their maximum environmental degradation threshold before 2014 (National Institute of Urban Affairs).
- ▶ **Climate Change:** E.g., Torrential rains in Shimla and Solan, Himachal Pradesh, triggered landslides, flash floods and cloudbursts, in 2023.
- ▶ **Existing Vulnerabilities:** Urban poverty, informality in urban employment, social inequality exist.

Challenges in building disaster resilience in Indian cities

- ▶ **Lack of planning:** 65% of Indian cities currently do not have a master plan (NITI Ayog).
- ▶ **Concretization:** Urban spaces covered with concrete and asphalt leading to Urban Heat Island.
- ▶ **Departmentalization in functioning:** Departments operating in silos focusing on resources such as water, transport, energy, etc. independently.
- ▶ **Lack of private funding:** Remained stagnant while the infrastructure funding gap has reached multi-trillion-dollar in recent years (Global Infrastructure Hub).
- ▶ **Other Challenges:** Governance issues leading to uncontrolled construction in disaster-prone zones; inadequate sewerage and drainage systems; poor health infrastructure; etc.

Way Forward

- ▶ **Governance:** DM should be devolved to municipalities, with empowered functionaries'.
- ▶ **Finance:** Creation of land banks (owned by the municipalities); Corporate Social Responsibility funding; Public-Private Partnerships (PPPs) etc.
- ▶ **Participatory Planning:** E.g., DM agencies work with communities to generate awareness in Japan.
- ▶ **Knowledge Management Networks:** Use of location-specific knowledge.
- ▶ **Other solutions:** Nature Based Developments; Greening of public and private spaces; shift to green mobility in public transport etc.



Read From Essential Material

Chapter 6: Natural Hazards and Disaster
(Geography Class XI Indian Geography)

BRIEF BACKGROUND











About Disaster Resilient City (As per National Disaster Management, a Disaster Resilient City):

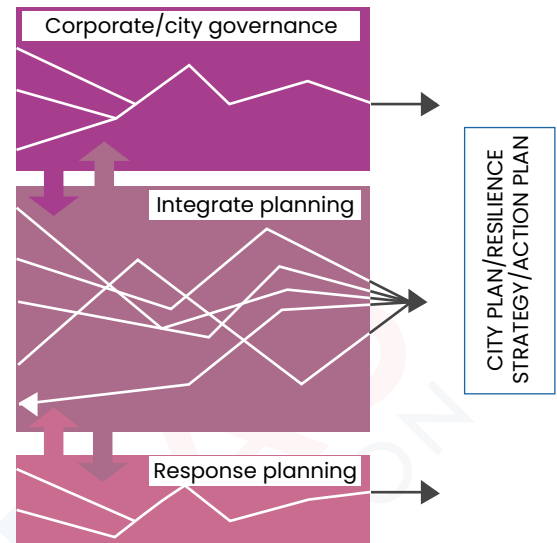
- ▶ Follows sensible building codes, avoids informal settlements in vulnerable areas such as flood plains or steep slopes.
- ▶ Has an inclusive, competent and accountable local government.
- ▶ Maintains shared, local information base on disaster losses, hazards, risks and vulnerability.
- ▶ Empowers people to participate and plan with local authorities, values local and indigenous knowledge.
- ▶ Takes steps to anticipate and mitigate the impact of disasters and is able to respond quickly to restore basic services.

Initiatives for urban disaster resilience

- ▶ **Governance:** Disaster Management Act, 2005; National Policy on Disaster Management 2009 ; National Disaster Management Plan (NDMP) 2016
- ▶ **Urban Local Government (ULG):** Responsible for setting and enforcing building codes, land use regulations, urban planning and zoning, etc.
- ▶ **Schemes:** Atal Mission for Rejuvenation and Urban Transformation (AMRUT); National Mission on Sustainable Habitat (NMSH) 2021-2030 etc.
- ▶ **Climate Smart Cities Assessment Framework; 'Ease of Living Index' (launched in 2018)**

UNISDR's Ten Essentials for Making Cities Resilient

-  Organise for **disaster resilience**
-  Identify, understand and use **current and future risk scenarios**
-  **Strengthen financial capacity** for resilience
-  Pursue resilient **urban development and design**
-  Safeguard **natural buffer** to enhance the protective functions offered by natural ecosystems
-  Strengthen institutional capacity for resilience
-  Understand and strengthen **societal capacity for resilience**
-  Increase **infrastructure resilience**
-  Ensure effective **disaster response**
-  Expedite **recovery and build better**



5.5.4. Landslides

CONTEXT

Hilly regions of Wayanad, Kerala experienced one of the worst landslides in recent history.

ANALYSIS

Key Highlights

- ▶ As per **India Landslide Susceptibility Map (ILSM)** around **13.17% of the country is susceptible to landslides and 4.75% is 'very highly susceptible'**.
- ▶ **Sikkim has 57.6% landslide-prone area**, while **Kerala, outside the Himalayas, has 14% of land in the 'very high susceptibility' category**.
- ▶ India accounts for about **8% of global fatalities due to landslides**.
- ▶ **>1-2% of GNP of economic losses in developing countries** due to landslides
- ▶ **>80% of landslide fatalities** occur in developing countries
- ▶ **>70% of Mumbai's landslide-prone areas are in informal settlements (WRI India)**.

Steps Taken for Mitigation of Landslides

- ▶ Establishment of the **National Landslide Forecasting Centre, Kolkata (NLFC)** by the Geological Survey of India.
 - ▷ **Bhusanket Web Portal and Bhooskhalan Mobile App** for quick dissemination of landslide forecasts.
- ▶ **National Disaster Management Authority's guidelines** on managing landslides and snow avalanches.
- ▶ **Landslide Risk Mitigation Scheme (LRMS)** to financially and technically support landslide-prone states.

BRIEF BACKGROUND

About Landslide

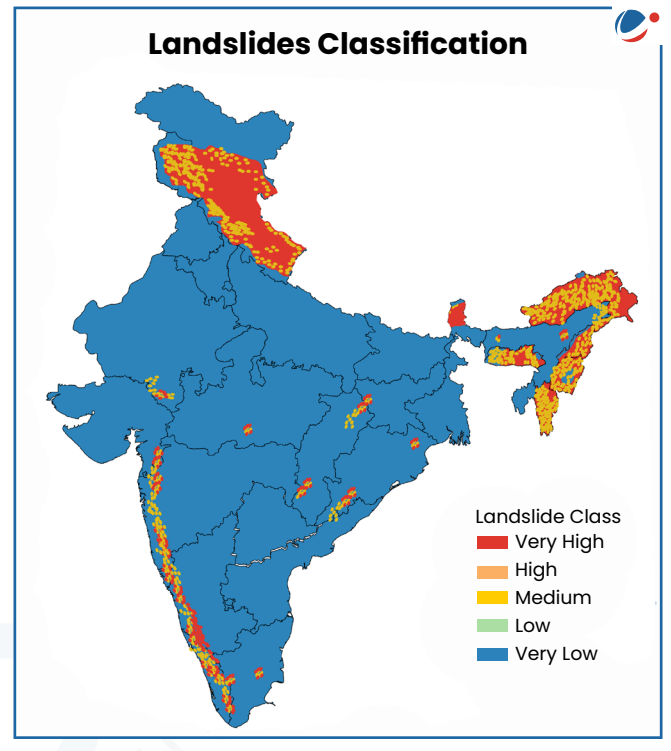
- ▶ Mass movement of material, like rock, earth or debris, down a slope, under gravity.
 - ▷ **Steep slopes:** Steep inclines make the mountains vulnerable to landslides from minimal water or seismic activity.
- ▶ **Causes of Landslide**
 - ▷ **Himalayan Region**
 - ◇ **Tectonically unstable formations:** Young, actively forming Himalayas are prone to landslide risk.
 - ◇ **Loose sediments:** Uncompacted geological materials.
 - ◇ **Hydropower projects:** concentrating large amounts of water in one area, increasing both humidity and pressure.
 - ◇ **Development activities** due to human interventions
 - ▷ **Western Ghats**
 - ◇ **Monsoon-induced landslides:** Heavy rainfall on the steep western side and cyclones on the eastern side oversaturates the soil.
 - ◇ **Geological stability with neo-tectonic activity:** Have some uplifted areas affected by recent tectonic movements influencing landslides

- ▶ **National Landslide Risk Management Strategy** addressing hazard mapping, monitoring, etc.
- ▶ **Sendai Framework for Disaster Risk Reduction 2015-2030.**

Way forward

- ▶ Accepting **ESA draft notification** for Western Ghats
- ▶ **Implementing Land use Zoning Regulations** based on local and site-specific landslide zonation maps.
- ▶ **Implementing slope modification regulations** like those of Aizawl Municipal Corporation.
- ▶ **Formulating state-specific landslide mitigation strategies** for each mountain state.
- ▶ **Regulating development activities, like engineering projects** in ecologically sensitive areas as suggested by Madhav Gadgil committee for Kerala.

- ◇ **Deforestation:** native trees hold top soil to bed rocks.
- ◇ **Anthropogenic activities**



Current Affairs Quarterly Revision (June to August 2024)



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5.6. GEOGRAPHY

5.6.1. Sea Level Rise



CONTEXT

'Sea level rise scenarios and inundation maps for selected Indian coastal cities' titled report published by a Bengaluru-based think tank, the Centre for Study of Science, Technology and Policy (CSTEP).

ANALYSIS



Key Observations

- ▶ **Maximum Seal Level Rise (1991–2020):** Mumbai (4.44 cm), Haldia (2.72 cm), Visakhapatnam (2.38 cm).
- ▶ **Submergence due to sea level rise by 2040:** Over 10% of land in Mumbai, Yanam, Thoothukudi, 5–10% in Panaji, Chennai, and 1–5% in Kochi, Mangaluru, Visakhapatnam, Haldia, Udupi, Paradip, Puri.

IPCC's Assessment

- ▶ **Global mean sea level rose by 0.20 (0.15–0.25) m between 1901 and 2018** as per the Intergovernmental Panel on Climate Change (IPCC)
 - ▷ IPCC projected a **global mean Sea Level Rise of 1.3 to 1.6 m by 2100** under the high-emission scenario.

Steps taken by Government of India

- ▶ **Central Water Commission's 2020 guidelines** provide preliminary design parameters for coastal protection works.
- ▶ **Coastal Vulnerability Index (CVI)** estimated by Indian National Centre for Ocean Information Services.
 - ▷ Estimates cumulative impact of **seven coastal parameters** i.e., shoreline change rate, sea-level change rate, coastal elevation, coastal slope, coastal geomorphology, significant wave height and tidal range.

- ▶ **National Disaster Response Fund (NDRF):** Allocated Rs. 1000 crore under **15th Finance Commission** for resettlement of displaced people.
- ▶ **Coastal Regulation Zone Notification, 2019** by Ministry of Environment, Forest and Climate Change.
- ▶ **Mangrove Initiative for Shoreline Habitats and Tangible Incomes (MISHTI)** to develop 540 sq. km of mangrove forests across 11 states and 2 union territories.
- ▶ **Shelterbelt plantations** to prevent coastal sea erosion. For example—at coastal district of **Ramanathapura**.

Adaptation Strategies for Sea-Level Rise

- ▶ **Build flood barriers:** Ecosystem-based coastal protection like oyster beds.
- ▶ **Man-made structures:** Seawalls made of concrete, masonry, or sheet piles.
- ▶ **Conduct sea-level rise and storm surge modelling:** Inform infrastructure placement and protection.
- ▶ **Develop floating cities:** Flood-proof cities in Maldives and South Korea.
- ▶ **Implement integrated coastal zone management:** Coastal community security, ecosystem protection, and sustainable development.
- ▶ **Advocate for a Climate Action Plan**

BRIEF BACKGROUND

Factors for Sea Level Rise (SLR)

- ▶ **Ocean thermal expansion:** Oceans absorb over 90% of greenhouse gas heat, increasing temperatures and water expansion.
- ▶ **Ice melting:** Greenland and Antarctica's ice sheets melt, contributing to SLR.

Impacts of SLR

- ▶ **Increased coastal erosion:** as per National Centre for Coastal Research (NCCR) around **32% of India's coastline** underwent sea erosion between 1990 and 2018.
- ▶ **Coastal inundation and flooding:** especially in low-lying coastal regions.
- ▶ **Freshwater salinization:** Due to subterranean aquifers and river deltas.
- ▶ **Coastal community displacement:** around 3.6 million people have been displaced in South Asia over the past decade. (Internal Displacement Monitoring Centre)
- ▶ **Coastal habitat loss:** like mangroves, salt marshes, and coral reefs.
- ▶ **Infrastructure vulnerability:** Risk of infrastructure disruption and damage.

5.6.3. Deepest Rock Sample from Earth's Mantle Obtained

CONTEXT

Scientists on the US vessel **JOIDES Resolution** have drilled around **1.2 Kms meters** below the **Atlantis Massif**, surpassing the previous depth of 201 meters.

ANALYSIS

Key highlights

- ▶ **Programme:** Done under **International Ocean Discovery Program** (India is a funding partner).
- ▶ **Location:** Done on the **southern side of the Atlantis Massif**, near the **Lost City Hydrothermal Field**.
- ▶ **Sample recovered:** The new rock sample contains **over 70% rock**.
- ▶ **Significance:**
 - ▷ helps understand
 - ◊ **upper mantle's composition**
 - ◊ **chemical reactions between these rock and seawater** over a range of temperatures
- ▶ These processes might have played a role in the **origin of life on Earth billions of years ago**.
 - ▷ Previous drilling was not deep enough to look for **deep dwelling organisms** such as **heat-loving bacteria**.



Read From Essential Material

Chapter 3: Interior of the Earth

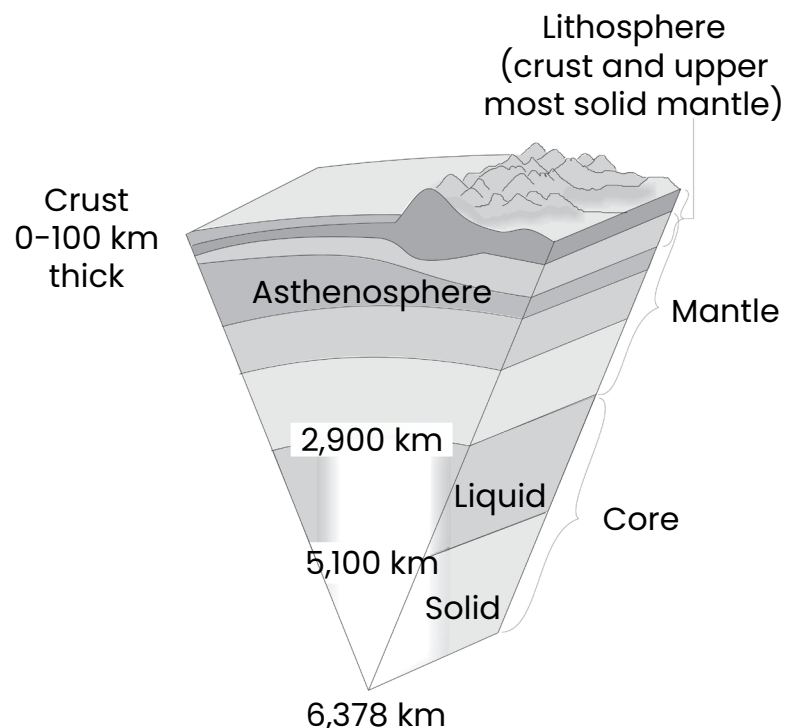
(Geography Class XI Indian Geography)

BRIEF BACKGROUND

About Mantle

- ▶ **Consists of silicate rock** makes up **over 80% of Earth's volume** is the **mid layer of the earth** (Refer infographic).
- ▶ **Usually inaccessible, except in areas of seafloor spreading**, where Earth's tectonic plates slowly move apart. E.g., **Atlantis Massif**.
 - ▷ **Atlantic Massif** is an **underwater mountain** near the **Mid-Atlantic Ridge**.

The interior of the Earth



5.6.4. Indian Ocean Structures Named Ashok, Chandragupt and Kalpataru



CONTEXT

Names of Ashok Seamount, Chandragupt Ridge and Kalpataru Ridge in the Indian Ocean have been approved by IHO and UNESCO's IOC.

ANALYSIS



About these structures

- ▶ **Location:** Along Southwest Indian Ridge.
- ▶ **Discovered by:** National Centre for Polar and Ocean Research.

Naming of Undersea Feature

- ▶ **Outside Territorial Sea:**
 - ▷ Individuals and agencies can propose names, following IHO's 2013 guidelines "Standardization of Undersea Feature Name".
 - ▷ Before naming of a feature, its character, extent, and position must be identified.
 - ▷ Proposals are reviewed by IHO Sub-Committee on Undersea Feature Names (SCUFN).
- ▶ **Within Territorial Sea:** National authorities naming features in their territorial sea should adhere to the same 2013 IHO guidelines.

BRIEF BACKGROUND

About IHO and IOC

- ▶ **International Hydrographic Organization (IHO)**
 - ▷ Established in 1921.
 - ▷ An intergovernmental body (India a member).
 - ▷ Enjoys observer status at the UN.
 - ▷ Recognized as competent international authority regarding hydrography and nautical charting.
- ▶ **Intergovernmental Oceanographic Commission (IOC)**
 - ▷ Established in 1961.
 - ▷ Promotes international cooperation in marine sciences.
- ▶ **GEBCO:** General Bathymetric Chart of the Oceans (GEBCO) is an IHO & IOC UNESCO joint project to collect bathymetric data and map the oceans

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5.7. CONCEPTS IN NEWS

5.7.1. Atmospheric Rivers

- ▶ Scientists warn that **intensification and increased frequency of atmospheric rivers** due to global warming is worsening extreme rainfall events and weather patterns
- ▶ **AR, or 'flying rivers', long, narrow regions** in the atmosphere that **transport most of water vapour** outside of tropics.
 - ▷ Average AR is about **2,000 km long, 500 km wide** and nearly **3 km deep**.
- ▶ Part of larger system of **extra tropical cyclones** that transport heat and moisture **from tropics toward the poles**.
 - ▷ Typically located within **low-level jet**, an area of strong winds in lower atmosphere.
- ▶ **Largest transport mechanisms of freshwater** on Earth, responsible for **90% of moisture transfer** from tropics to poles.
- ▶ Many ARs are weak systems; some **larger and strong ARs** can create **extreme rainfall and floods**, causing mudslides and catastrophic damage.
- ▶ **Climate Change and Atmospheric Rivers**
 - ▷ With temperature increase, **intensity of rain events rises** due to rise in **atmosphere's moisture retention capacity**.
 - ▷ By 2100, ARs are predicted to become **more intense** globally and will be much **broader and longer**.
 - ▷ Intensified ARs can produce **drought like conditions** by removing rainfall from rainfall-dependent regions.
- ▶ **Impact of ARs in India**
 - ▷ **7 of India's 10 severe floods in Monsoon seasons** between 1985–2020 linked to ARs.
 - ▷ **Rising fog and haze in Indo-Gangetic plains** has been linked to rising pollution and water vapor (due to intrusion of ARs).
- ▶ **Declining snow albedo in Hindukush–Karakoram–Himalayan Mountain Range** due to increased rainfall.

5.7.2. Aquatic Deoxygenation

- ▶ Experts called for "**Recognition of Aquatic Deoxygenation (AD) as a New Planetary Boundary**".
- ▶ **AD is overall decline in the oxygen content of oceanic and coastal waters** (happens when oxygen consumption is greater than oxygen replenishment).
- ▶ **Status of AD**
 - ▷ **Ocean: ~2% of oxygen** content in ocean has been **lost since 1960s**.
 - ◊ More than **500 low-oxygen sites** have been identified in **coastal waters**.
 - ▷ **Other water bodies: Lakes and reservoirs** have experienced oxygen losses of 5.5 and 18.6 % respectively since 1980.
- ▶ **Reasons underscoring AD**
 - ▷ **Global Warming caused by GHG:** Rise in temperatures decreases solubility of oxygen.
 - ◊ **Warm surface layers in ocean** prevent oxygen from mixing deeper into ocean (leading to **low oxygen level in deep sea waters**)
 - ▷ **Eutrophication:** Nutrient over enrichment from anthropogenic sources (e.g. agriculture) leads to **algal blooms** and increased **consumption of oxygen**.
- ▶ **Impact on Ecosystems**
 - ▷ **Occurrences of dead zones and ocean hypoxia effect**
 - ▷ **Habitat compression (reducing quality and quantity of suitable habitat) for fisheries** leads to reduced biomass, species loss.
 - ▷ **Affects** regulation and modulation of **Earth's climate** (due to production of GHGs by micro biotic processes).
 - ▷ **Changes in marine food web** due to increased risk of predation, etc. **E.g. Ocean acidification**.

Planetary boundaries

- ▶ **Framework to describe limits to impacts of human activities** on the Earth system.
 - ▷ Beyond these limits, environment **may not be able to self-regulate** anymore.
- ▶ **Includes nine recognized planetary boundaries** such as climate change, ocean acidification, land use change, biodiversity loss etc.

5.7.3. Megafauna

- ▮ Archaeologists discovered world's oldest known 41,000-year-old ostrich nest in Andhra Pradesh
- ▮ Could provide key information about the **extinction of megafauna** in the Indian subcontinent.
- ▮ The term **megafauna** describe animals above a certain weight threshold (generally above 50 kg).
- ▮ May be classified based on their dietary type as **megaherbivores** (plant-eaters), **megacarnivores** (meat-eaters), and **megaomnivores** (who eat both plants and meat).
- ▮ **Anthropogenic pressures** on megafauna since the Late Pleistocene have resulted in **dramatic losses**, especially in the **megaherbivores** and **megacarnivores**.
- ▮ Some **extinct megafaunal species** include woolly mammoths, sabre-toothed tigers, giant sloths etc.

5.7.4. Collective Intelligence (CI)

- ▮ Recently, 'Untapped Collective Intelligence for Climate Action report' was released **by the UNDP**.
 - ▷ The report explores the potential of **Collective Intelligence (CI) initiatives** in climate adaptation and mitigation.
- ▮ **About CI**
 - ▷ It is the **enhanced capacity** created when **people work together**, often **with the help of technology**, to mobilize a **wider range of information, ideas, and insights**.
 - ▷ **Example-** Using Artificial Intelligence, crowdsourcing, and remote sensing to tackle climate change, poverty etc.
 - ▷ CI emerges when these **contributions are combined to become more than the sum** of their parts.

5.7.5 Heat Dome

- ▮ Cities in southern and western USA are facing heat waves due to a weather phenomenon known as **Heat Dome**.
- ▮ It is a **weather phenomenon** where a **ridge of high pressure gets stuck in the atmosphere**.
- ▮ **Traps hot air that expands vertically** into the atmosphere and **high pressure** pushes it toward the ground.
- ▮ Winds usually move from high pressure but with the dome stretching far into the atmosphere, these **weather systems become almost stationary**.

5.7.6. Gross Environment Product Index (GEPI)

- ▮ Uttarakhand has **become the first Indian state to launch** a Gross Environment Product Index.
- ▮ It is a **novel method to evaluate ecological development** caused by human interventions.
- ▮ **Four pillars of GEPI:** Air, soil, tree and water.
- ▮ **Formula:** $GEP\ index = (Air- GEP\ index + Water- GEP\ index + Soil- GEP\ index + Forest- GEP\ index)$
- ▮ **Significance:**
 - ▷ Assess the **impact of anthropological pressure** on our ecosystem and natural resources.
 - ▷ Calculates what we **put back into the environment**.
 - ▷ **Quantifies contributions** of natural ecosystems to the economy and overall welfare.

5.7.7. Dual Tower Solar Thermal Plant

- ▮ China has unveiled the **world's first dual-tower solar thermal power plant (TPP)**, which **boosts energy efficiency by 24%**.
- ▮ **Features of the Solar TPP**
 - ▷ **Tracking of Sunlight:** The plant features **two 200-meter tall towers**, each surrounded by **thousands of mirrors** which automatically **track the sun's movement** and achieve **94% reflection efficiency**.
 - ▷ **Storage of excess heat:** Utilises **molten salt storage as thermal battery**, allowing it to store excess heat collected during the day for continuous power generation at night.

5.7.8. Parametric Insurance

- ▶ Nagaland became the **first Indian state** to adopt the **Disaster Risk Transfer Parametric Insurance Solution (DRTPS)** after an MoU with SBI General Insurance.
- ▶ **Parametric Insurance** is a **type of insurance** that covers **probability/likelihood of a loss-causing event** happening (E.g. **earthquake**) instead of compensating for actual loss incurred from event.
 - ◊ An agreement that **offers a pre-specified payment** upon occurrence of a **covered event meeting or exceeding a pre-defined intensity threshold measured by an objective value/parameter** (hence name 'parametric insurance').
 - ▶ **Covered events:** Could be earthquakes, tropical cyclones, or floods where parameter or index is magnitude, wind speed or water depth respectively.
- ▶ **Difference between Traditional insurance and Parametric insurance**
 - ▶ **Traditional insurance:** Used to protect owned physical property.
 - ◊ After an event, **payments are based on actual loss**, subject to terms and conditions.
 - ▶ **Parametric insurance:** Payment is **tied to loss-causing event occurring**, and not the actual loss sustained, resulting much broader coverage.
 - ◊ **Used to increase the amount of coverage** available to certain natural perils (i.e., named windstorm) that are of primary concern to the insured.
- ▶ **Advantages of parametric Insurance**
 - ▶ **Speed of payout:** Prevent policyholders from using savings or credit to pay their losses
 - ▶ **Sense of certainty:** The customer knows the precise amount to be received.
 - ▶ **Transparency:** As the trigger data is equally available to both insurer and policyholder.

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5.8. REPORTS IN NEWS

<p>State and Trends of Carbon Pricing 2024 Report</p>	<p>Released By: World Bank</p> <p>Key Highlights</p> <ul style="list-style-type: none"> ▶ Carbon Pricing (CP) revenues exceeded USD 100 billion for the first time in 2023. ▶ 75 global CP instruments are in operation, covering 24% of Global Greenhouse Gas emissions (GHGs). <ul style="list-style-type: none"> ▷ Brazil, India, and Türkiye have made notable progress towards CP implementation. ▶ China and India are largest host countries in terms of its issuances. ▶ About CP: Instrument that attaches a cost to greenhouse gas emissions, typically through CO₂ pricing mechanisms. 	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">Steps Taken for Carbon pricing (CP)</p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p style="text-align: center;">India</p> <p style="text-align: center;">In 2023, India introduced the Carbon Credit Trading Scheme (CCTS).</p> <p style="text-align: center;">Perform, Achieve and Trade (PAT) Scheme implemented by Bureau of Energy Efficiency (BEE).</p> <p style="text-align: center; border: 1px solid black; padding: 5px;">Clean Energy Cess of Rs.400/- per tonne of coal.</p> </div> <div style="width: 45%;"> <p style="text-align: center;">Global</p> <p style="text-align: center;">Kyoto Protocol (1997) with three market-based mechanisms: International emissions trading (IET), the clean development mechanism (CDM) and joint implementation (JI).</p> <p style="text-align: center;">Article 6 of the Paris Agreement allows countries to transfer carbon credits earned from the reduction of Greenhouse Gas emissions.</p> </div> </div> </div>
<p>Navigating New Horizons, A Foresight Report</p>	<ul style="list-style-type: none"> ▶ Released By: UNEP (United Nations Environment Programme) ▶ It identifies various critical global shifts, accelerating the triple planetary crisis of pollution, biodiversity loss and climate change. ▶ Also highlights that Global polycrisis, i.e, multiple shocks like wars, extreme weather, pandemics etc. which are interwoven and are a result of globalization. 	
<p>State of the World's Forest, 2024 Report</p>	<ul style="list-style-type: none"> ▶ Released By: Food and Agriculture Organization (FAO) <ul style="list-style-type: none"> ▷ Theme: "Accelerating Forest solutions through innovation". ▶ Key Highlights <ul style="list-style-type: none"> ▷ Deforestation Rate declined to 10.2 million hectare (ha) per year in 2015–2020 from 15.8 million in 1990–2000. ▷ India ranked 3rd for average annual net gain in forest area from 2010– 2020. ▷ Non-Timber Forest Products support livelihoods of about 275 million people in India. 	
<p>The Impact of Climate Change on Education Report</p>	<ul style="list-style-type: none"> ▶ Released By: World Bank <ul style="list-style-type: none"> ▷ Highlights that climate change intensifies extreme weather, disrupts schooling and causes learning losses and dropouts. ▶ Impact of Climate Change on Education <ul style="list-style-type: none"> ▷ Education Remains Overlooked in Climate Policy Agenda: In 2020, education accounted for less than 1.3% of climate assistance and was mentioned in less than one in three Nationally Determined Contribution plans. ▷ School Closures: Over 2005–2024, schools were closed in at least 75% of extreme weather events, impacting 5 million people or more. ▷ Rising temperature negatively impact learning outcomes: Even an increase of 1°C in outdoor temperature on exam days can result in a substantial decline in test scores. <ul style="list-style-type: none"> ◇ E.g. Students in hottest 10% of Brazilian municipalities, lost about 1% of learning per year due to increasing heat exposure. ▷ Increasing food insecurity and economic fragility jeopardize school enrollment: Climate risk would risk up to 170 million people with hunger by 2080. ▷ Disproportionate harm: Prevents at least 4 million girls in low- and lower-middle-income countries from completing their education. 	

<p>CITES Rosewoods: The Global Picture</p>	<ul style="list-style-type: none"> ▶ Released By: CITES ▶ Details CITES-listed rosewood species' characteristics, roles, regeneration rates, and threats. ▶ Would help parties make informed non-detriment findings (NDFs). <ul style="list-style-type: none"> ▷ Mandatory scientific analysis under CITES to ensure that exporting a specified quantity of specimens of Appendix I and II -listed species will not affect their long-term survival in the wild. ▶ About Rosewood <ul style="list-style-type: none"> ▷ Also called as "palisander" encompasses a wide range of tropical hardwoods in the Fabaceae (Leguminosae) family.
<p>Impact of Climate Change on Marginal Farmers' Report</p>	<ul style="list-style-type: none"> ▶ Released By: Forum of Enterprises for Equitable Development (FEED) (dedicated to advocating for marginal farmers). ▶ Key highlights <ul style="list-style-type: none"> ▷ Over 1/3rd of marginal farmers had to cope with extreme weather events at least twice in five years. ▷ Climate change may reduce annual agricultural income by 15-18% and by 20-25% in unirrigated areas (Economic Survey of 2017- 18). ▷ Over 86% of farmers altered their occupations. Alternative livelihood includes temporal migration, seeking work under MGNREGA, etc. ▷ Hurdles in adoption of CRA (Climate Resilient Agriculture) practices like High up-front cost, limited knowledge about options, small land holdings and lack of physical resources, etc. <div style="border: 1px solid #007bff; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Categories of Farmers based on Landholding</p> <ul style="list-style-type: none"> <li style="margin-bottom: 10px;"> Marginal: Less than 1 hectare <li style="margin-bottom: 10px;"> Small: 1-2hectare <li style="margin-bottom: 10px;"> Semi- Medium: 2-4 hectare <li style="margin-bottom: 10px;"> Medium: 4-10 hectare <li style="margin-bottom: 10px;"> Large: 10 hectare and above </div>
<p>Sustainable Development Report 2024</p>	<ul style="list-style-type: none"> ▶ Released by: UN Sustainable Development Solutions (SDSN) since 2016. <ul style="list-style-type: none"> ▷ Reviews progress made each year on Sustainable Development Goals (SDGs) by 193 UN Member States. ▷ Established in 2012, SDSN works under the UN Secretary-General and promotes integrated approaches to implement SDGs and Paris Agreement. ▶ Key Highlights: <ul style="list-style-type: none"> ▷ On average, only 16% of the SDG targets are on track <ul style="list-style-type: none"> ◇ SDG2 (Zero Hunger), SDG11 (Sustainable Cities and Communities), SDG 14 (Life Below Water), SDG 15 (Life on Land) and SDG 16 (Peace, Justice and Strong Institutions) are particularly off track. ▷ SDG progress varies significantly across countries with Nordic countries leading, BRICS countries making significant progress and Poor & Vulnerable countries lagging far behind. <ul style="list-style-type: none"> ◇ Finland is ranked first, followed by Sweden and Denmark. ◇ India is ranked 109th (out of 166) with on track performance in Poverty reduction and Quality Education targets while decreasing progress in Sustainable Cities and Climate Action targets. ▷ New Index of Support to UN-based Multilateralism (UN-Mi): Ranks countries based on their engagement with the UN System. <ul style="list-style-type: none"> ◇ Barbados ranks highest, India at 139th place while USA ranks last. ▶ NOTE: The SDG Report 2024 also details the significant challenges the world is facing in making substantial strides towards achieving the SDGs. It has been released by the United Nations Statistics Division (UNSD).

State of the Ocean Report (2024)

- ▶ Released by: UNESCO
- ▶ Based on **UN Decade of Ocean Science for Sustainable Development (2021-2023)**, offers insights into **ocean-related scientific activities** describing the **current and future state of the ocean**.
- ▶ **Key findings**
 - ▷ Ocean is warming at **twice the rate** it was twenty years ago.
 - ◊ Ocean temperatures have increased by an average of 1.45°C, with hotspots **above 2°C in the Mediterranean, Tropical Atlantic and Southern Oceans**.
 - ▷ **Rising Sea level rise:** Due to **ice mass loss** from the Greenland and West Antarctica ice sheets.
 - ▷ **Acidification:** Ocean absorbs around 25% of annual anthropogenic CO₂.
 - ◊ ocean acidification would **increase by more than 100% by the end of the century**
 - ▷ **Deoxygenation:** Resulting in worsening hypoxia.
 - ▷ **Coastal blue carbon ecosystems:** Mangroves, seagrasses and tidal marshes (important store of Carbon) have seen a loss of **20–35% since 1970**.



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5.9. TEST YOUR LEARNING

MCQs

Q1. Consider the following statements regarding the High Seas Treaty:

1. It is implemented by the Ministry of Environment, Forests, and Climate Change.
2. It is applicable to Areas beyond National Jurisdiction.
3. It falls under the International Convention for the Prevention of Pollution from Ships (MARPOL)

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q2. Consider the following pairs:

Ramsar Sites	State
1. Tawa Reservoir	Rajasthan
2. Nanjarayan Bird Sanctuary	Tamil Nadu
3. Nagi and Nakti bird sanctuaries	Bihar

How many of the pairs given above are correctly matched?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Q3. The State of Oceans Report is published by:

- a) United Nations Environment Programme (UNEP)
- b) Food and Agriculture Organisation (FAO)
- c) International Maritime Organisation (IMO)
- d) United Nations Educational, Scientific and Cultural Organization (UNESCO)

Q4. Consider the following statements regarding Green Tug Programme (GTP):

1. It is launched by Ministry of Ports and Shipping to foster Green Shipping.
2. It was announced under the "Panch Karma Sankalp" replacing fuel based tugs with green tugs.

Which of the statements given above is/are correct?

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

Q5. Consider the following statements regarding Atmospheric Rivers (ARs):

1. They transport water vapors outside of tropics.
2. They are part of larger system of extra tropical cyclones.

Which of the statements given above are correct?

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

Questions

Q1. What are advantages of Offshore Wind Energy generation over Onshore? Highlighting some government initiatives, suggest ways to propel offshore wind energy in India. (250 Words)

Q2. Citing examples discuss the role of technology in different stages of disaster management. (150 Words)

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SOCIAL ISSUES



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6.1. WOMEN

6.1.1. Global Gender Gap Report 2024



CONTEXT

Global Gender Gap Report 2024 released by the **World Economic Forum (WEF)** is based on the **Global Gender Gap Index (GGGI)** which annually benchmarks the current state and evolution of gender parity based on **14 indicators across four key dimensions**.

ANALYSIS



Key Findings

Global

- ▶ Among 146 countries, **Iceland, Finland, Norway, New Zealand, and Sweden** are the **top five** countries.
- ▶ The share of **women in parliamentary positions** has shown an **almost uninterrupted positive trajectory since 2006**.
- ▶ At the current rate of progress, it will take **134 years to reach full parity**.
- ▶ Women constitute **28.2% of the STEM workforce and 47.3% of the non-STEM workforce**.

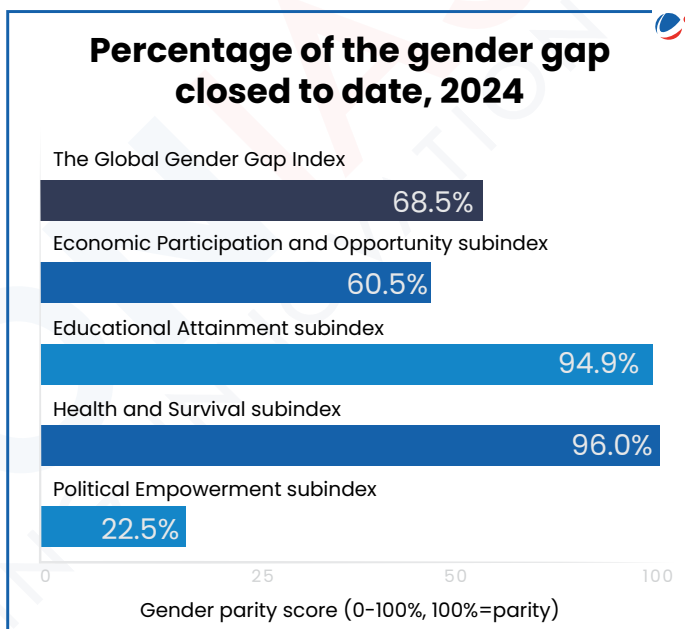
India

- ▶ Overall, India was ranked **129th** (ranked 127 in 2023), and 5th in South Asia **after Bangladesh, Nepal, Sri Lanka and Bhutan**.
- ▶ **Small decline in Educational Attainment and Political Empowerment** while Economic Participation and Opportunity slightly improved.
- ▶ Share of women is high in **primary, secondary and tertiary education enrolments**.

Key Recommendations

- ▶ Achieving **gender parity by 2030** would require a collective **investment of \$360 billion per year**.
- ▶ **Targeted interventions** and ensuring equitable access to emerging technological competencies are needed.
- ▶ **Businesses** need to have effective **diversity, equity and inclusion policies and upskilling**.

NOTE: Gender Inequality Index (GII), released by UNDP, is also a composite metric of gender inequality based on three dimensions: reproductive health, empowerment and the labour market.



6.1.2. Sport and Gender Equality Game Plan



CONTEXT

UNESCO released 'Sports and Gender Equality Game Plan' just before the Olympic Games, which highlights **persistent gender gap in sports** and provides **guidance for gender-transformative sport policies** and programmes.



ANALYSIS

Key Observations

- ▶ **Sexual Abuse:** 21% of women athletes (and 11% of men) reported experiencing at least one form of sexual abuse as a child in sport.
- ▶ **High Dropout in Sports:** 49% of girls drop out of sports during adolescence – 6 times higher compared to boys.
 - ▷ **Factors for high attrition** include lack of women role models, safety concerns, lack of confidence and negative body image.
- ▶ **Pay gap in professional sports:** It is evident from absence of women in the list of 50 highest paid athletes in the world.
- ▶ **Lack of women's leadership:** In 2023, only 30% of the world's largest sports federations were chaired by women.

Four Actions Suggested by the Game Plan

- ▶ **Sports as a means for attitudinal change** through media coverage to tackle root of gender inequalities.
- ▶ **Champion gender equality** in sport leadership, governance and decision-making.
- ▶ **Develop capacity and soft and hard infrastructure** through gender-responsive budgeting and closing funding gaps.
- ▶ **Commit to ending all forms of gender-based violence in sport.**

India's Initiatives to Promote Women in Sports

- ▶ **Khelo India Scheme (Sports for Women component)**
- ▶ **ASMITA (Achieving Sports Milestone by Inspiring Women through Action) Portal** giving identity to women athletes.
- ▶ **Khelo India Dus ka Dum Sports competition** conducted on International Women's Day 2023.



6.2. CHILDREN

6.2.1. UNICEF releases “Child Nutrition Report, 2024”



CONTEXT

UNICEF released the Child Nutrition Report, 2024 which reveals severe Child Food Poverty (CFP), globally.

ANALYSIS



Key Findings

- ▶ **Prevalence:** ~27% children live in severe CFP, globally.
 - ▷ **In India, 40% of children** suffer from severe CFP (2nd highest burden in South Asia after Afghanistan).
- ▶ **Poor Diet:** Unhealthy foods are becoming entrenched in children's diets replacing nutrient-rich foods.
- ▶ **Income and CFP:** Severe CFP affects children in both poor and non-poor households, indicating income is not the only driving factor.
- ▶ **Causes:** Growing inequities, conflict and climate crises, combined with rising food prices, the overabundance of unhealthy foods, harmful food marketing strategies and poor child-feeding practices.

Key Recommendations

- ▶ **Strengthen data systems** to assess the severity of CFP.
- ▶ **Transform food systems** to make nutritious foods accessible, affordable and desirable for feeding young children.
- ▶ **Leverage health systems** to deliver essential nutrition services, including counselling on child feeding.

India's initiative

- ▶ **Saksham Anganwadi and Poshan 2.0** focuses on maternal nutrition, infant and young child feeding norms, etc.
- ▶ **Introducing millets in Mid-Day Meal Scheme** (renamed as 'PM Poshan' scheme).









BRIEF BACKGROUND

- ▶ CFP is defined as children's inability to access and consume a nutritious and diverse diet in early childhood (first five years of life), globally.

Measurement of CFP

- ▶ To meet the minimum dietary diversity for healthy growth and development, children need to consume foods from at least five out of the eight defined groups.

Measurements of Child Food Poverty

If children are fed :	0-2 food groups/day they are living in severe child food poverty	3-4 food groups/day they are living in moderate child food poverty	5 or more food groups/day they are not living in child food poverty
			
Breastmilk	Grains, roots, tubers and plantains	Pulses, nuts and seeds	Dairy products
			
Flesh foods (meat, poultry and fish)	Eggs	Vitamin A-rich fruits and vegetables	Other fruits and vegetables

6.2.2. Child Labour



CONTEXT

Twenty fifth anniversary of International Labour Organisation (ILO) **convention No. 182** was observed recently.

- ▶ **Convention No. 182** deals with “**worst forms of child labour**” and is the **first ILO Convention** to be universally ratified. India ratified it in 2017 along with **convention No. 138** which deals with **minimum age of employment**.

ANALYSIS



Key Observations

▶ Prevalence of Child Labour in India

- ▷ As per census 2011, **10.1 million children** (3.9% of total child population) are working, either as ‘main worker’ or as ‘marginal worker’.
- ▷ **Uttar Pradesh, Bihar, Rajasthan, Maharashtra, and Madhya Pradesh** constitute nearly 55% of total working children (aged 5-14 years) in India.
- ▷ **Child labour mostly persists in** agriculture, household industries, roadside dhabas, etc.

▶ Reasons for Child Labour in India

- ▷ **Poverty forces families** to rely on their children’s labour to make their ends meet.
- ▷ **Lack of quality education** increases the likelihood of children entering the workforce prematurely.
- ▷ **Disasters, conflicts and mass migration** lead to economic instability and disrupt families exposing children to labour.
- ▷ **Demand for Cheap Labour** in various industries such as agriculture, domestic work.
- ▷ **Lack of stringent legislation** and enforcement of laws.

▶ Government measures to prevent child labour

▷ Constitutional Provisions

- ◊ **Article 24** prohibits the employment of children **below the age of 14 years** in any factory, mine, or **hazardous** occupation.
- ◊ **Article 39** requires the States to direct its policy towards ensuring that the health and strength of workers, men and women, and the tender age of children is not abused.

▷ Legal Framework

- ◊ **Child Labour (Prohibition and Regulation) Amendment Act, 2016** prohibits the engagement of children (below 14 years) in all occupations and of adolescents (below 18 years) in hazardous occupations.

6.2.3. Adolescents in India



CONTEXT

Recently, “Economic Case for Investment in the Well-being of Adolescents in India” report was released by the Union Ministry of Health & Family Welfare, which provides insights into interventions where investments on adolescents will yield high returns.

ANALYSIS



Key Highlights

- ▶ India has **largest adolescents (aged 10-19) population** (253 million) in world.
- ▶ **Adolescent mortality rate fell by more than 50%** and adolescent fertility rate declined by 83% (2000-2019).
- ▶ Young people **completing secondary school** has more than doubled from 22% (2005) to >50% (2020).
- ▶ **22.7% rise in fatal road accidents** for adolescents under 18 has been observed between 2021 and 2022).
- ▶ Suggested Interventions are expected to **boost Indian economy by 10.1% of annual GDP**.

Issues faced by Adolescents

- ▶ **Health:** Unplanned pregnancies, malnutrition, mental disorders (**depression and anxiety**).
- ▶ **Education and Employment:** Stagnant learning, Unemployment (due to emerging technologies such as AI).
- ▶ **Child marriage:** Although, girls getting married before 18 has declined by over half (2006–2024), **1 in 3 of world’s child bride live in India.**
- ▶ **Violence and injury:** Prevalence of road accidents, self-harm, and suicide.

Interventions required

- ▶ Schools in **underserved areas, improved pedagogy, and merit based scholarships** for better learning outcomes
- ▶ Prevention of **cyber bullying, interpersonal violence** and prevention and treatment of **common mental disorders for improved adolescent health.**
- ▶ Impart **life skills and transfer payments to girls**, changes in cultural and social norms to curb child marriage
- ▶ **Graduated licensed schemes** to curb injury to adolescents.

Government Initiatives for Adolescents

- ▶ Rastriya Kishor Swasthya Karyakram
- ▶ National Education Policy, 2020
- ▶ School Health and Wellness Program under Ayushman Bharat
- ▶ Motor Vehicle Amendment Act 2019 and National Road Safety Policy.

6.2.4. Model Foster Care Guidelines, 2024



CONTEXT

Ministry of Women and Child Development released Model Foster Care Guidelines (MFCG), 2024

ANALYSIS



About the Guidelines

- ▶ The guidelines succeed the MFCG 2016 and are based on provisions in Juvenile Justice (Care and Protection of Children) (JJ) Act, 2015 and JJ Model Rules, 2016, Adoption Regulations, 2022 and Mission Vatsalya Scheme.
- ▶ **Foster care** is the placement of a child in the domestic environment of a family, other than the child’s biological family.
 - ▷ Such family is selected and approved by the **Child Welfare Committee** for providing foster care.

Child Adoption Framework in India

- ▶ **Central Adoption Resource Authority (CARA):** Nodal body for adoption of Indian children and in-country and inter-country adoptions.
 - ▷ It is a **statutory** body of MWCD established under JJ Act 2015.
- ▶ CARA primarily deals with adoption of **orphan, abandoned and surrendered children** through its associated / recognised adoption agencies.

Key provisions in Revised Guidelines

- ▶ **Children eligible for foster care:** Children **above 6 years** age living in childcare institutions or community including hard-to-place children, children having special needs and children having unfit guardians.
- ▶ **Eligibility to Foster:** **Any person, irrespective of marital status**, and whether or not they have a biological son/daughter to foster a child. (**Only married couple were eligible under MFCG 2016**).
 - ▷ Allows single females to foster and adopt a child of any gender, however, **single males can only do so for male children.**
 - ▷ Spouse/couple shall have a **stable marital relationship of 2 years.**
- ▶ **Foster Adoption:** Allows the foster parent, who is already fostering the child for **minimum 2 years** (as opposed to 5 years earlier), to adopt the same child.

6.3. EDUCATION

6.3.1. Failing Public Examination Systems



CONTEXT

Recent controversies surrounding NEET UG and UGC NET examinations conducted by **National Testing Agency (NTA)** raised serious concerns regarding failure of public examination system. In this backdrop, Ministry of Education constituted a **high-level committee** of experts led by former **Dr. K Radhakrishnan** to reform NTA. The **Public Examinations (Prevention of Unfair Means) Act (PEA), 2024** and Rules were also passed.

ANALYSIS



Reasons for Failing Examination Systems in India

- ▶ **Systemic:** A single national-level exam, such as NEET, which doesn't account for local educational contexts, raises **concerns about equitable assessment**.
 - ▷ **Political influence:** Through **appointment** to examination conducting agencies impacts **autonomy**, resulting in **potential manipulation** and **corruption** of exam processes. **E.g., Vyapam scam in Madhya Pradesh.**
 - ▷ **Policy instability:** Frequent changes in exam patterns or eligibility criteria create confusion and stress for students. **E.g.,** Introduction and subsequent removal of upper age limits for NEET.
- ▶ **Cultural:** A degree of **social acceptance for cheating** in exams as it is viewed as a way to overcome systemic disadvantages. **E.g.,** Incidents of mass cheating reported from Bihar.
- ▶ **Technological Advancements:** Use of Bluetooth devices and Smartwatches and **inadequate cybersecurity measures** in exam conduction has created newer challenges to exam conduction.

Potential Implications of failure of Public Examinations

- ▶ **Social:** Repeated leaks and cancellations of examinations can result in **erosion of public trust** and widespread skepticism about the exam's fairness.
 - ▷ **Widening social inequalities** as disadvantaged students suffer more from such disruptions.
 - ▷ **Mental health issues** among students and parents due to increased uncertainty and anxiety.
 - ▷ Shift in social values as repeated scandals may **normalize cheating**, affecting societal ethics.
- ▶ **Economic:** **Direct financial losses** due to conduct of re-examinations.
 - ▷ **Potential brain drain:** Due to loss of faith in domestic exams which may drive more students to seek education abroad, leading to economic losses.
 - ▷ **Political:** Exam scandals can lead to **hasty policy changes driven by political pressures** rather than educational needs affecting the **public's perception of government efficiency**.

BRIEF BACKGROUND

National Testing Agency (NTA)

- ▶ **Established:** In 2017 by Union Ministry of Education (MoE) under Societies Registration Act (1860).
- ▶ **Objective:** To conduct efficient, transparent tests of international standards in order to assess the competency of candidates for admission, and recruitment purposes.
- ▶ Examinations conducted by NTA
 - ▷ Entrance examinations - JEE (Main), NEET-UG, CMAT, etc.
 - ▷ Assessments for Fellowship - UGC-NET
- ▶ **Role of NTA in policymaking:** NTA will have a repository of data on student performance for data-led policy making for improving teaching and learning.

Public Examination (Prevention of Unfair Means) Act, 2024

- ▶ **Objective:** To bring greater transparency, fairness and credibility to the public examination systems and uphold the trust of the youth in the system.
- ▶ **Key Provisions**
 - ▷ **Coverage-** Examinations held by the Union Public Service Commission, the Staff Selection Commission, Railways, National Testing Agency, etc.
 - ▷ **Defines "Unfair means"** which includes unauthorized access or leakage of question paper or answer key, assisting a candidate during a public examination, tampering with computer network or resources, conducting fake examination, etc.
 - ▷ **Punishments**
 - ◇ **For person(s) resorting to unfair means:** Imprisonment for a term not less than three years, may extend to five years with fine up to ten lakh rupees.

- ▷ **Federal tensions:** Issues with national-level public examinations can **exacerbate federal tensions** between central and state governments. E.g., Disagreements between Centre and States over the implementation of NEET.
- ▷ **Institutional: Deterioration of professional standards** due to lack of fair assessment of candidates resulting in less qualified individuals entering the professional fields.
- ▷ **Perpetuation of cycle of mediocrity:** Recruitment of incompetent professionals as future educators or evaluators, perpetuates the cycle of low quality education and assessment.
- ▷ **Burden of training: On employers and professional bodies** as they may need to invest more in training to bridge the competency gap.

Way Forward

- ▷ **Improving exam design:** Emphasize more on **assessing critical thinking and application skills** rather than rote learning by introducing diverse question formats and practical assessments.
 - ▷ e.g., Incorporating **project-based assessments** in admission to higher educational institutions.
- ▷ **Security measures:** Formulation and implementation of **stricter protocols for handling and distribution of question papers** by examination-conducting bodies.
 - ▷ It can include measures such as **real-time monitoring of exam-centres**, use of **encrypted digital lockers to storing question papers**, etc.
- ▷ **Institutional reforms:** Establish independent statutory body for overseeing public examinations to reduce political interference in examination boards and testing agencies.
- ▷ **Decentralization and customization:** Allow more state-level input in national exams and introduce adaptive testing to address regional disparities and better assess individuals.

- ◇ **For service provider or any person/ group committing organized crime:** Imposition of a fine up to ₹1 crore, imprisonment of minimum 5 years and up to 10 years and proportionate cost of examination shall also be recovered from it.
- ◇ All offenses shall be **cognizable, non-bailable, and non-compoundable.**
- ▷ **Public Examination (Prevention of Unfair Means) Rules, 2024:**
 - ▷ **Venue-in-charge to take appropriate action**, including **filing of FIR**, if prima-facie case of unfair means or offense in conduct of public examination is reported.
 - ▷ A **committee** should be constituted by public examination authority if **there is involvement of Management or Board of Directors of service provider** conducting exam.
- ▷ **Periodic reporting of all incidents** of unfair means or offence in conduct of public examination to public examination authority by Regional officer **along with details of action taken.**





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6.4. HEALTHCARE

6.4.1. Safety of Healthcare Professional



CONTEXT

Recently, first meeting of **National Task Force (NTF)** to address Medical Professionals' Safety, constituted by the Supreme Court, was held.

ANALYSIS



Challenges associated with Safety of Healthcare Professional

- ▶ **Inadequate security provisions:** Lack of security personnel in medical care units in government run hospital.
 - ▷ 1/3rd of doctors in India feel unsafe during night shifts. (Survey by IMA)
- ▶ **Poor Infrastructure:**
 - ▷ **Lack of functional CCTV cameras** to monitor and control access to sensitive areas.
 - ▷ **Inadequate resting spaces** for medical professionals posted for night-duties. For instance, One-third of available duty rooms did not have an attached bathroom (IMA survey).
 - ▷ **Inadequate or no transportation facilities for safe commute** for medical professionals.
 - ▷ **Lack of screening arms and weapons equipment** at the entrance of hospitals.
- ▶ **Long Working hours:** Interns, residents and senior residents are made to perform 36-hour shifts in conditions where basic needs of sanitation, nutrition, hygiene, safety, etc. are lacking.
- ▶ **Easy Access:** Unrestricted access to patients and their attenders to most of the places within hospital and doctors' resting rooms.
- ▶ **Health Hazards:** Healthcare Professionals are prone to exposure to hazardous substances, viruses etc. E.g. nearly 1,600 doctors succumbed to COVID in India.

Way Forward

- ▶ **State Responsibility:** State governments must establish mechanisms to prevent violence against doctors, including imposing penalties and setting up helplines.
- ▶ **Mandatory Institutional Reporting:** Of violence against a healthcare worker while on duty, by the head of the institution by **filing an institutional FIR within six hours of the incident.** (MoH&FW)
- ▶ **Infrastructural development:** Installation of CCTV cameras at all entrance and exit point of hospitals, use of bio-metric and facial recognition to access sensitive areas, etc.

BRIEF BACKGROUND

About NTF

- ▶ The NTF was constituted following the murder of postgraduate doctor at RG Kar Medical College Hospital (Kolkata).
- ▶ **Mandate:** To formulate effective recommendations to remedy the issues of safety, working conditions and well-being of medical professionals and other related matters.
- ▶ **Four thematic sub-groups formed for:**
 - ▷ strengthening of infrastructure in medical institutions,
 - ▷ strengthening of security systems,
 - ▷ revamping of working conditions, and
 - ▷ the legal framework across the states.

About Healthcare Professionals

- ▶ Healthcare Professional includes a **scientist, therapist or other professional** who studies, advises, researches, supervises or **provides preventive, curative, rehabilitative, therapeutic or promotional health services** (As per NCAHP Act 2021).
- ▶ **Health and law and order are State subjects.**
 - ▷ Therefore, it is **primary responsibility of State government** or Union Territory administration to take note of events and eventualities and prevent violence.
 - ▷ **Private sector** runs majority of **secondary, tertiary, and quaternary care institutions** with a major concentration in metros, tier-I, and tier-II cities
- ▶ **According to the WHO:**
 - ▷ Health workers are at high risk of violence all over the world, especially in disaster and conflict situations.
 - ◊ **8-38% of health workers suffer physical violence** while other face verbal aggression.
 - ▷ **Most violence is perpetrated by patients and visitors.**

- ▶ **Employees Safety Committees:** Composed of doctors, interns, residents and nurses should be constituted at every medical establishment to conduct **audits on institutional safety measures.**
 - ▷ Effective crowd managed by training of security personnel at hospitals.
- ▶ **WHO Recommendations**
 - ▷ **Uphold Occupational Health and Safety for health workers** by developing **programmes** and appointing **responsible officials** to ensure accountability.
 - ▷ **Promote a culture of zero tolerance** to violence against health workers.
 - ▷ **Establish a 'blame-free' and just working culture** through open communication and including legal protection from punitive action on reporting adverse safety events.
 - ▷ **Establish policies to ensure appropriate and fair duration of deployments,** rest break and minimizing the administrative burden on health workers.

Other Initiatives taken to ensure Safety of Healthcare Professional

India:

- ▶ **Centre**
 - ▷ **Epidemic Diseases (Amendment) Act, 2020:** Acts of violence against healthcare personnel during an Epidemic are considered **cognisable and non-bailable offences.**
 - ▷ **Prevention of Violence Against Healthcare Professionals and Clinical Establishments Bill, 2022.**
 - ▷ **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013:** It applies to hospitals and nursing homes (including private health providers).
- ▶ **State**
 - ▷ **Karnataka Medical Registration and Certain Other Law (Amendment) Act, 2024**
 - ▷ **Kerala Healthcare Service Persons and Healthcare Service Institutions (Prevention of Violence and Damage to Property) Amendment Act, 2023.**
- ▶ **Global:**
 - ▷ **Framework guidelines** for addressing workplace violence in health sector by ILO and WHO.
 - ▷ **Zero-tolerance policy on Violence:** Enforced by UK's National Health Service, supported by a dedicated security team and a comprehensive reporting system.
 - ▷ **Safety measures like security personnel, panic buttons, and mandatory de-escalation training** introduced in Australian hospitals.

6.4.2. Mental Health of Students

CONTEXT

National Task Force for Mental Health and Wellbeing of Medical Students submitted its report in response to alarming incidents of suicides by medical students in last five years.

ANALYSIS

Factors contributing to mental health problems among students:

- ▶ **Immediate Triggers/Precipitating Factors:**
 - ▷ Instances of **financial loss, sudden grief, mental health deterioration,** and adverse life events such as failing exams or public humiliation E.g. **Suicides in IITs.**
 - ▷ **Influence of Social Media:** A 2018 British study tied **social media** use to decreased, disrupted, and delayed **sleep,** which is associated with depression, memory loss, and poor academic performance.

BRIEF BACKGROUND

Mental Health of Students

- ▶ Report emphasizes the **high prevalence of depression** among Indian medical students.
 - ▷ **27.8 per cent of undergraduate students had mental-health conditions** and 31.3 per cent of postgraduate students had suicidal thoughts.
- ▶ **23 percent of school children** in India have mental health problems. (A study by the **National Institute of Mental Health and Neurosciences (NIMHANS)**)
- ▶ **National Mental Health Survey (2015–2016)** reported a **7% prevalence of psychiatric disorders** in **13–17 years** and was nearly equal among both the genders.

- ▶ **Social isolation and loneliness:** Due to **dysfunctional family dynamics**, hormonal changes and issues of gender identity during teenage.
 - ▷ Intense combination of **relentless academic pressure, financial sacrifice, and high parental expectations** are also key factors behind students' suicide in places like Kota.
- ▶ **Predisposing Biological Factors:**
 - ▷ **Genetic predispositions**, such as alterations in **gene expression and family history of suicide**, can increase suicide risk by affecting brain function and behavior.
 - ▷ Certain personality traits like impulsivity, along with **disabilities and major physical illnesses**, may also elevate risk by contributing to feelings of isolation, and depression.
- ▶ **Stigmatisation:** Because of stigma against seeking mental health care issues are not identified at the initial stage.

Issues with handling mental care in India:

- ▶ **Fragmented approach:** Insufficient Integration into Primary Healthcare results in a fragmented approach to mental healthcare.
- ▶ **Geographical disparities in Infrastructure and Resources:** Rural & remote areas, often lack necessary infrastructure.
- ▶ **Shortage of Mental Health Professionals:** Only **0.75 psychiatrists/lakh population** in India (**Economic Survey 2023-24**).
- ▶ **Lack of Awareness and Stigma** leads to discrimination, social isolation, and prejudice against individuals seeking help.

Way Forward

- ▶ **Regular Training Programs:** For faculty to identify and support students at risk.
- ▶ **Counseling Services:** A 24/7 Support System should be implemented across schools and colleges. E.g. **TeleMANAS initiative** using the toll-free number. (14416)
- ▶ **Early detection and treatment:** Sensitization of front-line health workers and teachers to mental health challenges for early identification of at-risk individuals.
 - ▷ **Children and adolescents** require special attention considering that around half of all mental health disorders start by the age of fourteen years.
- ▶ **Policy reforms and resource allocation:** By prioritizing Mental Health in the healthcare agenda and adopting an integrated approach that addresses mental health's biological, psychological, and social determinants.
- ▶ **Digital Detox:** Encouraging students to **balance digital activities with physical exercise**, hobbies, and offline social interactions to mitigate the negative impacts of excessive digital use.
- ▶ **Practicing self-awareness:** Students can improve mental well-being by practicing self-awareness, mindfulness, and regular exercise, with healthy sleep and eating habits to reduce anxiety and build emotional resilience.

What is mental health?

- ▶ It is a **state of well-being** in which every **individual realizes his or her own potential**, can **cope** with the **normal stresses of life**, can work productively and fruitfully, and is able to **make a contribution** to her or his community. (**WHO**)
 - ▷ Mental health is **best understood as a resource**, that allows **individuals to recognize and understand their skills** and potential that they may use to pursue their passions.
- ▶ **Components of Mental Health (Keys):**
- ▶ **Emotional well-being** includes happiness, interest in life, and satisfaction.
- ▶ **Psychological well-being** includes liking most parts of one's own personality, having good relationships with others, and being satisfied with one's own life.
- ▶ **Social well-being** refers to upholding the functions of social contribution, feeling part of a community (social integration), believing that society is becoming a better place for all people (social actualization), and social coherence.

Steps Taken for Mental Wellbeing for Students

- ▶ **National Mental Health Program (NMHP):** To address huge burden of mental disorders and shortage of qualified professionals in field of mental health.
- ▶ **Tele Mental Health Assistance and Networking Across States (Tele MANAS):** Comprehensive, integrated, and inclusive 24/7 tele-mental health services.
- ▶ **Mental Health Care Act, 2017:** To protect and promote the **rights of individuals with mental illness** and ensures **access to mental healthcare and treatment**.
- ▶ **SAATHI Program:** To support mental health among students through workshops, online sessions.
- ▶ **Helping Adolescents Thrive (HAT):** A joint **WHO-UNICEF** effort to strengthen policies and programmes for the mental health of adolescents.
- ▶ **SC banned ragging in 2001** and **UGC introduced the Regulations on Curbing Ragging in Higher Educational Institutions, 2009.**

6.4.3. Immunisation in India

CONTEXT

WHO/UNICEF Estimates of National Immunization Coverage (WUENIC) 2023 released.

ANALYSIS

Key findings

- ▶ **Global:**
 - ▷ Childhood immunization coverage stalled in 2023, leaving 2.7 million children either unvaccinated or under-vaccinated.
 - ▷ Over 50% of unvaccinated children live in the 31 conflict-affected countries.
- ▶ **India:**
 - ▷ In 2023, 1.6 million children missed crucial Diphtheria, pertussis, and tetanus (together called DPT) and measles vaccinations.
 - ▷ India lacks human papillomavirus (HPV) vaccination in national programs despite cervical cancer being second-highest cancer in women (22.86% of all cancer cases in women).
 - ▷ India accounted for 2 million zero-dose children.
 - ◊ Zero-dose children are those that lack access to or are never reached by routine immunization services.

Challenges faced in Immunization

- ▶ **Limited resources** including trained manpower, poor infrastructure for storage of vaccines and other logistics (e.g. inactivated polio).
- ▶ **Lack of responsibility:** It is restricted only to vaccinate those who come for a visit; **No active follow-up** and limited accountability.
- ▶ **Lack of centralized record systems,** pressure to achieve vaccination targets, etc.

BRIEF BACKGROUND

Immunisation in India

- ▶ **Universal Immunization Programme (UIP)** has been operational in India since 1985.
- ▶ **Mission Indradhanush 2014** was launched as a special drive to vaccinate all unvaccinated and partially vaccinated children, pregnant women under UIP.
 - ▷ So far 5.46 crore children and 1.32 crore pregnant women have been vaccinated.
- ▶ **Intensified Mission Indradhanush (IMI) 5.0, 2023** is a catch-up vaccination campaign for children up to 5 years of age and pregnant women, who were left out.
 - ▷ **12 diseases covered:** Diphtheria, whooping cough, tetanus, polio, tuberculosis, measles and hepatitis-B, pertussis, meningitis and pneumonia, Japanese encephalitis (JE) and measles-rubella (MR).
 - ▷ **Special focus is on improvement of Measles and Rubella vaccination coverage and use of U-WIN digital platform for Routine Immunization** in pilot mode across all districts in the country.



6.5. MISCELLANEOUS

6.5.1. India's Sports Ecosystem



CONTEXT

India's Olympic ranking fell from 48th in Tokyo (2020) to 71st in Paris. This highlights gaps in India's sports ecosystem despite multiple initiatives taken to improve India's sports ecosystem.

ANALYSIS



Challenges that persist in India's sporting ecosystem

- ▶ **Talent identification issues:** Despite being the world's most populous country, India sent only 117 athletes to the Paris Olympics, compared to 594 from the U.S., 572 from France, etc.
 - ▷ This is due to **lack of early-stage talent identification and inadequate scouting mechanisms.**
- ▶ **Resource constraint:** Low sports budget compared to countries like US, Germany, and China.
 - ▷ **Fund underutilization:** Khelo India scheme spent only Rs 318 crore out of Rs 500 crore allocated in 2019-20. (Parliamentary Standing Committee on Human Resource Development).
- ▶ **Infrastructure Gaps:** Sports infrastructure is limited, especially in educational institutions and underdeveloped states like Bihar and Jharkhand.
 - ▷ **Concentration of international standard facilities in a few states** like Haryana, Karnataka.
- ▶ **Governance Issues:** Sports governance is dominated by **politicians and bureaucrats** and often suffers from corruption and **unethical** conduct. E.g. Allegation of sexual harassment on Wrestling Federation of India (WFI) president and the coaches.
- ▶ **Mismanagement of athletes:** Lack of adequate scientific management led to instances like disqualification of Vinesh Phogat from Paris Olympics due to weight etc.
- ▶ **Other Challenges:** Lack of awareness about sports opportunities and government support, shortage of coaching staff, gender disparities, inadequate private sector support, etc.

Way ahead for strengthening India's Sports Ecosystem

- ▶ **Driving mindset change:** By improving Parents' awareness about advantages of sports accreditation for students like reservation in higher education and preference in government jobs.
 - ▷ Corporates should inculcate sports as a constructive means for wellness among employees.

BRIEF BACKGROUND

India's Performance

- ▶ India won **six medals** in Paris with **no gold medals** (one silver, five bronze), down from **seven** in Tokyo (one gold, two silver, four bronze).
- ▶ Despite the decline, **Paris was still India's third-best Olympic performance.**
- ▶ Also, this decline contrasts with improved performances in other events like the **2022 Commonwealth Games and 2021 Summer Deaflympics.**

India's Sporting Ecosystem

- ▶ **Sports is a state subject.** Thus, the responsibility for promotion/development of sports in the country, including providing sports facilities, rests primarily with the respective State / UT.
- ▶ However, **Central government**, through its various schemes, **supplements** the efforts of state governments.
- ▶ Sports generates **revenue** and raises country's **soft power** while also having significant **contribution to general health and well-being.**
 - ▷ Despite these benefits, **only around 6% of India's population participates in sports**, which is much lower than around 20% in countries like the US, Australia.

Initiatives to promote sports ecosystem in India

- ▶ **Budgetary support:** Budgetary allocation for the Union Ministry of Youth Affairs and Sports has nearly doubled from 2014-15 to 2023-24.
- ▶ **Khelo India program:** For identification and development of athletes at the grassroots and elite levels.
- ▶ **Khelo India Rising Talent Identification (KIRTI) programme:** Aimed at school children between 9 and 18 years.
- ▶ **Mainstreaming of Sports Activities:** FIT India Movement and the incorporation of sports within the **National Education Policy 2020.**

- ▶ **Increase the talent pool**
 - ▷ **Nourish younger talent pool:** Implement more tournaments in schools and **community-based sports programs, provide nutrition support and address social barriers and gender inequality** in sports.
 - ◊ E.g. The **'one panchayat, one playground'** initiative by the **Kerala Government**.
 - ▷ **One State-One Sport policy:** Promotion of Region-specific traditional sports to ensure mass participation and cultivate an interest among people. E.g. **'Rural Olympics'** in Rajasthan.
- ▶ **Improving governance of Sports Federation:** Facilitate independent form of recruitment and bringing transparency in the functioning and policymaking of federations.
- ▶ **Corporate funding for the sports sector:** Capitalize on **CSR funds for sports** by incentivising formation of NGOs specialised in sports across the country.
- ▶ **Supporting multiple disciplines:** Ensure consistent growth of all sports by building league in line with the Indian Premier League (IPL). E.g. Pro Kabaddi League.
- ▶ **Ensuring Accountability:** Implement performance metrics for nutritionists and support staff of athletes and fix the accountability for last-moment mismanagement.

- ▶ **National Sports Development Fund scheme:** The Scheme funds a **Developmental Group of Athletes** who are medal prospects for the Olympic Games.
- ▶ **Target Olympic Podium Scheme (TOPS):** To provide comprehensive assistance including funding, specialised equipment, international exposure, top-tier coaching, and a monthly allowance to India's top athletes.
- ▶ **One School-One Sport policy:** By the **Ministry of Defence** for Sainik Schools so that they can focus on at least one sporting discipline identified for the respective **State/UT**.
- ▶ **Use of Technology:** Data analytics based on Artificial Intelligence are being used to predict the sporting acumen in an aspiring athlete.

About Olympic Games

- ▶ **Genesis:** Olympic Games began in **1896 in Athens (Greece)**, with 14 nations competing in nine sports. The Games are **held every four years since then**.
- ▶ **Motto:** "Faster-Higher-Stronger" reflecting the aim of the Olympic movement from an athletic, technical, moral and educational perspective.
- ▶ **Olympic Flag:** Introduced in 1920, the flag features **five interlocking rings symbolising the 'five parts of the world'** in which the **Olympic movement prevails**.
- ▶ **Olympic Flame:** It symbolizes the **positive values of fire** and with the **Olympic Torch Relay**, the flame travels the country in which the Games are being held, starting a few months before the Games begins.
- ▶ **Paris 2024:** Included 4 additional sports viz., **breaking** (making its Olympic debut), **sport climbing, skateboarding, and surfing**.
- ▶ **Court of Arbitration for Sport (CAS):** It was **created in 1983 to deal** with the associated legal problems.
 - ▷ It is **recognised by the Paris Convention** signed by the presidents of the IOC among others

India and Olympics

- ▶ India first participated in the **Olympics in 1900 in Paris**, represented by an **Anglo-Indian Norman Pritchard**.
- ▶ The **Indian Olympic Association (IOA)** was **formed in 1927**, with **Sir Dorabji Tata as President**, and it was **recognized** by the IOC the same year.
 - ▷ The IOA **coordinates with National Sports Federations to send teams to the Olympics** and other international games.
- ▶ India is **preparing to host Olympic 2036**, and aspires to become **top ten sports nation by 2036** and a **top five** country by **2047**.

6.6. TEST YOUR LEARNING

MCQs

Q1. With respect to the Global Gender Gap Report, 2024, consider the following statements:

1. It is released annually by World Economic Forum (WEF) based on the Global Gender Gap Index (GGGI).
2. India is ranked 127th in 2024 with improvement in Educational Attainment and Political Empowerment.
3. Globally, 68.5% of the gender gap has been closed.

How many of the above statements given is/are correct?

- a) Only one
- b) Only two
- c) All Three
- d) None

Q2. With respect to the National Testing Agency (NTA), consider the following statements:

1. It was established in 2017 by Ministry of Education (MoE) under Societies Registration Act (1860).
2. NTA will have a repository of data on student performance for data-led policy making for improving teaching and learning.
3. A high-level committee of experts led by Dr. K Radhakrishnan was formed to suggest measures to reform NTA.

Which of the above statements is/are correct?

- a) Only 1 and 2
- b) Only 2 and 3
- c) 1, 2 and 3
- d) None

Q3. International Labour Organization's Conventions 138 and 182 are related to: (2018)

- (a) Child Labour
- (b) Adaptation of agricultural practices to global climate change
- (c) Regulation of food prices and food security
- (d) Gender parity at the workplace

Q4. With respect to immunization in India, consider the following statements:

1. Intensified Mission Indradhanush (IMI) 5.0, 2023 is a catch-up vaccination campaign for children up to 5 years of age and pregnant women, who were left out.
2. Special focus is on Measles and Rubella vaccination.
3. It covers vaccination for 12 diseases like whooping cough, tetanus, polio etc

How many of the above statements given is/are incorrect?

- a) Only one
- b) Only two
- c) All Three
- d) None

Q5. Consider the following statements about the 2024 Olympics in Paris:

1. Motto of the Olympics is "Faster-Higher-Stronger".
2. Paris 2024 Olympics included 4 additional sports namely, breaking (making its Olympic debut), sport climbing, skateboarding, and surfing.
3. India first participated in the Olympics in 1900 in Paris.
4. India's Olympic ranking fell from 48th in Tokyo (2020) to 71st in Paris.

Which of the above statements is/ are correct?

- a) 1 and 4 only
- b) 1, 2 and 4 only
- c) 2 and 3 only
- d) 1, 2, 3 and 4

Questions

Q1. An athlete participates in Olympics for personal triumph and nation's glory; victors are showered with cash incentives by various agencies, on their return. Discuss the merit of state sponsored talent hunt and its cultivation as against the rationale of a reward mechanism as encouragement. (UPSC, 2014) (150 words)

Q2. India faces high prevalence of Child Food Poverty. Explain what is Child Food Poverty, its reasons and measures being taken to improve child nutrition in India? (250 words)



SCIENCE & TECHNOLOGY



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7.1. BIOTECHNOLOGY

7.1.1. BioE3 (Biotechnology for Economy, Environment and Employment) Policy



CONTEXT

Union Cabinet has approved BioE3 (Biotechnology for Economy, Environment and Employment) Policy.

ANALYSIS



About BioE3 Policy

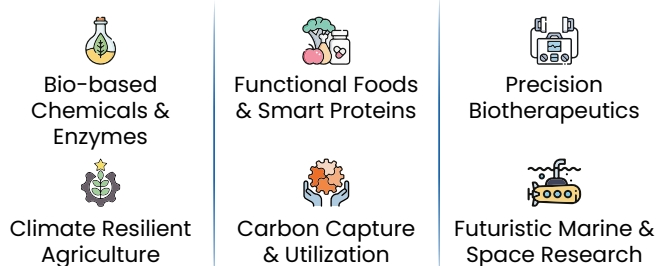
- ▶ **Aim:** Establish a framework to adopt advanced technologies and align research to revolutionize biomanufacturing processes.
 - ▷ **Policy** will scale up efforts to achieve target of US \$300 billion bioeconomy by 2030.
 - ▷ Policy will steer India on the path of 'Green Growth' by promoting 'Circular Bioeconomy'.
 - ◊ **Bioeconomy** is the production, use and conservation of biological resources. E.g.: Sustainable agriculture, fishing, etc.
- ▶ **Implementation Agency:** Department of Biotechnology (DBT).
- ▶ Provides innovation-driven support to R&D and entrepreneurship across **thematic sectors**.
- ▶ The research and translational activities will be catalyzed by:
 - ▷ **Bio-Artificial Intelligence (AI) Hubs: Integrating AI** with biological data like genomics, proteomics, etc.
 - ▷ **Bio-manufacturing Hubs:** Provides **pilot and pre-commercial manufacturing facilities** for researchers, startups and SMEs to support early-stage manufacturing.
 - ▷ **Regulations and Global Standards:** Promotes **inter-ministerial co-ordination** to ensure seamless integration of biosafety and biosecurity considerations.
 - ▷ **Data Governance Framework:** Ensures that **discoveries and inventions** are shared with the scientific community while **protecting intellectual property**.

BRIEF BACKGROUND

Initiatives taken to boost Bio-Economy

- ▶ **National Mission on Bioeconomy, 2016:** By the Institute of Bio-resources and Sustainable Development (IBSD).
- ▶ **National BioPharma Mission, 2017:** An industry-Academia Collaborative Mission for accelerating biopharmaceutical development.
- ▶ **National Biotechnology Development Strategy 2015-2020:** Aim to establish India as a world class bio manufacturing hub.
- ▶ **National Policy on Biofuels, 2018:** Aims to promote the production of biofuels from the domestic feedstock.

Thematic Sectors of Biomanufacturing



Need for BioE3 Policy

- ▶ **Sustainability:** Promotes sustainable bio-based production of high-value **chemicals, enzymes, and biopolymers**.
- ▶ **Cater Nutrition Challenge:** Facilitates production of smart proteins and functional foods with low carbon footprint using **synthetic biology**.
- ▶ **Growth of Cell and Gene therapy:** By 2027, the cell and gene therapy market are forecasted to be over \$22 billion.
- ▶ **Food security:** India should promote **soil microbiome research**, including genome analysis and selection of superior microbial phenotypes etc. for better production.
- ▶ **Climate Change Mitigation:** Policy facilitates **de-carbonization** through microbial conversion of captured CO₂ into industrially relevant compounds.
- ▶ **Space-Missions:** Facilitates development of safe, nutritious meals for long-duration space missions.

Way Forward

- ▶ **Adopt circular bioeconomy:** Principles of the circular economy (reuse, repair and recycle) are a fundamental part of the bioeconomy.
- ▶ **Learning from the USA:** Like the \$2 billion investment made for startups in USA for transitioning into large-scale manufacturing.
- ▶ **Single window clearance:** Implement a single window clearance system for all selected Biomanufacturers.
- ▶ **STEM talent:** Retain 25% of global Science, technology, engineering, and mathematics (STEM) talent within India for sustained growth.
- ▶ **International Collaborations:** Many nations like the USA, Japan, Australia, Finland and European countries, have put forward their policies, strategies and roadmaps to set up a robust framework for biomanufacturing.

7.1.2. Genetically Modified (GM) Crops

CONTEXT

The Supreme Court delivered a split verdict on the validity of the Union government's approval for the environmental release of GM mustard crops (DMH-11) in 2022.

ANALYSIS

About GM Mustard Crop (DMH-11)

- ▶ Developed by Centre for Genetic Manipulation of Crop Plants (Delhi University).
 - ▷ It paves the way for the commercialization of the country's **first GM food crop**.
- ▶ Result of a crossing between two mustard varieties ('Varuna' and East European 'Early Heera-2').
- ▶ This cross has been done after introducing the **barnase** and **barstar gene** from the soil bacterium **Bacillus amyloliquefaciens**.

Other Genetically Modified (GM) Crops in India

- ▶ **Bt-Cotton:** First non-food and only approved GM crop for commercial cultivation.
- ▶ **Bt-Brinjal:** Bt-brinjal was cleared by GEAC for commercial cultivation, but it was put on moratorium.

Regulatory Framework of GM Crops in India

- ▶ **Food Safety and Standards Act, 2006:** Prohibits import, manufacture, use or sale of GM food without FSSAI's approval.
- ▶ **Review Committee on Genetic Manipulation (RCGM):** Under the Department of Biotechnology (DBT), monitors various aspects of R & D projects involving GM organism.
- ▶ **State Biotechnology Coordination Committee (SBCC):** Reviews the safety and control measures in various institutions handling Genetically Modified Organism (GMO).
- ▶ **District Level Committee (DLC):** Inspects, investigates and reports to the SBCC or the **Genetic Engineering Appraisal Committee (GEAC)** about compliance or non-compliance of regulatory guidelines.

- ▶ **GM crop Approval process:** After thorough scientific evaluation of health and environment safety as per applicable guidelines made under **Environment (Protection) Act, 1986**.

BRIEF BACKGROUND

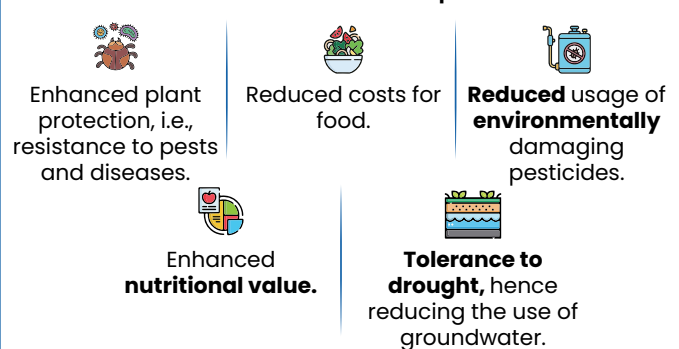
What is Genetic Modification?

- ▶ Involves altering an **organism's DNA**. This can be done by altering an **existing section of DNA**, or by adding a new gene altogether.
- ▶ **Working:** Scientist **insert a foreign gene** (called transgene) in the plant's own genes.
 - ▷ This could be introduced from one plant to another plant, from a plant to an animal, or from a microorganism to a plant.

About Barnase-Barstar system

- ▶ To facilitate cross-pollination, male sterile (MS) lines containing the barnase gene are crossed with **fertility restorer (RF)** lines containing the barstar gene.
- ▶ The **barnase and the barstar lines** also contain the bar gene which confers resistance to herbicide phosphinothricin.

Benefits of GM Crops



Concerns about GM Crops

- ▶ **Human Health:** Cultivation GM herbicide-tolerant crops rely heavily on glyphosate, classified as a “probable carcinogen” by the WHO.
- ▶ **Biodiversity loss:** The bar gene makes **GM mustard herbicide-tolerant** to glufosinate ammonium (a herbicide), but concerns were raised that it could harm mixed farming by affecting surrounding vegetation.
- ▶ **Contamination:** E.g., There have been transgene escape events in **Canada with GM canola, flax, wheat and pigs.**
- ▶ **Effect on honeybees and other pollinators:** E.g., negative impact of HT crops on population of **monarch butterfly** in the USA.
- ▶ **Corporate Control:** The high level of corporate concentration in the **seed market** has already meant higher prices, limited choices for farmers.
- ▶ **Income Loss:** With various crops show that a substantial increase in production causes a sharp decline in farm-gate prices. E.g. **Bt Cotton** is one example where the bumper crop led to a sharp price decline.

Way Forward

- ▶ **Research and Development:** Enhance public investment in the **R&D** of new seed varieties that are more resilient and less harmful to the sustainability of the sector.
- ▶ **Policy Framework:** Union government must develop a national policy on GM crops in consultation with all stakeholders (directed in SC Judgement).
- ▶ **Information to be generated for regulatory approval:** Assessment of possible allergenicity and toxicity, etc.
- ▶ **Parliamentary Standing Committee Report on “GM Crops and its impact on Environment” recommendations:**
 - ▷ Central government should ensure that the process of field trials is done in a **closed environment and in consultation with agricultural universities.**
 - ▷ GEAC should be headed by an expert from the **field of Biotechnology.**

7.1.3. Bridge Recombinase Mechanism (BRM)



CONTEXT

Scientists discovered naturally existing DNA editing tool - Bridge Recombinase Mechanism (BRM).

ANALYSIS



About BRM

- ▶ BRM utilizes mobile genetic elements or “**jumping genes**”, which cut and paste themselves into genomes, performing on-the-go DNA manipulation and are present in all forms of life.
 - ▷ **Jumping Genes** are small DNA segments with a **recombinase enzyme** along with extra **DNA segments at the ends of the genes that binds and manipulates DNA.**
- ▶ **Extra DNA** at the ends of jumping genes **gets joined together** and converts the DNA double helix structure into a **single-stranded RNA molecule.**
- ▶ This bridge RNA molecule can **bind to two DNA segments (donor and target)**, allowing for **flexible DNA modifications.**
- ▶ **Donor and target loop can be programmed independently**, offering great flexibility in inserting or recombining sequences to DNA.

Significance of BRM

- ▶ Allows researchers to **rearrange, recombine, invert, duplicate, move, and perform other editing operations on very long DNA sequences.**
- ▶ Helps in development of more **advanced gene editing therapeutics and treatments for diseases.**

BRIEF BACKGROUND

About Gene Editing

- ▶ **Gene editing** is alteration of genetic material of a living organism by inserting, replacing, or deleting a DNA sequence, with the aim of improving some characteristic of a plant/ animal or correcting a genetic disorder.

Key Gene-Editing Technologies

- ▶ **CRISPR-Cas9:** A customizable tool that lets scientists cut and insert small pieces of DNA at precise areas along a DNA strand.
- ▶ **TALE nucleases:** Nucleases that cleave unique genomic sequences in living cells can be used for targeted gene editing.
- ▶ **Zinc-finger nucleases:** Targeted to cleave a chosen genomic sequence and provokes cellular repair processes that in turn mediate efficient modification of the targeted location.
- ▶ **RNA interference (RNAi):** Targets RNA molecules to block or activate gene expression.

7.1.4. Recombinant Proteins



CONTEXT

Researchers at Indian Institute of Science (IISc) have developed a new process for production of recombinant proteins.

ANALYSIS



What are Recombinant Proteins (RPs)?

- ▶ These are modified or manipulated proteins encoded by recombinant DNA (rDNA) for increasing production of proteins, modifying gene sequences, and manufacturing useful commercial products.
 - ▷ rDNA is artificially made DNA strand that is formed by combination of two or more DNA molecules.
 - ▷ rDNA technology can be used to combine (or splice) or transfer DNA from different species or to create genes with new functions.


Production of Recombinant Proteins

- ▶ RPs such as vaccine antigens, insulin and monoclonal antibodies, are **mass-produced by growing modified bacterial, viral or mammalian cells** in large bioreactors.
 - ▷ Most widely used organism is yeast *Pichia pastoris* (now called *Komagataella phaffii*) and it utilizes methanol for production of RP.
 - ▷ However, methanol is **highly flammable and hazardous**, requiring stringent safety precautions.
- ▶ Researchers have now developed an **alternative safer process** that relies on a common food additive called **monosodium glutamate (MSG)**.
- ▶ **Escherichia coli (E.Coli)** is also one of the organisms of choice for RP production due to its well-characterized genetics, rapid growth, and high yield production.

BRIEF BACKGROUND




Applications of Recombinant Proteins



- ▶ **Production of biotherapeutics:** Such as insulin, growth hormones, and monoclonal antibodies.
- ▶ **Development of vector vaccines:** Considered safer than traditional vaccines, as they do not contain live pathogens.
- ▶ **Agricultural:** Used in development of GM crops, increase nutritional value of animal feed etc.
- ▶ **Environmental:** Used in **bioremediation** (process of using microorganisms to break down pollutants in the environment).




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7.1.5. A1 and A2 Milk



CONTEXT

Recently, the Food Safety and Standards Authority of India (FSSAI) withdraw its direction to Food Business Operators (FBOs) to not market their milk and milk products in the name of A1 and A2.

ANALYSIS



Basis of the Classification of Milk into A1 and A2



- ▶ **A1 and A2** are genetic variants of **Beta (β)-casein protein**.
- ▶ **Casein** (make 80 % of milk protein) is one of the two types of protein found in milk. The other one is **Whey protein**.
 - ▷ Differentiation in both is linked to difference in structure of **amino acid** sequence.
 - ▷ Also, A1 evolved from A2 through **natural mutation**.
- ▶ **Regular milk** contains both A1 and A2 beta-casein, while **A2 milk** is unique in that it contains only the A2 variant.
- ▶ Studies of the **National Bureau of Animal Genetic Resources (NBAGR)** have confirmed that **indigenous cows and buffaloes** produce **A2 milk**.

BRIEF BACKGROUND

About Proteins

- ▶ Proteins are the main **structural constituents of the cells and tissues of the body**. Muscles and organs are largely made of proteins.
- ▶ These are large molecules made of **amino acids**. It is of two types-
 - ▷ **Essential amino acids**: Cannot be made by the body. As a result, they must come from food.
 - ▷ **Nonessential amino acids**: Can be synthesized in the body.

Comparison between A1 and A2 Milk

Parameters	A1 Milk	A2 Milk
 Nutrition	» Higher fat content and calorie count.	» Higher protein content.
 Health benefits	» Contains histidine (essential amino acids). <ul style="list-style-type: none"> ▶ Histidine is used by body to produce histamine (enables the body to regulate its reaction to inflammation and allergies). » As per studies, A1 milk cannot be digested well by some people and A2 is a better alternative for them.	» Contains proline (a non-essential amino acid). <ul style="list-style-type: none"> ▶ It is an essential component of collagen and important for proper functioning of joints and tendons.

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7.2. IT AND COMPUTER

7.2.1. Quantum Science and Technology



CONTEXT

UN designated 2025 to be International Year of Quantum Science and Technology.

ANALYSIS



About Quantum mechanics and its key applications

- ▮ Explains how extremely small objects simultaneously have the characteristics of both **particles** (tiny pieces of matter) and **waves** (a disturbance or variation that transfers energy).
 - ▷ German physicist **Werner Heisenberg** published a famous paper in 1925, which led to the discovery of phenomena called **quantum mechanics**.

Key Applications

- ▮ **Quantum Computing & Simulations:**
 - ▷ **In Health care & well-being**, Quantum photonics is improving medical imaging and diagnosis, while quantum chemistry aids in developing new vaccines and drugs.
 - ▷ **Quantum computing** along with AI can **process vast amounts of data** and perform complex calculations rapidly.
 - ▷ **Optimisation in Logistics and Supply Chain** through route planning and inventory management.
- ▮ **Quantum Communications:** Includes **post-quantum cryptography** (or quantum-proof cryptography) and **Quantum key distribution (QKD)**.
 - ▷ **QKD** uses a series of photons to transmit a secret, random sequence known as the key.
- ▮ **Quantum Sensing & Metrology:** Uses particles like **photons** and **electrons** as sensitive sensors in technologies for measuring forces, gravitation, and electric fields.
- ▮ **Quantum Material & Devices:** Design and synthesis of quantum materials such as superconductors, novel semiconductor structures, and topological materials for the fabrication of quantum devices.

BRIEF BACKGROUND

India's Initiatives in the field of Quantum Technology

- ▮ **National Quantum Mission (2023):** Aims to seed, nurture, and scale up R&D and create a vibrant ecosystem in Quantum Technology.
- ▮ **Quantum Enabled Science & Technology (QuEST):** A research program to build quantum capabilities.
- ▮ **Other initiatives:**
 - ▷ **National Mission on Quantum Technologies & Applications (NMQTA).**
 - ▷ **Quantum Computing Applications Lab (QCAL).**
 - ▷ **Quantum Frontier mission** of Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC).

Challenges in development and adoption of Quantum Technology in India

- ▮ **Regulation:** Need of establishing standards and protocols for hardware, software, and communication interfaces.
- ▮ **Availability of Infrastructure:** Building and maintaining sophisticated labs, etc.
- ▮ **Scalability:** Scaling up quantum computers to hundreds or thousands of qubits while maintaining high levels of coherence and low error rates.
- ▮ **Maintaining Colder Environments and Error Correction:** Quantum computers require cold environments because they rely on delicate objects called quantum bits, or qubits.
 - ▷ Most qubits must be cooled to within a few thousandths of a degree of **absolute zero to eliminate thermal noise and vibrations**, which tend to destroy the information contained in the qubits.
- ▮ **Other challenges:**
 - ▷ There is a need for **new programming languages, compilers, and optimization tools** that can effectively utilize the power of quantum computers.
 - ▷ **Spending on R & D in India** remained about 0.64 % of GDP.
 - ◊ Also, India's **private sector** lags behind advanced nations in R&D investment, **contributing less than 40% compared to over 70% in developed countries**.

Conclusion

Quantum Science and Technology is in its initial phase of development it can be promoted on large scale by developing adequate infrastructure, establishing regulatory body etc.

7.2.2. Facial Recognition Technology



CONTEXT

NITI Aayog released White Paper: Responsible AI for All (RAI) on Facial Recognition Technology (FRT).

ANALYSIS



About Facial Recognition Technology (FRT)

- ▶ An AI system which allows **identification or verification of a person based on certain images or video data** using complex algorithms.
- ▶ FRT can be used for two purposes:
 - ▷ **1: 1 verification of identity:** Facial map is obtained for the purpose of matching it against the person's photograph on a database. E.g. 1:1 is used to unlock phones.
 - ▷ **1: n identification of Identity:** Verification against the entire database to identify the person in the photograph or video. E.g. 1: n is used for mass monitoring and surveillance.

Applications and use-cases of FRT

- ▶ **Security related Uses**
 - ▷ **Law and order enforcement:**
 - ◊ Identification of Persons of Interest. E.g., Uttar Pradesh's 'Trinetra' for real-time identification of criminals.
 - ◊ Monitoring and surveillance. E.g., China's Skynet Project.
 - ◊ Immigration and border management. E.g., Canada's 'Faces on the Move'.
 - ▷ **Crowd Control:** E.g., Pan Tilt and Zoom Surveillance Cameras used in Prayagraj, Uttar Pradesh.
- ▶ **Non-Security related Uses**
 - ▷ **Verification and authentication of individual identity** for access to products, services, and public benefits using biometrics. E.g., Using Aadhar Card for Authentication based on Facial Recognition.
 - ▷ **Ease of access to services.** E.g., contactless onboarding at airports through Digi Yatra.
 - ▷ **Ease in usability** such as unique IDs in educational institutions, etc. E.g., Central Board for Secondary Education's 'Face Matching Technology Educational'.

What are the risks associated with FRT systems?

- ▶ **Inaccuracies:** It may occur due to-
 - ▷ **Automation bias and underrepresentation** in databases.
 - ▷ **Technical factors-** Includes intrinsic factors like facial expression, plastic surgery etc. and extrinsic factors like illumination, pose variation, etc.
 - ▷ **Glitches or perturbations**
- ▶ **Concerns regarding Accountability, legal liability and grievance redressal:** due to complexity in computational algorithms.
- ▶ **Rights-based issues:** Supreme Court in Justice K Puttaswamy v. Union of India (2017) has recognised the **right to privacy** within Article 21. FRT systems may violate these rights due to-
 - ▷ Use of personal data like Biometric facial images in manners contrary to or in addition to its stated purpose.
 - ▷ **Data leaks and unauthorized access of personal data.**
 - ▷ **Lack of meaningful consent** (E.g. Making facial recognition mandatory for access to public services).
 - ▷ Use of FRT by private security firms can potentially lead to excessive and potentially unjustified surveillance activities.

How does FRT work?	
1. Capturing and scanning	Facial detection relies on algorithms to detect presence of human face.
2. Extracting Facial Data	Facial extraction uses mathematical representations to identify distinctive features on individual faces.
3. Comparing database	Facial recognition involves automatic cross-referencing of a person's facial features with pre-existing database.
4. Matching and Identifying	

Way Forward: Recommendations of NITI Aayog for responsible use of FRT

- ▶ **Principle of Privacy and Security:** Establish data protection regime fulfilling a three-pronged test of legality, reasonability and proportionality set by the Supreme Court in the Puttaswamy judgement.
 - ▷ E.g., Digital Personal Data Protection (DPDP) Act 2023.
- ▶ **Adopting Privacy by design (PBD) principles:** such as collection of user's explicit consent.
- ▶ **Principles of accountability:** Address issues pertaining to transparency, algorithmic accountability and AI biases to secure public trust.
 - ▷ Also, establish an accessible grievance redressal system for any FRT related issues.
- ▶ **Ensuring Safety and Reliability:** Publishing standards of FRT related to explainability, bias and errors.
- ▶ **Principle of protection and reinforcement of positive human values:** Constitute ethical committee to assess ethical implications and oversee mitigation measures.

7.2.3. Li-Fi Technology



CONTEXT

MoD funded a start-up under the **Innovations for Defence Excellence (iDEX)** will secure Li-Fi technology for the Indian Defence sector, particularly focusing on the Navy.

ANALYSIS



About Li-Fi (Light Fidelity) Technology

- ▶ A **bidirectional** wireless system that uses **visible light** (400-800 Terahertz) for communication, unlike **Wi-Fi** which uses **radio waves**.
 - ▷ Transmits data with the help of **Light Emitting Diode (LED)**.
- ▶ **Working:**
 - ▷ On/off activity of the **LED transmitter** enables data transmission in accordance with the **incoming binary codes** (switching ON is a logical '1', switching it OFF is a logical '0').
- ▶ **Applications:** Aircrafts, hospitals (operation theatres), power plants etc., where electromagnetic (Radio) interference creates security issues.

Advantage of Li-Fi over Wi-Fi

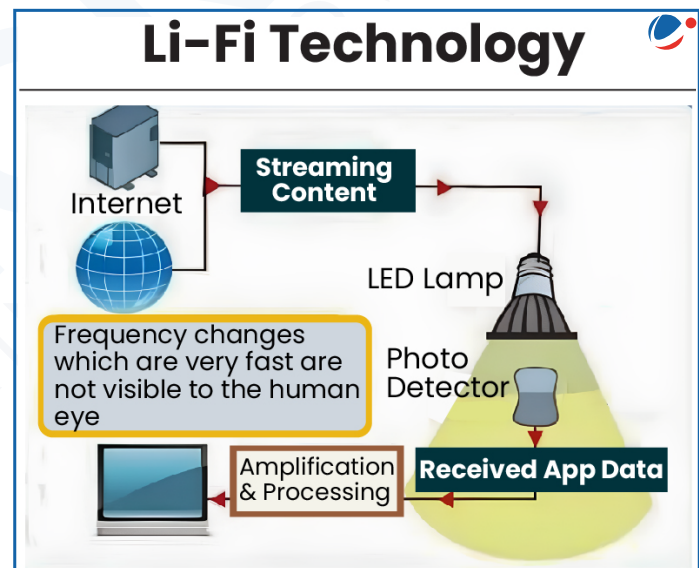
- ▶ **Faster:** Combination of low interference, high bandwidths provide high data rate.
- ▶ **Cheaper and sustainable:** It is up to 10 times cheaper than Wi-Fi, requires fewer components and uses less energy.
- ▶ **Secure:** Since light does not pass through walls like radio waves do, it prevents interception.

Disadvantages

- ▶ **Much shorter range** than Wi-Fi
- ▶ **Can't be accessed** beyond the **illumination range** of light, etc.

Conclusion

Li-Fi Technology will play key role in promoting communication. Facilitating adequate funding, infrastructure, etc. will help in deployment of technology.



7.3. SPACE TECHNOLOGY

7.3.1. Outer Space Governance



CONTEXT

Armenia has joined as the 43rd signatory nation to Artemis Accords for lunar exploration; this Accord is pivotal for improving Space Governance Framework.

ANALYSIS



Existing Outer Space Governance Framework

- ▶ In 1958, the United Nations General Assembly (UNGA) established the Committee on the Peaceful Uses of Outer Space (UN COPUOS) to govern the exploration and use of space.
 - ▷ UN COPUOS has been supported in its work by the United Nations Office for Outer Space Affairs (UNOOSA).
- ▶ **Key International Space Treaties:**
 - ▷ **Outer Space Treaty 1967:** Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space.
 - ▷ **Rescue Agreement 1968:** Agreement on the Rescue of Astronauts, the return of astronauts, and the return of objects launched into Outer Space.
 - ▷ **Liability Convention 1972:** Convention on International Liability for Damage Caused by Space Objects.
 - ▷ **Registration Convention 1976:** Convention on Registration of Objects Launched into Outer Space.
 - ▷ **Moon Agreement 1979:** Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.
- ▶ India is a signatory to all five of these treaties but has ratified only four. India has not ratified the Moon agreement.

BRIEF BACKGROUND

About Artemis Accords

- ▶ **Established:** in 2020 by NASA, in coordination with the US Department of State, together with seven other founding member nations (Australia, Canada, Italy, Japan, Luxembourg, UAE, and UK).
 - ▷ Grounded in the Outer Space Treaty of 1967 and other agreements.
- ▶ **Objective:** Sets common non-binding principles to govern civil exploration and use of outer space, the moon, etc. for peaceful purposes.
- ▶ India is also a signatory to this Accord.

Need for Reform in Outer Space Governance

- ▶ **Space debris:** According to ESA estimates, there are 130 million space debris objects from greater than 1 mm to 1 cm.
 - ▷ There is no international mechanism or body to monitor space debris or facilitate its removal.
- ▶ **Resource activities:** There is not an agreed international framework on space resource exploration, exploitation, and utilization.
 - ▷ Space mining will be one of the major focus areas of commercial space activity.
- ▶ **Space traffic coordination:** At present, national and regional entities coordinate space traffic with different sets of standards, best practices, etc.
- ▶ **Prevention of conflict in outer space:** Additional normative frameworks are needed to prevent any extension of armed conflict into outer space and to prevent the weaponization of outer space.

Way Forward

United Nations in its policy brief document titled 'For All Humanity – the Future of Outer Space Governance' recommended:

- ▶ **New treaty for peace and security:** to ensure peace, security, and the prevention of an arms race in outer space.
- ▶ **Space debris removal:** Develop norms and principles for space debris removal that takes into account the legal and scientific aspects of space debris removal.
- ▶ **Space traffic management framework:** for the coordination of space situational awareness, space object maneuvers, etc.
- ▶ **Space resource activities:** Develop an effective framework for sustainable exploration, exploitation, and utilization of the Moon and other celestial bodies.

7.3.2. National Space Day



CONTEXT

India celebrated its Maiden National Space Day (NSD) on 23rd August, 2024.

ANALYSIS



India's Space Saga

- ▶ **Aryabhata** was India's first satellite, launched in 1975, carried scientific instruments to study the Earth's atmosphere and radiation belts.
- ▶ The space agency has executed **123** spacecraft missions and **95** launch missions (as of January 2024).
- ▶ India is the **8th largest space economy** (in terms of funding) in the world.

How has ISRO achieved so many achievements despite having less resources?

- ▶ **Visionary leader:** **Vikram Sarabhai** also known as the "Father of Indian Space Program" laid the foundation of ISRO.
 - ▷ He emphasised on **bottom-up approach** to larger initiatives.
- ▶ **Cost Effective Missions:** More than 30% of the sub-systems that went into Chandrayaan-1 were used in other operations.
- ▶ **Indigenous Technology Development:** ISRO has reduced imports and tried to indigenise critical components as much as possible. E.g. Polar Satellite Launch Vehicle (PSLV).
- ▶ **Partnerships and Collaboration:** Aryabhata was launched by Soviet Kosmos-3M rocket.
 - ▷ **Recent examples:** NASA-ISRO SAR Mission (NISAR), etc.
- ▶ **Engaging Private Players:** E.g. Many products of Chandrayaan-3 were supplied by local industry.

Why is India, being a developing country, investing in space missions?

- ▶ **National Security through Self-reliance:** E.g., **NavIC (Navigation with Indian Constellation)**.
 - ▷ It will reduce dependence over **US's Global Positioning System (GPS)**.
 - ▷ Robust satellite system for **monitoring borders, tracking military movements, and gathering intelligence**.
- ▶ **Socio-economic Benefits:** India has developed its satellite capabilities for **mapping and surveying crops** and damage from **natural disasters and erosion**.
- ▶ **Space Diplomacy:** E.g., South Asia Satellite Project.
- ▶ **Scientific research:** **Chandrayaan-3** performed experiments using the instruments on **Vikram and Pragyaan**.
- ▶ **Revenue Generation:** Indian space sector generated \$ 60 billion revenue in the last ten years (2014-2023) against an investment of \$ 13 billion.

Conclusion

The success of ISRO has set up an example in front other countries as well as well as for different organisations in India that team effort and planning will yield results in positive way. Indian Space Policy-2023 will facilitate further integration of Private sector, paving path for new milestone.

BRIEF BACKGROUND

About National Space Day

- ▶ Chandrayaan-3 mission accomplished safe and soft-landing of **Vikram Lander** on the lunar surface on August 23, 2023.
 - ▷ With this, India became the **fourth country to land** on the moon and **first** to land near the **southern polar region** of the moon.
- ▶ The soft-landing was followed by successful deployment of **Pragyan Rover**.
- ▶ The landing site was named as '**Shiv Shakti**' point (Statio Shiv Shakti).

Key Future Missions

Mission	Detail/Objective
Chandrayaan-4	Bring rock and soil samples back to the Earth.
Venus Orbiter Mission (Shukrayaan)	An orbiter mission to study the atmosphere of Venus.
Mars Orbiter Mission 2 (Mangalyaan 2)	India's second interplanetary mission to Mars.
Lunar Polar Exploration Mission	A collaborative mission with JAXA to explore the Moon's South Pole region.
Bharatiya Antariksha Station (2028-2035)	A planned space station.

7.3.3. Planetary Defence



CONTEXT

At an international workshop on Asteroid Day 2024, ISRO Chairperson said that ISRO is looking to study **asteroid Apophis** when it is **32,000 km away from Earth in 2029** to prepare for planetary defense efforts.

ANALYSIS



Planetary Defense

- ▶ Refers to **efforts and strategies aimed at protecting Earth from potential impacts by NEOs** such as asteroids and comets.
 - ▷ It involves **multiple strategies** including detection, tracking, impact assessment, deflection, etc.
- ▶ **Need of Planetary Defense:** If **NEOs path intersects with that of Earth's orbit**, then depending on their size, speed, angle and impact region, could threaten billions of lives on impact and in the ensuing tsunamis, earthquakes and fires.

About Asteroid Apophis

- ▶ **Discovered in 2004**, it is a **near-Earth object (NEO)** and was identified as one of the most hazardous asteroids that could impact Earth.
 - ▷ There are billions of comets and asteroids in our solar system. The vast majority never approach Earth. When a **comet or asteroid's orbit brings it close to Earth, it is classified NEO.**
- ▶ However, a radar observation campaign in March 2021, combined with precise orbit analysis, allowed astronomers to conclude that there is **no risk of Apophis impacting our planet for at least a century.**

7.3.4. TRISHNA: Indo-French Thermal Imaging Mission



CONTEXT

ISRO recently provided the details of the **Thermal Infrared Imaging Satellite for High-resolution Natural Resource Assessment (TRISHNA)** mission.

ANALYSIS



About TRISHNA Mission

- ▶ Collaborative endeavour between ISRO and CNES (French Space Agency) to monitor surface temperature and water management at **regional to global scale.**
- ▶ **Objective:** Detailed **monitoring of energy and water budgets of continental biosphere** for quantifying terrestrial water stress and water use and high-resolution observation of water quality and dynamics.
 - ▷ It will also help in a **comprehensive assessment of urban heat islands**, detection of **thermal anomalies** linked to volcanic activity and geothermal resources, etc.
- ▶ **2 Primary payloads**
 - ▷ Thermal Infra-Red (TIR) payload
 - ▷ Visible – Near Infra-Red – Short Wave Infra-Red (VNIR-SWIR) payload
- ▶ It will operate in a **Sun-synchronous (SSO) orbit** and is designed for a **5-year operational life.**
 - ▷ SSO is a **particular kind of polar orbit** in which satellites are synchronized to always be in the same position relative to the Sun.
- ▶ **Significance:** **Climate monitoring** such as droughts, permafrost changes, and evapotranspiration rates; better urban planning with detailed urban heat island maps and heat alerts; etc.

BRIEF BACKGROUND

India's international Space Cooperation

- ▶ **India-France:** Strategic Space Dialogues, signed Letter of Intent on Defense Space Cooperation, space exchanges and defense space industrial cooperation, etc.
- ▶ **India-US:** Bilateral space situational awareness arrangement (2022), NASA-ISRO Synthetic Aperture Radar (NISAR) Mission, etc.
- ▶ **Others:** Lunar Polar Exploration (LUPEX) Mission between India and Japan, South Asia Satellite (SAS) to boost communication and improve disaster links among India's 6 neighbors, etc.

7.4. HEALTH

7.4.1. Trans-fat Elimination



CONTEXT

World Health Organisation (WHO) has published the fifth milestone report on progress towards global trans-fat elimination, covering the period from 2018–2023.

ANALYSIS



Key Finding of the report

- ▶ A total of **53 countries had best practices** and policies in place for tackling industrial trans-fat (as of 2023).
- ▶ It has vastly improved the food environment for 3.7 billion people, or **46% (it was only 6% in 2018)** of the world's population.

About Trans-fat (or Trans-fatty acids (TFA))

- ▶ Trans fats are **unsaturated fatty acids** which have been partially saturated with hydrogen.
 - ▷ They are considered as the worst type of fats (bad fat).
- ▶ **Types:**
 - ▷ **Natural:** Also called ruminant **trans fats** (present in small quantities in meat and dairy products). These are not generally considered harmful.
 - ▷ **Artificial:** Also called industrial produced trans-fat (formed in an industrial process that adds **hydrogen** to **vegetable oil**, converting the liquid into a solid and resulting in **partially hydrogenated oil (PHO)**).
- ▶ **Trans fat concentrations** in PHO is about 25–45%.
- ▶ Mainly used in **processed foods** and has **no nutritional benefits**.
- ▶ **Health Impacts:**
 - ▷ **Raises the level of the bad cholesterol** [Very low-density lipoprotein (VLDL) and low-density lipoprotein-cholesterol (LDL-c)] and **lowers the good cholesterol**.
 - ▷ Bad cholesterol can **build up in the walls of arteries, making them hard and narrow**, it increases the risk of heart attack or stroke.

Challenges in Eliminating Trans fat

- ▶ **High demand:** Extensively used in the food industry due to their **long shelf life** and desirable texture they impart to food products.
- ▶ **Poor enforcement of policies:** Many countries have not yet adopted a best-practices elimination policy.
- ▶ **Consumer preferences:** Growing inclination towards processed food.

Way Forward

The report recommends following ways to **eliminate Trans-fat**:

- ▶ **Policies/Framework:** All countries shall **enact best practice policies**.
 - ▷ Sub-regional bodies must pass **mandatory trans-fat elimination policies**.

BRIEF BACKGROUND

About Fats

- ▶ Building blocks of fat are **Fatty acids**, long chains of carbon and hydrogen atoms.
 - ▷ Essential fatty acids are those needed by the human body that can only be obtained through food.
- ▶ **Types:**
 - ▷ **Unsaturated fats** (good fats): Found in **nuts, avocados and other vegetables**.
 - ◊ There are two types of unsaturated fats: monounsaturated and polyunsaturated.
 - ▷ **Saturated Fats:** Found mostly in animal products. It is recommended that people reduce their, consumption of saturated fats in order to stay healthy.

Steps taken to regulate Trans fat India

- ▶ Initiative taken by the **Food Safety and Standards Authority of India (FSSAI)**
 - ▷ **Trans fat free logo – Voluntary labeling**
 - ▷ **Eat Right India Movement**
 - ▷ Amount of TFA in oils and fats was capped at 2% by 2022

Global

- ▶ **REPLACE action framework by WHO (2018):** Provides a strategic approach to eliminating industrially produced trans-fat.
- ▶ **WHO Validation Programme** for Trans Fat Elimination to further drive policy progress.

- ▶ **Enforcing Regulations:** Food manufacturers must comply with regulations to increase the use of healthier, alternative fats.
 - ▷ PHO in foods can be replaced by oils rich in **polyunsaturated fatty acids (PUFA)**, followed by oils rich in **monounsaturated fatty-acids (MUFA)**. E.g. safflower, corn, sunflower, etc.
- ▶ **Awareness and nudge:** E.g., warnings and images used in cigarette packets.

7.4.2. Neglected Tropical Diseases (NTDs)



CONTEXT

World Health Organization has recently published report titled **Global report on Neglected Tropical Diseases 2024**.

ANALYSIS



Neglected Tropical Diseases (NTDs)

- ▶ NTDs are a diverse group of **conditions** mainly prevalent in tropical areas.
- ▶ **Agents:** Pathogens including **viruses, bacteria, parasites, fungi** and **toxins**.
- ▶ Called **Neglected** because they are almost absent from the global health agenda, Low global funding and associated with stigma and social exclusion.
- ▶ **India** has the world's largest **absolute burden of at least 10 major NTDs** such as hookworm, dengue, lymphatic filariasis, leprosy, etc.
 - ▷ About **40% of people** requiring interventions against NTDs.
 - ▷ WHO certified **India as free of Guinea Worm disease (2000), Yaws (2016) and Trachoma (2024)**.

Why eliminating NTDs is important?

- ▶ **Affecting large Population:** As per WHO, NTDs impact over 1 billion people globally, with 1.6 billion needing preventive or curative interventions.
 - ▷ 80% of the disease burden concentrated in low- and middle-income countries.
- ▶ **Socioeconomic Impact:** Eliminating NTDs by 2030 would save affected individuals over **\$342 billion in healthcare costs and productivity losses** (WHO).
- ▶ **Affecting Gender Equality:** Impact women's economic productivity due to health complications such as pregnancy-related complications, anaemia, etc.
 - ▷ For E.g. Female genital schistosomiasis affects an estimated 56 million women.

Challenges in handling NTDs

- ▶ **Knowledge gaps** hinder development of better diagnostics, treatments, and vaccines.
- ▶ **Limited surveillance and detection capabilities** lead to underdiagnosis and underreporting.
- ▶ **Unpredictable funding disrupts** medicine distribution, hindering demand forecasting and supply planning.
- ▶ **Rising temperatures and changing weather patterns** are altering the spread of vector-borne diseases (WHO).

Way Forward

- ▶ **Key recommendations given in Report**
 - ▷ **Accelerate programmatic action (Pillar 1):** Reduce incidence, prevalence, morbidity, disability, and death
 - ▷ **Intensify cross-cutting approaches (Pillar 2):** by integrating interventions, mainstream services, etc.
- ▶ **Integrating NTDs into the Broader Global Health Landscape:** by building links with other global programmes (e.g. health emergencies), crosscutting approaches (e.g. One Health), emerging global priorities (e.g. climate change).

BRIEF BACKGROUND

About Global report on Neglected Tropical Diseases 2024

- ▶ In 2022, 1.62 billion people required interventions against NTDs, a **26% decrease from 2010**.
- ▶ The number of deaths related to vector borne diseases **increased by 22% in 2022** compared with 2016.

Steps Taken

Global

- ▶ **Global NTD Annual Reporting Form (GNARF)**
- ▶ **Global vector control response (GVCR), 2017–2030**
- ▶ **Others:** Kigali declaration on NTDs (2022); etc.

India

- ▶ **National Vector Borne Diseases Control Programme (NVBDCP):** For prevention and control of vector borne diseases namely Malaria, Japanese Encephalitis, etc.
- ▶ **Others:**
 - ▷ Vector-control measures such as Indoor Residual Spraying rounds;
 - ▷ Wage compensation schemes by State and central governments to Kala-Azar patients, etc.

- ▶ **Strengthen Regional Partnerships:** such as South-East Asia Region which bears the highest burden of dog-mediated human rabies in the world.
- ▶ **Holistic multi-sectoral actions:** such as veterinary public health, better water and sanitation, expanded vaccines, food safety, vector control, and effective communication.

7.4.3. Monkeypox



CONTEXT

WHO declared Monkeypox outbreak a Public Health Emergency of International Concern (PHEIC) on the recommendation of **International Health Regulations (IHR) Emergency Committee.**

ANALYSIS



About Mpox

- ▶ **Viral illness** caused by **monkeypox virus**, a species of genus Orthopoxvirus.
- ▶ **First detected** in humans in **1970** in **DRC.**
- ▶ **Spreads via close contact** and tends to cause flu-like symptoms and pus-filled skin lesion.
- ▶ Occurs mostly in **central and western Africa, and affected primarily (but not only) gay, bisexual etc.**
- ▶ **Vaccines and therapeutics developed for smallpox** and approved for use in some countries can be used for mpox in some circumstances.

About PHEIC

- ▶ **As per IHR (2005), an outbreak qualifies as a PHEIC** if it is **unusual or unexpected;** it has **potential for international spread;** and may **require an immediate international action.**
 - ▷ **IHR, 2005** is a **binding international legal agreement** involving 196 countries across globe, including all Member States of WHO.
- ▶ PHEIC represents the **highest level of alert issued by WHO** under IHR.
 - ▷ Since 2009, **WHO has declared seven international public health emergencies,** including H1N1 influenza pandemic, polio outbreak, Ebola outbreak (West Africa), Zika epidemic, Ebola outbreak (Congo), COVID-19 and Mpox.

BRIEF BACKGROUND

About IHR

- ▶ Successor of the **International Sanitary Regulations (1951).**
- ▶ **Aim:** An overarching **legally binding framework** that defines countries' **rights and obligations** in handling public health events and emergencies that have the potential to cross borders.
- ▶ **Members:** Comprises all 194 WHO Member States plus **Liechtenstein and the Holy See.**
- ▶ **Need of Amendments:** Experience of epidemics and pandemics, from Ebola to COVID-19, highlighted the need of better public health surveillance, response and preparedness mechanisms around the world.



7.5. MISCELLANEOUS

7.5.1. Directed Energy Weapons



CONTEXT

Recently, significant investments have been made by India in the field of Directed Energy Weapons.

ANALYSIS



About Directed Energy Weapons (DEWs)

- ▶ DEWs use concentrated energy from electromagnetic or particle technologies to incapacitate, damage, disable or destroy enemy equipment, facilities.
 - ▷ DEWs expand the range of electronic warfare (use of the electromagnetic spectrum).
- ▶ How do DEWs Work?
 - ▷ DEWs emit electromagnetic energy at the speed of light, using different regions of the electromagnetic spectrum to penetrate various materials based on their wavelength.
 - ▷ This enables them to disrupt or destroy targets effectively.
- ▶ Applications of DEWs
 - ▷ **Military Defense:** Intercept and destroys incoming missiles, neutralize drones, and disable enemy electronics.
 - ▷ **Law Enforcement and Border Security:** Non-lethal DEWs e.g. microwaves or lasers can be used for crowd control.
 - ▷ **Space Operations:** Protect satellites from debris and anti-satellite weapons.

BRIEF BACKGROUND

Examples of DEWs across the globe

- ▶ **USA:** HEL with Integrated Optical-Dazzler and Surveillance (HELIOS), etc.
- ▶ **United Kingdom:** DragonFire laser directed energy weapon (LDEW)
- ▶ **Israel:** 'Iron Beam', a laser-based interception system.

Steps taken by India for DEWs

- ▶ **Directionally Unrestricted Ray-Gun Array (DURGA)-II Project:** Initiated by DRDO.
- ▶ **2kW DEW System:** Developed by Bharat electronic limited for countering new threats like drones.
- ▶ **Laser Science and Technology Centre (LASTEC):** DRDO developing DEW, called project Tri-Netra.
- ▶ **Kilo Ampere Linear Injector (KALI):** Linear electron accelerator for targeting long-range missiles being developed by DRDO and the Bhabha Atomic Research Centre (BARC).

Types of Directed Energy Weapons

- ▶ **High Energy Lasers (HEL):** HELs with a power of 100 kW can engage smaller targets like Unmanned Aerial Systems (UAS), while 1 MW lasers could neutralize ballistic and hypersonic missiles.
- ▶ **High Power Microwaves (HPMs):** Emit high-frequency electromagnetic waves
- ▶ **Millimeter waves:** Use wavelengths between 1 and 10 millimeters. Applications include non-lethal military applications like crowd control.
- ▶ **Particle Beam Weapons:** Use accelerated particles (protons or electrons) to inflict damage.

Advantages of DEWs

- ▶ **Cost efficiency per shot:** E.g., Britain's DEW 'Dragon Fire' laser, is reportedly able to shoot down enemy aircrafts/missiles at a per-shot cost of less than £10.
- ▶ **Rapid response time:** Eliminates the need for calculating intercept courses as required for interceptor missiles.
- ▶ **Logistical efficiency:** Eliminate the need for traditional (physical) ammunition and mechanical loading.
- ▶ **Precision:** Light and other forms of directed energy are unaffected by gravity, wind, or Coriolis force.
- ▶ **Stealth:** Many DEWs operate silently and invisibly, especially those outside the visible spectrum.

Challenges of DEWs

- ▶ **Technological limitations:** Less effective when they are farther from the target.
 - ▷ Atmospheric conditions and cooling requirements can limit their effectiveness. E.g., fog and storms.
- ▶ **Battlefield use:** E.g., wider beam DEWs such as high-power microwave or millimeter wave weapons, affect all assets in an area, whether friend or foe.
- ▶ **Ethical and health concerns:** Uncertainty around DEWs' long-term health effects on people (either intentionally or

unintentionally).

- ▶ **Arms race:** Development of DEWs by one government can trigger an arms competition among other nations.
- ▶ **Other concerns:**
 - ▷ Currently, DEWs are **comparatively large and need substantial energy** for their operation.
 - ▷ **High costs** associated with the research and development of DEWs.

Conclusion

Given the persistent threat posed by its neighbours, particularly China and its vast technological prowess, India's defence needs to be prepared to deal with the inevitable threat posed by both autonomous and hypersonic weapons, with DEWs as a potential solution.

7.5.2. India's Ballistic Missile Defence Program



CONTEXT

Recently, DRDO successfully conducted flight-tests of the Phase-II Ballistic Missile Defence (BMD) System.

ANALYSIS



About Ballistic Missile Defence (BMD) Systems

- ▶ BMD systems seek to **defend against an aerial attack** like drones, fighter jets, and ballistic and cruise missiles by launching interceptors that would hit incoming missiles and destroy them on impact.
- ▶ Other Important Missile Defence systems of the world include **THAAD (USA), Iron Dome (Israel), etc.**

Evolution of India's BMD Program

- ▶ Program was **sanctioned in 2000** in the backdrop growing threats from China and Pakistan. It has 2 phases.
 - ▷ **Phase-I:** Designed to intercept missiles with a range of up to 2000 km.
 - ◊ It includes - **Prithvi Air Defence (PAD), Ashwin Advanced Air Defence (AAD), and Swordfish RADAR** (long-range tracking radar).
 - ▶ **Phase-II:** Capable to intercept missiles with range up to 5000 km. It consists of two missiles, **AD-1 and AD-2.**
 - ▷ **AD-1** designed for intercepting **both low exo-atmospheric and endo-atmospheric** long-range ballistic missiles as well as aircraft.
 - ▷ **AD-2 missile** is meant to intercept **intermediate-range ballistic missile targets** with a range between **3000-5500 km.**

BRIEF BACKGROUND

About Phase-II Air Defense Endo-atmospheric Missile

- ▶ It is an **indigenously developed 2-stage solid propelled ground launched missile system.**
- ▶ It is meant for neutralizing enemy ballistic missile threats in the **altitude bracket of endo to low exo-atmospheric regions.**

Difference between Cruise Missiles and Ballistic Missiles

- ▶ **Cruise Missile** is powered by jet engines while **ballistic missile is rocket powered.**
- ▶ **Former flies at relatively low altitudes**, while latter follows a ballistic trajectory, arcing upward into the atmosphere before descending to their target.
- ▶ Former use a **combination of GPS, inertial guidance and terrain- contour matching** for navigation.
- ▶ Former **carry smaller, single warheads (conventional or nuclear).**
- ▶ Former are **harder to detect but easier to intercept after detection. e.g., BrahMos missiles.**

Significance of BMD Program

- ▶ **Strategic:** Aligned with India's goal of **strategic autonomy in defense matters** and the vision of becoming **net-security provider** in the **Indo-Pacific.**
 - ▷ **e.g.,** Delay in delivery of the S-400 air-defence missile system.
- ▶ **Security:** Changing **security environment in the Indo-Pacific** and **simultaneous threats from two nuclear states.**
- ▶ **Technological:** An effective BMD system may also lead to advancements in other critical domains such as Radars and tracking systems, etc.
- ▶ **Diplomatic:** Influences India's relationship with major powers like the US, etc., and its role in global non-proliferation efforts.

Challenges/ Concerns with BMD Systems

- ▶ **Arms race:** BMD can encourage adversaries to develop technology to thwart BMD systems and restore mutual vulnerability.
- ▶ **Inter-operability and evolution:** Integrating the BMD capabilities with the existing military infrastructure.
 - ▷ Defense capabilities also need to evolve as per the **evolving advanced and unpredictable missiles capabilities from potential adversaries.**
- ▶ **Other:** High-cost, etc.

Conclusion

- ▶ India's development of BMD capabilities and projects like 'Project Kusha,' aimed at detecting and neutralizing aerial threats, significantly enhances its deterrence and defense modernization efforts.

7.5.3. DeepTech Startups in India



CONTEXT

'India's DeepTech Dawn: Forging Ahead' Report released by NASSCOM. Report highlights the different attributes of DeepTech startups.

ANALYSIS



About DeepTech Startups

- ▶ **DeepTech startups** leverage advanced technologies like AI, IoT, Blockchain, and Augmented Reality (AR)/Virtual Reality (VR) to create **novel solutions for complex problems, often combining multiple technologies to redefine or create new markets.** Ex: Agnikul, GalaxyEye, Sarvam AI
- ▶ Characterized by **extended development timelines, high capital intensity,** etc.
- ▶ **Key Potential Areas:** Promotes utilisation of **Deep Technologies** to reshape sectors like **healthcare** (AI-powered Diagnostics & Precision Medicine), **Agriculture** (Agribots & Automation), etc.

Key Challenges

- ▶ During the **pre-commercialization** phase, lacks access to the necessary infrastructure.
- ▶ Limited understanding of **business operations** and **market dynamics.**
- ▶ Competition from large enterprises for adequately skilled talent.

Way Forward

- ▶ Establish **co-investment programs** with venture capitalist for DeepTech startups.
- ▶ Facilitate platforms that connect enterprise with DeepTech startups.
- ▶ Launch DeepTech focused **skill development programs.**
- ▶ Provide grants/access to regulatory sandboxes to prototype and test.
- ▶ Provide **logistical support** for commercialization.

BRIEF BACKGROUND

Status of DeepTech Startups (as per Report)

- ▶ India ranked 6th among the top 9 DeepTech ecosystems in the world.
- ▶ India **currently has 3600+** DeepTech startups.
- ▶ Indian DeepTech startups have raised a **cumulative \$10 Bn** in the last **5 years (2018-2022).**
 - ▷ In 2023, witnessed 77% decline in funding (in comparison to 2022).

Initiatives taken

 Draft National Deep Tech Startup Policy (2023)	 Technology Incubation and Development of Entrepreneurs (TIDE 2.0)	 Startup India Seed Fund	 India AI Mission
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7.5.4. Daksha Project



CONTEXT

IIT Bombay leading the Daksha project in close collaboration with the Physical Research Laboratory (PRL), Tata Institute of Fundamental Research (TIFR), Raman Research Institute (RRI), etc.

ANALYSIS



About the Daksha Project

- ▶ An ambitious proposal to build two high-energy space telescopes for the study of explosive astrophysical sources.
 - ▷ Each telescope will be equipped with sensors to cover Low energy to high-range energy bands.
- ▶ Objectives:
 - ▷ Detect, localize and characterize high-energy counterparts to gravitational wave sources.
 - ▷ High sensitivity detection and studies of Gamma Ray Bursts (GRB).
 - ◇ GRB are short-lived bursts of gamma-ray light, the most energetic form of light.
- ▶ Significance of the project
 - ▷ The two satellites will orbit on opposite sides of earth to give better coverage than existing missions.
 - ▷ Helps in localizing the source of emission of intense gravitational waves due to neutron star mergers or other reasons.
 - ◇ Neutron stars are formed when a massive star runs out of fuel and collapses.
 - ▷ Primordial Black Holes (PBH) mass window could be probed for the first time.
 - ◇ PBH are a type of black hole formed in the first second after the birth of the universe.

BRIEF BACKGROUND

Other Gamma Ray Detection Mission

- ▶ **Astrosat:** India's multi-wavelength space observatory aimed at studying celestial sources in X-ray, optical, and UV spectral bands simultaneously.
- ▶ **Fermi Gamma-ray Space Telescope:** NASA's telescope observes gamma rays across a wide energy range.
- ▶ **NASA's Swift observatory:** Studies gamma-ray bursts.



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7.6. TEST YOUR LEARNING

MCQs

Q.1 With reference to the Genetically Modified mustard (GM mustard) developed in India, consider the following statements:

1. GM mustard has the genes of a soil bacterium that give the plant the property of pest-resistance to all variety of pests.
2. GM mustard has the genes that allow the plant cross-pollination and hybridization.
3. GM mustard has been developed jointly by the IARI and Punjab Agricultural University.

Which of the statements given above is/are correct?

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

Q.2 Quantum key distribution (QKD) involves the use of which of the following to transmit a secret key?

- (a) Electrons
- (b) Neutrons
- (c) Photons
- (d) Protons

Q.3 With reference to LiFi', recently in the news, which of the following statements is/are correct?

1. It uses light as the medium for high- speed data transmission.
2. It is a wireless technology and is several times faster than WiFi.

Select the correct answer using the code given below.

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

Q.4 Which of the following are security-related uses of Facial Recognition Technology (FRT)?

1. Identification of persons of interest.
2. Crowd control in large gatherings.
3. Contactless onboarding at airports.
4. Border management and immigration

Choose the correct answer

- a) Only one
- b) Only two
- c) Only three
- d) All four

Q.5. Which space agencies are collaborating on the TRISHNA mission?

- a) ISRO and CNES
- b) ISRO and JAXA
- c) ISRO and NASA
- d) ISRO and ESA

Questions

1. Bioeconomy can be a key driver of India’s economic growth, environmental sustainability, and employment generation.” Discuss in the context of the BioE3 Policy. (150 words).
2. Trans-fat elimination is critical for improving public health and reducing the global burden of cardiovascular diseases. Discuss the initiatives taken globally and in India to eliminate trans fats, and the challenges in implementing these measures. (250 words).

Current Affairs Quarterly Revision (June to August 2024)



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CULTURE



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8.1. ARCHITECTURE

8.1.1. Nalanda University



CONTEXT

Recently, the Prime Minister inaugurated the new campus of Nalanda University in Rajgir (Bihar).

ANALYSIS



Key Findings

- ▶ Modern Nalanda University is a 100 acre 'Net Zero Green Campus' with Kamal Sagar ponds, an on-grid solar plant, and advanced water treatment.

Academic Excellence and Curriculum of Nalanda

- ▶ University attracted scholars across the world.
- ▶ Strict merit-based admission through oral exams by gatekeepers; no degrees granted or fixed study duration.
- ▶ Schools of discourse and debate; earned the title 'Medieval School of Discussion and Logic.'
- ▶ Subjects: Vedas, Theravada, Mahayana, Vajrayana, fine arts, medicine, astronomy, politics, war strategy.
- ▶ Library: "Dharma Gunj" or "Mountain of Truth," holding over nine million books across nine floors.

Architectural Features of Nalanda

- ▶ Discoveries: Stupas, monasteries, lecture halls, hostels, meditation rooms, etc.
- ▶ Structure and Layout:
 - ▷ Built in Kushan style with cells around courtyards, along the north-south axis.
 - ▷ Viharas (residential-scholar buildings) and Chaityas (temples).
 - ▷ Introduced quincunxial (five-fold) form in chaityas, influencing regional temples.
- ▶ Architectural Significance:
 - ▷ Earliest planned university.
 - ▷ Influenced Buddhist art in Malayan archipelago, Nepal, Myanmar, and Tibet.
 - ▷ Enabled transition from Mahayana to Vajrayana Buddhism through its art.

Sculptural Art of Nalanda Mahavihara

- ▶ Origins: The sculptural art of Nalanda, crafted in stucco, stone, and bronze, evolved from the Buddhist Gupta art of Sarnath.
 - ▷ Depictions of crowned Buddhas occur commonly only after the tenth century.

Structure of Nalanda Mahavira



BRIEF BACKGROUND

About Ancient Nalanda University

- ▶ Oldest residential university in the world: Founded by Kumargupta I of the Gupta dynasty in 5th century CE.
- ▶ Patrons: King Harshavardhana of Kannauj (7th century CE), Pala rulers (8th – 12th century CE).
 - ▷ It is said that King Asoka gave offerings to the Chaitya of Sariputra at Nalanda and erected a temple there.
- ▶ Located near the ancient Nalanda ruins.
- ▶ Destroyed in 1205 AD by Turkish general Bakhtiyar Khalji under Qutbuddin Aibak.
- ▶ Rediscovered by Sir Francis Buchanan in the early 19th century.
- ▶ Important personalities
 - ▷ According to Pali Buddhist literature, Nalanda was visited by Buddha.
 - ▷ Sariputra and Moggallana, two of Buddha's chief disciples, hailed from the Nalanda region.
 - ▷ According to Jaina texts Mahavira Vardhamana spent as many as fourteen rainy seasons in Nalanda.
- ▶ Prominent Teachers

- ▶ **Synthesis:** By the ninth century, a blend of the **Sarnath Gupta idiom, local Bihar traditions, and Central Indian styles** led to the distinctive **Nalanda school of sculpture**.
 - ▷ Various brahmanical images not conforming to the Sarnath style have also been found at Nalanda.
- ▶ **Nalanda School of Sculpture**
 - ▷ **Stone:** Defined by precise **facial features, three-dimensional forms**, and delicate ornamentation.
 - ◊ Sculptures have detailed back slabs and minimal crowding.
 - ▶ **Metal:**
 - ▷ 7th to 12th centuries; part of the Pala Period.
 - ▷ Initially followed Gupta traditions from Sarnath and Mathura.
 - ▷ **Early phase:** Mahayana deities like Manjusri, Avalokiteshvara.
 - ▷ **Later phase:** Vajrayana deities such as Vajrasharada, Khasarpaṇa.

- ▷ **Aryabhata:** The renowned mathematician and inventor of zero, **studied and taught at Nalanda**.
- ▷ **Nagarjuna:** A Mahayana philosopher
- ▷ **Dinnaga:** Founder of the school of Logic
- ▷ **Dharmapala:** Brahmin scholar
- ▷ **Abhayakaragupta:** A renowned **tantric practitioner** was simultaneously abbot of the **Mahabodhi, Nalanda and Vikramashila monasteries**.
- ▷ **Naropa:** Belonged to the **tantric lineages of the Tibetan traditions**, and was **abbot of Nalanda** in the years 1049-57.
- ▶ **Foreign travellers:**
 - ▷ Scholars from **China, Korea, Japan, Tibet, Mongolia, Sri Lanka, and South East Asia**.
 - ▷ The Chinese scholars **I-Qing and Xuan Zang** visited Nalanda in the 7th century CE.
 - ◊ **Xuan Zang studied yogashastra** at Nalanda under **Chancellor Shilabhadra**, the highest authority in yoga.
- ▶ **Recognition:** The ruins of Nalanda were declared as a **UN World Heritage Site in 2016**.

Stucco Art of Nalanda Mahavira



Other Buddhist Centres of Learning

Takshila	<ul style="list-style-type: none"> ▶ Located in the Pakistan, discovered by Alexander Cunningham in the mid-19th century. ▶ Recognised as UNESCO World Heritage site in 1980. ▶ Noted pupils included grammarian, Panini (author of Ashtadhyayi), physician, Jivaka, and a skilled exponent of statecraft, Chanakya (author of Arthashastra)
Vikramshila	<ul style="list-style-type: none"> ▶ Located near Bhagalpur, Bihar, it was established by the King Dharmapala of Pala Dynasty. ▶ Atisha Dipankara (known for reviving Buddhism in Tibet) and Vasubandhu was alumnus of Vikramshila.
Odantipuri	<ul style="list-style-type: none"> ▶ Located in Bihar. ▶ Second oldest university in India. Odantapuri was established in the 8th century by the Pala ruler Gopal I. Many Tibetan scholars studied here.
Nagarjunakonda	<ul style="list-style-type: none"> ▶ Now located in Andhra Pradesh. ▶ Named after Nagarjuna, profounder of the doctrine of Sunyavada, who belonged to Mahayana Buddhism.
Others	<ul style="list-style-type: none"> ▶ Valabhi (Gujarat) ▶ Jagaddala (now in Bangladesh)

8.1.2. Assam's Charaideo Moidam



CONTEXT

Assam's Charaideo Moidam was officially inscribed on the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List.

ANALYSIS



About Charaideo's Moidams

- ▶ **Location:** In the foothills of the Patkai Ranges, eastern Assam.
- ▶ **Royal Necropolis:** Charaideo is home to the royal necropolis of the Tai-Ahom dynasty (13th–19th century CE) and are comparable the Egyptian Pyramids.
 - ▷ Moidam means 'Home for Spirit' and it symbolizes heaven- earth continuum.
 - ▷ **Buranjis**, a genre of historical chronicles from the Ahom dynasty, serve as **reliable sources on the Royal Necropolis landscape** and its spiritual elements.
- ▶ **Architectural Features:** Banyan trees and the trees used for coffins and bark manuscripts were planted and **water bodies were created near Moidams**. Each Moidam consists of:
 - ▷ An **earthen mound** (Ga-Moidam) topped by a **central shrine** (Chou Cha Li)
 - ▷ An **octagonal wall** (Garh) symbolizing the Tai universe
 - ▷ A **brick-and-stone vault** (Tak) with a grave pit (Garvha)
- ▶ **Protection Officers:** During Ahom's reign, Moidams were protected by special officers called **Moidam Phukans** and a guard group known as **Moidamiya**.
- ▶ **Insights in Afterlife Belief:** Moidams have **grave goods** such as food, horses, elephants, and sometimes even servants (**items they would require in their afterlife**).
- ▶ **Burial Practices:** During pre-17th century CE bodies were embalmed and entombed and later cremated ashes were buried.
 - ▷ This evolution in burial practices provides **critical evidence of the Tai-Ahoms' localization process over time**.
- ▶ **Cultural continuity:** Annual rituals such as **Me-Dam-Me-Phi** (ancestor worship) and Tarpan (libation ceremony) are **still performed**, maintaining a 600-year-old tradition.
- ▶ **Discovery:** The earliest sketch of the ground plan of a Moidam was published in the journal of the **Asiatic Society of Bengal**, in 1848 by **Sergeant C. Clayton**

Features that Make Charaideo's Moidams Exceptional

- ▶ **Well preserved:** While Moidams are found in other areas within the Brahmaputra Valley, those found at the Charaideo are regarded as exceptional and are well preserved.

BRIEF BACKGROUND

- ▶ The decision was taken during the **46th World Heritage Committee (WHC) session in Delhi**.
- ▶ Moidams (or Maidams) in Assam's Charaideo district were recommended for inclusion in the UNESCO World Heritage List under the cultural property category by International Council on Monuments and Sites (ICOMOS).
 - ▷ It is the **first time a site from the North East has made it to the UNESCO World Heritage List** under the Cultural Category.
- ▶ World Heritage Site status boosts awareness, enhances preservation efforts, and may attract financial and expert support for site conservation.
- ▶ India's total UNESCO World Heritage sites now stand at **43 with 3 being in Assam** (including Kaziranga National Park and Manas National Park).

Other Indian Initiatives at the 46th Session

- ▶ **For the first time** India hosted the meeting of WHC.
- ▶ India announced a **\$1 million grant for UNESCO** conservation efforts, especially in the Global South.
- ▶ India and the USA signed a Cultural Property Agreement (CPA) to prevent illegal trafficking and return artifacts.
- ▶ CPA aligns with the **1970 UNESCO Convention on preventing illicit trade in cultural property**.

About UNESCO World Heritage Committee

- ▶ **Genesis:** Established in 1972 under the World Heritage Convention during UNESCO's 17th session.
- ▶ **Objectives:** Known as the "Five Cs" – Credibility, Conservation, Capacity Building, Communication, and Communities.
- ▶ **Key Role:**
 - ▷ Makes final decisions on World Heritage List inscriptions.
 - ▷ Manages the World Heritage Fund and provides financial aid to State Parties.
 - ▷ Monitors conservation efforts of listed sites.
- ▶ **Members:** Includes 21 State Party representatives elected by the General Assembly for six-year terms. India was elected for the 2021–2025 term.
- ▶ **Key Partners:**
 - ▷ **ICCROM:** Promotes cultural heritage conservation.
 - ▷ **ICOMOS:** Works on preserving architectural and landscape heritage.

- ▶ **Advanced Engineering:** Moidams' **stable structure**, engineering of **the vault**, and use of **water to buffer seismic impact highlight** Ahom's engineering skills.
- ▶ **Cultural Transition:** With the influence of Hinduism, the Ahoms also started to cremate their dead. Yet, this burial system is still practised by the **priestly sections of the Ahoms** and the Royal bodyguards clan.

Other Burial Practices in India

Period/Practice	Features
Harappan Civilization	<ul style="list-style-type: none"> ▶ Presence of graves where dead bodies were generally placed in a north-south orientation on their back. ▶ A coffin burial has been found at Harappa. ▶ From Lothal some examples of pairs of skeletons of a male and a female in each case buried together have been found. ▶ Careful placement of bodies with ornaments and other objects is indicative of their belief in life after death.
Megalith	<ul style="list-style-type: none"> ▶ It involves a certain burial style having stone erect structures for dead. ▶ Their origin can be traced back to Neolithic-Chalcolithic period (such as urn burial from Chalcolithic site of Inamgaon, Maharashtra). ▶ However, most of south Indian megalithic sites show general association with iron. Hence, the period of megaliths is also referred as Iron Age. ▶ The belief on 'Death and Afterlife' is perceived through grave goods and pottery and other offerings. <ul style="list-style-type: none"> ▷ Hire Benkal, Megalith Site in Gangavati Taluka, Koppal District, Karnataka is under consideration under the tentative list of UNESCO.

8.1.3. Pilgrim Corridor Projects

CONTEXT

Union Budget 2024-25 announced that **corridor projects will be built for the Vishnupad Temple at Gaya and the Mahabodhi Temple at Bodh Gaya in Bihar.**

ANALYSIS

About Pilgrim Corridor Projects

These projects **renovate religious sites and connect nearby religious places**, transforming them into world-class pilgrimage and tourism destinations.

Some of the key features of these projects are:

- ▶ **Preservation and Restoration:** For example, the Kashi Vishwanath Corridor expanded the area around the temple and restored smaller temples including Sheela Mata Temple, Shri Ram Temple among others.
- ▶ **Development & Heritage Integration:** Example: Mahakal Lok Corridor features murals from 'Shiv Puran' and iconic gateways.
- ▶ **Enhanced Visitor Experience:** Includes decongestion, museums, ramps, restrooms, and crowd management.
- ▶ **Boost to Tourism and the Economy:** India earned over ₹2.3 lakh crore in foreign exchange from tourism, a 65.7% increase year-on-year (Economic Survey 2023-24).

BRIEF BACKGROUND

- ▶ The **Vishnupad and Mahabodhi Temples** are located about 10 km apart.
- ▶ The newly announced corridor project is inspired by the **Kashi Vishwanath Temple Corridor in Varanasi (UP)**
 - ▷ The foundation stone for the corridor, now also known as **Shri Kashi Vishwanath Dham**, was laid down in 2019.
 - ▷ It was conceptualised as a project to create an easily **accessible pathway to connect Shri Kashi Vishwanath Temple to the banks of the river Ganga**.

Challenges Associated with Pilgrim Corridor Development Projects

- ▶ **Rehabilitation Issues:** Example: Jagannath Heritage Corridor required land from five villages.
- ▶ **Demolition of Old Structures:** Example: Kashi Vishwanath Corridor raised concerns about ancient temples' demolition.
- ▶ **Sustainability Concerns:** Construction may cause deforestation, pollution, and rising carbon footprints.
- ▶ Also, large-scale tourism may see a rise in the carbon footprints of these places.

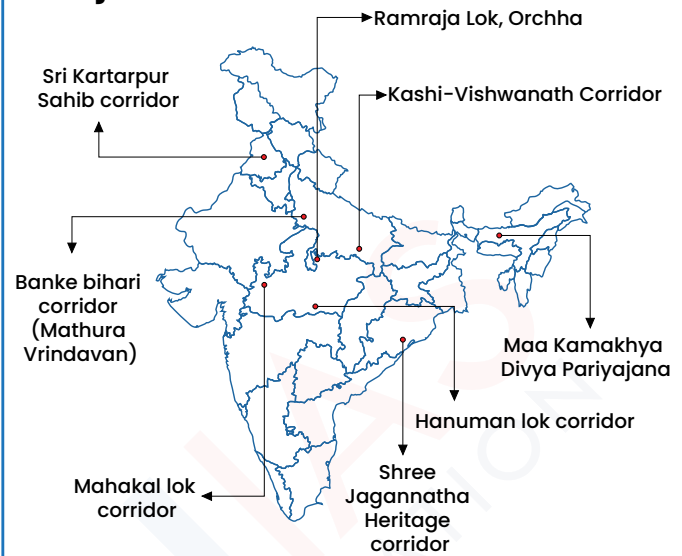
About Vishnupad Temple

- ▶ **Location:** Gaya, Bihar, on the banks of the Falgu River.
- ▶ **Dedicated to:** Lord Vishnu and is marked by his footprint, also known as Dharmasila, on a Basalt Rock.
 - ▷ **Footprint is marked by four symbols:** Conch-Shell (Shankha) Wheel (Chakra) Mace (Gada) Lotus (Padma)
 - ▷ According to Hindu mythology, this footprint marks where **Lord Vishnu subdued the demon Gayasur** by placing his foot on the demon's head.
 - ▷ **Mentioned in the Mahabharat and the Ramayana** (lord Rama performed pind-daan for his father).
- ▶ **Restoration:** The current structure was restored by Devi Ahilya Bai Holkar, ruler of Indore, in 1787.

Mahabodhi Temple Complex

- ▶ **Location:** Bodh Gaya, Bihar
- ▶ **Global recognition:** UNESCO World Heritage Site
- ▶ **Historical Background:**
 - ▷ First temple at this site was built by Emperor Asoka in the 3rd century B.C.
 - ▷ The current temple structure, dating back to the 5th or 6th century from the late Gupta period, is one of the oldest brick-built Buddhist temples.
- ▶ **Main Temple:**
 - ▷ The temple is built in the classical Indian temple architecture style with a **curvilinear shikhara (tower) topped by amalaka and kalasha.**
- ▶ However, the design of the temple is **neither Dravida nor Nagara.**
- ▶ Narrow like Nagara temple, but it rises without curving like a Dravida one.
 - ▷ It has **entrances from the east and the north.**
 - ▷ It has a **low basement with mouldings decorated with honeysuckle and geese design** and above this is a series of niches having images of Buddha.
- ▶ **Vajrasana (Diamond Throne):**
 - ▷ A polished sandstone platform marking the spot where Buddha sat and meditated.
 - ▷ It was originally installed by Emperor Asoka to mark the spot where Buddha sat and meditated.
- ▶ **Seven Sacred Sites**
 - ▷ **Sacred Bodhi Tree:** Located to the west of the temple, it is believed to be a direct descendant of the tree under which Buddha attained Enlightenment.
 - ▷ **Other Sacred Places:** Animeshlochan Chaitya (prayer hall), Ratnachakrama (Jewelled Ambulatory), Ratnagar Chaitya, Ajapala Nigrodh Tree (under which Buddha meditated during his Fifth Week, answering the queries of Brahmins), Lotus Pond, and Rajyatana Tree.

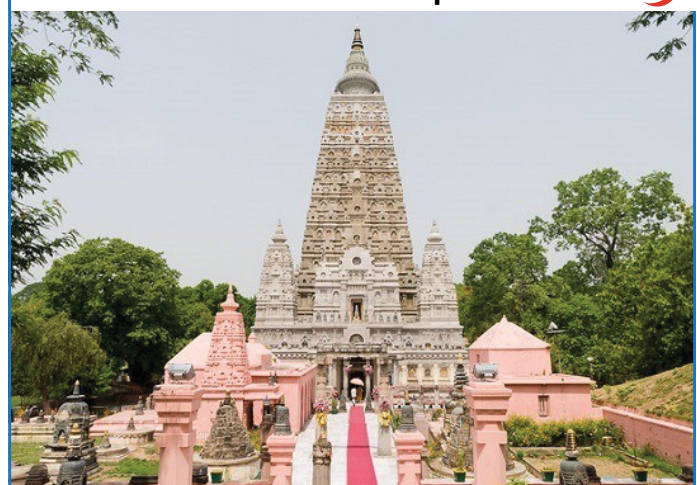
India's Major Pilgrim Corridor Projects



Vishnupad Temple



Mahabodhi Temple



- ▶ **Buddha himself mentioned four important places for the 'Dharma Yatra':** Lumbini, where Buddha was born; Bodhgaya, where he attained enlightenment; Sarnath, where he gave his first sermon; and Kushinagar, where he achieved Mahaparinirvana (final liberation).

Other Initiatives for Cultural and Heritage Conservation



PRASHAD Scheme: Focuses on developing and identifying pilgrimage sites across India for enriching the religious tourism experience.



HRIDAY Scheme: To bring together urban planning, economic growth and heritage conservation in an inclusive manner.



Swadesh Darshan Scheme: For the development of theme-based tourist circuits in the country.



Adopt a Heritage 2.0: To foster collaboration with corporate stakeholders for the preservation of monuments.



Parvatmala Pariyojana: To boost last-mile religious and tourist connectivity.



Kashi Tamil Sangamam: To celebrate, and rediscover the age-old links between Tamil Nadu and Kashi (ancient seats of learning).

Way Forward

- ▶ **Heritage Impact Assessments:** These would help address adverse impacts on neighbouring ancient structures, rituals related to them and communities associated with them.
- ▶ **Community Participation:** Involving the local community in planning ensures their interests are considered, reducing potential conflicts and easing land acquisition.
- ▶ **Sustainable Tourism:** These corridor projects should align with 'Travel for LiFE', a program under Mission LiFE.
 - ▶ Travel for LiFE has been envisaged to create awareness about sustainable tourism and to nudge the tourists and tourism businesses to adopt sustainable practices synchronous with nature.

8.1.4. Shree Jagannath Temple

CONTEXT

Ratna Bhandar, the sacred treasury of Shree Jagannath Temple, Puri reopened after 46 years.

ANALYSIS

About Ratna Bhandar

- ▶ Located on northern side of Jagamohana (assembly hall of temple).
- ▶ Comprises of Bahar Bhandar (outer chamber) and Bhitara Bhandar (inner chamber).
- ▶ These chambers contain jewels of three sibling deities — Lord Balabhadra, Lord Jagannath, and Devi Subhadra.
- ▶ Additionally, Magji Ladoo (Odisha's Dhenkanal district), one of the 'chappan bhog' prasada at Shree Jagannath Temple got Geographical Indication (GI) Tag.

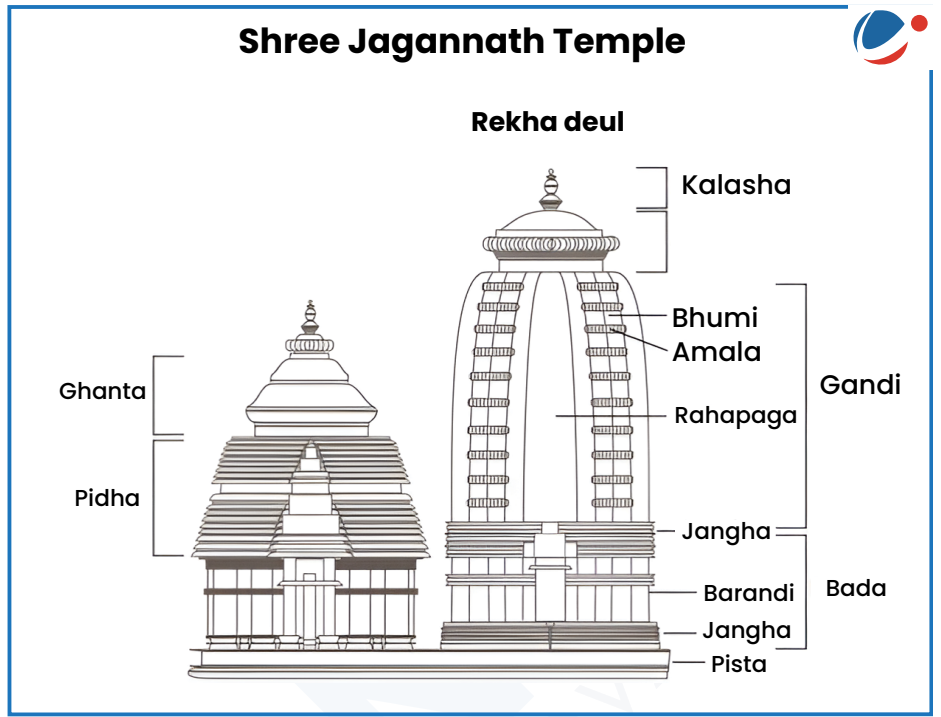
BRIEF BACKGROUND

Shree Jagannath Temple, Puri, Odisha (White Pagoda)

- ▶ Dedicated to Lord Jagannath (incarnation of Lord Vishnu), Sister Devi Subhadra and elder brother Lord Balabhadra (holy trinity).
- ▶ Built during rule of Anantavarman Chodaganga Deva, the founder of Ganga dynasty in first part of 12th century A.D.

Architectural style of Shree Jagannath Temple

- ▶ **Architecture style:** Kalinga Architecture
- ▶ Four component parts consisting of
 - ▷ **Vimana or Deula (Garbhagriha):** Built in style of nagara type Rekha deula characterized by curvilinear tower known as sikhara.
 - ▷ **Jagamohana:** It is in form of Pidha deula, in which sikhara has tiers of diminishing pidhas or platforms.
 - ▷ **Natamandapa:** Audience/Dancing Hall
 - ▷ **Bhogamandapa:** Hall for residuary offerings.
- ▶ On both sides of outer wall of main temple, figures of Vishnu, four on either side are carved which altogether depict 24 forms of Vishnus, like Keshava, Madhava, Damodara and Narayana etc.



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8.2. PERSONALITIES

8.2.1. Swami Vivekananda



CONTEXT

The Prime Minister recently visited the **Vivekananda Rock Memorial** and the **Tiruvalluvar statue** on the nearby rocks at **Kanyakumari (Tamil Nadu)**.

ANALYSIS



About Vivekananda Rock Memorial

- ▶ Built in 1970 and is believed to be at the place where **Swami Vivekananda meditated once**.
- ▶ It is surrounded by the **Laccadive Sea**, where the Bay of Bengal, the Indian Ocean, and the Arabian Sea converge.
- ▶ It is also believed to be the rock where **Goddess Kanyakumari prayed to Lord Shiva**.

Contributions and Legacy

- ▶ **Preached Vedant philosophy: Uttara Mimamsa** is called Vedānta. It incorporates Advaita system, Viśistādvaita system and the Dvaita system
- ▶ **World's Parliament of Religions at Chicago:** His address of 1893 gave him international recognition. He was hailed as an "orator by divine right" and a "Messenger of Indian wisdom to the Western world."
- ▶ **Established Ramakrishna Mission:** Established in 1897, the mission engages in various forms of **social service**, including running hospitals, schools, colleges, etc.
- ▶ **Promoting scientific temperament:** In 1893, on his way to Chicago, he met Jamsetji Tata and inspired him to establish **Indian Institute of Science (IISc)** which was founded in **Bangalore** in 1909.



BRIEF BACKGROUND

Swami Vivekananda (1863-1902)

Early Life:

- ▶ **Birth:** Swami Vivekananda, born Narendra Nath Datta on **January 12, 1863, in Kolkata**.
 - ▷ His birth anniversary is celebrated as **National Youth Day**.
- ▶ **Parents:** Vishwanath Datta and Bhuvaneshwari Devi
- ▶ **Spiritual Guru:** Sri Ramakrishna
- ▶ **Prominent disciple:** Margaret Noble (Sister Nivedita)

Swami Vivekananda



8.2.2. Devi Ahilyabai Holkar



CONTEXT

Recently, the 300th birth anniversary of Malwa queen Devi Ahilyabai Holkar was celebrated on May 31, 2024.

ANALYSIS



Key Contributions:

- ▶ **Temple Reconstruction:** **Somnath Temple** (dedicated to Lord Shiva) were rebuilt under her patronage.
 - ▷ **Kashi Vishvanath Temple** located at Varanasi (Uttar Pradesh) stands on the western bank of the holy river Ganga and is **one of the twelve Jyotirlinga**.
 - ▷ **Somnath temple**, located on the Gujarat coast along the Arabian Sea, is believed to be the **first jyotirlinga** (devotional shrine of Lord Shiva).
 - ◊ Raided by **Mahmud Ghazni** (1024), and attacked by **Delhi Sultanate** (1297 and 1394) and **Aurangzeb** (in 1706).
- ▶ **Patronized Arts:** She patronised Sanskrit scholar **Khushali Ram** and **Marathi poet Moropant and Shahir Anantaphandi**.
 - ▷ **Moropant:** He wrote 'Political commentary on Ramayana and Mahabharata', 'A number of Akhyanes based on puranas', 'Aryabhata' and 'Kekavati'.
 - ▷ **Shahir Anantaphandi:** He was known for composing **Lavani and Powadas**.
- ▶ **Social Development:** She worked for **women education, widow remarriage, and resisted evil practices like Sati and Untouchability**.
 - ▷ She also worked for **mainstreaming Bhil and Gond tribes** and lower castes.
- ▶ **Economic:** **Maheswar and Indore** became the **center of trade and commerce**. She also promoted the **Maheswari weaving industry**.
 - ▷ **Maheswar "Sarees & Fabric"** is registered as Handicraft goods in Geographical Indications (GI).

About Holkar Dynasty

- ▶ **Maratha Confederacy:** The Holkar Dynasty was a significant part of the Maratha Confederacy, an alliance of powerful Maratha clans. Other prominent members included: **Bhonsle of Nagpur Gaekwad of Baroda Sindhia of Gwalior**.
- ▶ **Third Anglo-Maratha War:** Malhar Rao II (1811 to 1833), who ruled the Holkar Dynasty played a pivotal role in the Third Anglo-Maratha War (1817-1819).
- ▶ After Malhar Rao II was **defeated in the battle of Mahidpur** the **Treaty of Mandsaur was signed in 1818** which henceforth governed relations between the Holkars and the British.

BRIEF BACKGROUND

About Devi Ahilyabai Holkar (1725 –1795)

- ▶ **Birth:** Born in Chondi village, Ahmednagar in 1725.
- ▶ **Father:** Mankoji Rao Shinde
- ▶ **Husband:** Khanderao Holkar
- ▶ **Father-in-Law:** Malhar Rao Holkar (founder of the Holkar dynasty)
 - ▷ He was officer of Peshwa Baji Rao and **posted in Malwa to collect 'Chouth' and 'Sardeshmukhi'**
- ▶ **Queen of Malwa:** Became ruler of Malwa after her husband's death (he was killed in **the battle of Kumbher in 1754**).
 - ▷ She had appointed **Tukoji Rao Holkar (adopted son of Malhar Rao Holkar)** as the commander of her army.
 - ▷ She established **Maheshwar** in Madhya Pradesh **as the seat of the Holkar dynasty**.

Devi Ahilyabai Holkar



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8.3. MISCELLANEOUS

8.3.1. Hindustan Republican Association (HRA)



CONTEXT

Uttar Pradesh inaugurated year-long celebrations on August 9 to mark centenary of the Kakori train action of the HRA.

ANALYSIS



About Hindustan Republican Association (HRA)

- ▶ **Genesis:** Formed in 1924, as a radical revolutionary organization.
- ▶ **Objective:** To establish a Federated Republic of the United States of India by armed revolution.
- ▶ **Founding members:** Ram Prasad Bismil, Ashfaqulla Khan, Sachindra Nath Bakshi, Sachindranath Sanyal, and Jogesh Chandra Chatterjee.
- ▶ **Ideologies of HRA:**
 - ▷ **Socialism:** “basic principle of the republic shall be universal suffrage and the abolition of all systems which make any kind of exploitation of man by man possible.”
 - ◊ In 1928, **Bhagat Singh, Sukhdev, Shiv Verma, Chandra Shekhar Azad and Vijay Kumar Sinha** included socialism as a key goal.
 - ◊ Thus, the HRA was renamed the **Hindustan Socialist Republican Association (HSRA)**.
 - ▷ **Armed overthrow of the imperialist government:** The manifesto declared that the foreigners “have no justification to rule over India except the justification of the sword, and therefore the revolutionary party has taken to the sword”.
- ▶ **Key Publications:**
 - ▷ **The Revolutionary**, written by Ram Prasad Bismil under the pen name of Vijay Kumar, with the assistance of **Sachindra Nath Sanyal**.
 - ◊ **Philosophy of the Bomb:** It was composed by **Bhagwati Charan Vohr**, defended revolutionary violence for national rights.
 - ◊ It is seen as response to the condescension shown by the Indian National Congress to the revolutionary party’s attempt at blowing off the Viceregal Special train in December 1929 and the article **Cult of the Bomb by Gandhi ji**.

BRIEF BACKGROUND

About Kakori Train Action

- ▶ **Execution:** On August 9, 1925, revolutionaries from the HRA looted a British treasury train near Kakori, Uttar Pradesh. **No innocent passenger was harmed.**
- ▶ **Objective:** To rob the train carrying the British Indian Government treasury to fund revolutionary activities.
- ▶ **Key Figures:** Ram Prasad Bismil, Ashfaqullah Khan, and Thakur Roshan Singh, Rajendra Lahiri and Sachindra Bakshi, among others.
- ▶ **Kakori Conspiracy Case**
 - ▷ Death sentences for **Bismil, Ashfaqullah Khan, Rajendra Nath Lahiri, and Thakur Roshan Singh**.
 - ▷ Others received **long-term imprisonment** including deportation to the Cellular Jail.

About Lahore Conspiracy Case Utilised for National Cause by revolutionaries

- ▶ Revolutionaries used the **courtroom to effectively counter the government’s false portrayal** of their actions.
- ▶ They also organized **hunger strikes** to demand **better conditions and rights for political prisoners**, who were being treated like ordinary criminals by the British.
- ▶ **Jatin Das died** on September 13, 1929, **after 63 days of hunger strike**, sparking outrage across India.
- ▶ Ultimately, **Bhagat Singh, Sukhdev, and Rajguru were executed on March 23, 1931.**

Key Revolutionary Activities of HRA or HSRA

- ▶ **Avenging death of Lala Lajpat Rai (1928):** Lala Lajpat Rai succumbed to injuries of Lathi charge carried out by police during anti-Simon Commission demonstration in Lahore.
 - ▷ The Chief police executive, J.P. Saunders, was killed by **Rajguru, Bhagat Singh and Chandra Shekhar Azad**.
- ▶ **Assembly Bomb Explosion (1929):** Bhagat Singh along with B.K. Dutt, threw bombs in the Central Legislative Assembly. The court convicted them of waging war **against the state**, sentencing them to life imprisonment.
 - ▷ **Bhagat Singh** was taken to Lahore to **stand trial in the Lahore Conspiracy Case** for the killing of J P Saunders.

Factors that led to the establishment of HRA



Economic miseries after World War I



Disillusion about British promises following Rowlatt Bill and Defence of India Act



Jallianwala Bagh massacre (1919)



Sudden Suspension of Non-Cooperation Movement
following Chauri Chaura incident



Bolshevik revolution exposed revolutionaries to socialist thought

8.3.2. Kozhikode: India's First 'City of Literature'



CONTEXT

Kerala celebrates Kozhikode's recognition as India's first UNESCO 'City of Literature'.

ANALYSIS



Kerala also announced that June 23 will be celebrated annually as 'City of Literature' Day in Kozhikode.

- ▶ In October 2023, UNESCO announced Kozhikode as India's first UNESCO 'City of Literature' and placed it under the literary category of the UNESCO Creative Cities Network (UCCN).

About UCCN

- ▶ **Genesis:** Established in 2004 to promote cooperation among cities that use creativity as a strategic factor for sustainable urban development.
- ▶ **Cities covered:** 350 cities worldwide are part of the network.
- ▶ **Seven creative fields covered:** Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music.
- ▶ **Significance:** The UCCN designation brings global recognition and boosts tourism.
- ▶ **Other Indian cities on UCCN:** Listed by field—Music (Gwalior, Chennai, Varanasi), Film (Mumbai), Gastronomy (Hyderabad), Crafts and Folk Art (Jaipur and Srinagar)

BRIEF BACKGROUND

About Kozhikode

- ▶ **Location:** Kozhikode or Calicut is located on the Malabar coast.
 - ▶ The term "calico," a fine hand-woven cotton cloth, is believed to be derived from Calicut.
- ▶ **History:**
 - ▶ **Ruler:** In the medieval Age, it was ruled by the Samoothiris (Zamorins).
 - ▶ **City of Spices:** Traded in spices like black pepper and cardamom with Jews, Arabs, Phoenicians, and Chinese for more than 500 years.
 - ▶ **Foreign travellers:**
 - ◊ Ibn Battuta (author of Rihla) visited the city in the 14th Century.
 - ◊ Portuguese explorer Vasco da Gama and Persian ambassador Abdur Razzaq visited the city in the fifteenth century.
- ▶ **Contemporary significance:**
 - ▶ It has a robust literary foundation with over 500 libraries and more than 70 publishers.
 - ▶ It also boasts a high level of literary education.
 - ▶ In 2012 it was given the tag of "City of Sculptures" (Shilpa Nagaram) because of the various architectural sculptures located in various parts of the city.



8.3.3. World's Oldest Cave Painting



CONTEXT

Scientists have discovered the **world's oldest-known cave painting** inside **Leang Karampuang** cave in **Sulawesi, Indonesia**, dating back at least **51,200 years**.

- ▶ Previously, the **oldest known painting** was in Sulawesi's **Leang Tedongnge** cave, dating to at least **45,500 years ago**.
- ▶ However, some believe that the painting in **Spain's Maltravieso** cave attributed to Neanderthals is the oldest and dates back to around 64,000 years ago.

About Karampuang cave painting

- ▶ Its age was determined using **uranium-based dating technology**.
- ▶ Features a **standing pig** and **three smaller human-like figures in dark red pigment**.

8.3.4. Apatani Tribe



CONTEXT

Researchers from the Zoological Survey of India (ZSI) have recorded a new species of forest-dwelling horned frog from the **Talle Wildlife Sanctuary** (Arunachal Pradesh).

- ▶ New species has been named after the dominant Apatani community in Arunachal Pradesh.

About Apatani Tribe

- ▶ The tribe Found in **Ziro valley** and known for their effective traditional village council called **bulyañ**.
- ▶ Region of tribe has been included in **UNESCO's Tentative List** as living Cultural Landscape (where man and environment have harmoniously existed together in a state of interdependence).
- ▶ **Major Festival:** Dree and Myok
- ▶ **Key Dance:** Daminda, and Pree dance

8.3.5. Mascho Piro (Mysterious Tribe)



CONTEXT

Recently, uncontacted indigenous Mashco Piro tribe was located in remote Peruvian Amazon, in Peru.

About Mascho Piro

- ▶ Numbering more than 750, they are believed to be **largest uncontacted tribes** living in jungles of **Amazon and Southeast Asia**.
- ▶ They are **nomadic hunter-gatherers**.
- ▶ Contact with them is **prohibited** fearing the **spread of a disease among population** to which it has no immunity.
- ▶ **Madre de Dios Territorial Reserve** was notified in 2002 to protect their territory. However, large parts of land have been sold to companies for timber and other produce.

8.3.6. Jyotirmath or Joshimath



CONTEXT

The Centre approved the Uttarakhand government's proposal for renaming the Joshimath tehsil in Chamoli district to Jyotirmath, and Kosiyakutoli tehsil in Nainital district to Pargana Shri Kainchi Dham.

About Jyotirmath

- ▶ It is one of the four cardinal mathas established by 8th century philosopher Adi Shankaracharya across India to promote Advaita Vedanta philosophy.
- ▶ It is believed that Adi Shankaracharya performed penance in Jyotirmath under a tree known as Amar Kalpavriksha.
- ▶ It is also known as winter abode of Lord Badrinath.
- ▶ It is a base camp for mountaineers attempting to climb Nanda Devi peak.

8.3.7. Gallantry Awards



CONTEXT

President has approved 103 Gallantry awards to Armed Forces and Central Armed Police Forces personnel on Independence Day 2024.

About Gallantry Awards

- ▶ **Order of precedence of awards:** Param Vir Chakra, Ashoka Chakra, Mahavir Chakra, Kirti Chakra, Vir Chakra and Shaurya Chakra.
- ▶ **Announced twice in a year** - first on occasion of Republic Day and then on occasion of Independence Day.
- ▶ **Wartime Gallantry Awards** i.e. Param Vir Chakra, Maha Vir Chakra and Vir Chakra instituted in 1950.
- ▶ **Ashoka Chakra Class-I, Class-II and Class-III** were instituted in 1952. Later renamed as Ashoka Chakra, Kirti Chakra and Shaurya Chakra respectively in 1967.
 - ▷ These are Peacetime Gallantry Awards.

8.3.8. National Film Awards



CONTEXT

70th National Film Awards for the year 2022 have been announced.

About National Film Awards

- ▶ Established in 1954 and were initially called 'State Awards'.
- ▶ 2 President's Gold Medals, 2 certificates of merit, and 12 silver medals for regional films were presented in the earlier years.
- ▶ Awards have been administered by the Directorate of Film Festivals since 1973.
- ▶ Awards are given in 3 categories: Feature Films, Non-Feature Films, and Best Writing in Cinema.
- ▶ **Most Film Friendly State award** is also given, along with the National Film Awards, to a State of India that has been helpful in furthering the growth of the film industry.

8.3.9. UNESCO's Prix Versailles Award



CONTEXT

'Smritivan Earthquake Memorial Museum', India's largest memorial and was shortlisted for UNESCO's Prix Versailles Award.

UNESCO's Prix Versailles Award

- ▶ **About:** Granted annually at UNESCO since 2015, the Prix Versailles consists of architecture awards that showcase the finest contemporary achievements worldwide.
- ▶ **Categories:** Award is categorized in 24 World Titles including Airports, Campuses, Passenger Stations, Sports, Museums, Emporiums, Hotels, and Restaurants.
- ▶ **Project specification:** Projects must be innovative, creative, reflect local heritage, be ecologically efficient, and promote social interaction and participation.
 - ▷ The Official list aligns with the principles of intelligent sustainability and takes into consideration projects' ecological, social and cultural impacts.
- ▶ **Significance:** It highlights the primary role of the Laureates in beautifying and improving the living environment.
- ▶ **Other Recognized Indian project:** In December 2023 Kempegowda International Airport, Bengaluru (Karnataka) was honored with the UNESCO's 2023 Prix Versailles, and named among the 'World's most beautiful airports'.

About Smritivan Earthquake Memorial Museum

- ▶ **Establishment:** Built in the memory of 2001 Gujarat Earthquake victims, museum was inaugurated in 2022.
 - ▷ The 2001 Gujarat Earthquake had a magnitude of 7.9 on the Richter scale, with Bhuj as the epicenter.
- ▶ **Location:** Situated on Bhujiyo Dungar hill (Gujarat) which also harbours Bhujio Fort built by Roa Godji for the defence of Bhuj in 1723. Fort is named after Bhujang Naag, the snake temple.
- ▶ **Miyawaki Forest:** One of the world's largest Miyawaki forests is located at the museum.
- ▶ The Miyawaki method, developed by Japanese botanist Akira Miyawaki, involves planting different types of native trees in close proximity to promote rapid growth and biodiversity.



P R I X V E R S A I L L E S

8.4. TEST YOUR LEARNING

MCQs

Q.1 Consider the following:

Assertion (A): The Hindustan Republican Association (HRA) was renamed as the Hindustan Socialist Republican Association (HSRA)

Reason (R): In 1928, Bhagat Singh and other revolutionaries included socialism in the association's objectives to abolish exploitation.

- (a) Both (A) and (R) are true, and the reason is the correct explanation of the assertion
- (b) Both (A) and (R) are true, but the reason is not the correct explanation of the assertion
- (c) (A) is true, but (R) is false
- (d) Both (A) and (R) are false

Q.2 In December 2023, which among the following was honoured with the UNESCO's 2023 Prix Versailles award?

- (a) Smritivan Earthquake Memorial Museum, Gujarat
- (b) GIFT City, Gujarat
- (c) Taj Mahal, Agra
- (d) Kempegowda International Airport, Bengaluru

Q.3 Consider the following pairs:

Sites	Location
1. Shri Vishnupad Temple	Ambikapur
2. Mahabodhi temple	Bodh Gaya
3. Ramrajya Lok	Orchha

How many of the above pairs is/are correctly matched?

- (a) only one
- (b) only two
- (c) All three
- (d) None

Q.4 Consider the following statements:

1. Devi Ahilya Bhai Holkar worked for women education, widow remarriage, and against Untouchability.
2. Swami Vivekananda established Ramakrishna Mission in 1877 and preached Vedanta philosophy.

Select correct answer from the codes given below:

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

Q.5 Which among the following city was recognized as India's first UNESCO 'City of Literature'?

- (a) Madurai
- (b) Kozhikode
- (c) Lucknow
- (d) Gwalior

Questions

1. Describe the historical significance of Nalanda University and analyze its impact on the cultural, educational, and religious development of ancient India. What lessons can be drawn from the revival of Nalanda in the 21st century for contemporary education and diplomacy? (250 Words)
2. Discuss the features and historical and cultural significance of burial practices in India with special reference to Charaideo's Moidams. (150 words)

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ETHICS



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9.1. ETHICS OF WHISTLEBLOWING



CONTEXT

Recently, Julian Assange was freed by US Court in WikiLeaks espionage case. WikiLeaks serves as a **whistleblower platform** over internet. From Edward Snowden to Satyendra Dubey, many whistleblowers have acted on their **conscience**, but have their acts always been **ethical**?

ANALYSIS



What is Whistle blowing?

- ▶ It is **disclosure of information** to public or some higher authority about any wrongdoing, in the form of fraud, corruption, etc. in a company or government.
 - ▷ **Whistleblower** is person who reports/discloses wrongdoing or unethical act. E.g., Late **Shanmugam Manjunath**

Ethical dilemmas involved in Whistleblowing

- ▶ **Protection of whistleblowers vs. National security:** Balance between safeguarding whistleblowers ensuring government responsibility while considering threats to national security.
- ▶ **Public right to information vs. Government need for confidentiality:** Balance between citizens' right to know about government's actions and government's necessity to uphold confidentiality in certain matters.
- ▶ **Duty of loyalty vs. Moral obligation:** Conflict between an employee's duty to their employer and their moral obligation to report wrongdoing.
- ▶ **Protection vs. Accountability:** Ethical considerations in protecting whistleblowers from retaliation while ensuring accountability to discourage false or malicious reporting.

Laws to protect Whistleblowers in India

- ▶ **Whistleblowers Protection Act, 2014, Companies Act, 2013 (Section 177), SEBI (Securities and Exchange Board of India) Regulations, 2015 and IRDAI Guidelines for Corporate Governance for Insurers**

Way Forward

- ▶ **Strengthen and Implement Existing Laws:** Strengthen and Implement the Whistleblowers Protection Act, 2014 effectively and ensure robust enforcement mechanisms.
- ▶ **Extend Protection to Private Sector:** Develop comprehensive legislation covering both public and private sectors and encourage corporate policies to protect whistleblowers.
- ▶ **International cooperation:** Adopt global best practices and protect cross-border whistleblowers.
- ▶ **Media Protections:** Strengthen laws protecting journalists who work with whistleblowers and ensure freedom of press in reporting on whistleblower cases.
- ▶ **Balance Access to Information and Secrecy:** Need to ensure freedom, liberty, and access to information to public while maintaining secrecy about national security.

Stakeholders and Their Interests	
Stakeholder	Interests
Whistleblower	Exposing wrongdoing and protecting themselves from retaliation.
Citizens/ Society	Access to information about government activities.
Government	Balancing national security concerns with transparency.
Organization	Protecting their reputation, addressing the reported issues internally, if possible, etc.
Regulatory Bodies	Enforcing compliance with laws and regulations.
Media Interests	Reporting on newsworthy allegations and protecting sources.
Advocacy groups/NGOs	Promoting transparency & accountability, support whistleblowers.

9.2. FRAUDS IN CIVIL SERVICES EXAMINATION

CONTEXT



Recently, some civil servants have been allegedly using unethical means like faking certificates and using ChatGPT to cheat for entering the prestigious civil services. Such issues point to the increasing instances of fraud and dishonesty in Civil Services Examination.

ANALYSIS



Ethical Issues Involved

- ▶ **Detrimental to Social Justice:** Use of fake certificates leads to questioning the **validity and fairness of affirmative action**.
- ▶ **Administrative implications:** Entry of **unethical candidates in civil services** can lead to corruption, dishonesty, inefficiency, abuse of power etc.
- ▶ **Against Kant's Categorical Imperative & Deontology:** Kant's emphasis on **acting in accordance with rules** that could hold for everyone.
- ▶ **Violates Utilitarianism:** Utilitarianism basis morality of an action based on assessment of its **consequences**. Cheating/abuse of power is unethical as it is detrimental to society at large.
- ▶ **Knowledge without Character:** Cheating & abuse of power is amongst the **seven social sins (i.e. Knowledge without Character)**.

Steps taken to nudge aspiring Civil Servants towards ethical conduct

- ▶ **Introduction of ethics paper:** In 2013, to evaluate ethical competence of candidates.
- ▶ **Public Examinations (Prevention of Unfair Means) Act, 2024:** Aims to **prevent use of unfair means** in public examinations and bring greater **transparency, fairness and credibility**.
- ▶ **Use of digital technologies by UPSC to deter cheating:**
 - ▷ UPSC plans to use Aadhaar-based fingerprint authentication, CCTV surveillance using AI.

Way Forward

- ▶ **Value education:** Values like **honesty, integrity, truthfulness & self-dignity** should be inculcated among students through education, to deter such instances in future.
- ▶ **Exam Reforms:**
 - ▷ **Stringent verification processes after selection of candidates.**
 - ▷ **Stringent ethical measures** to curb examination malpractices, promoting merit and fairness.
 - ▷ **Aptitude and leadership tests** for selection to curb abuse of power during civil servant deputation (**Hota Committee**).
 - ▷ **Technological solutions:** Tackling illegitimate use of technology with innovative strategies.
- ▶ **Revised Conduct Rules:** Regular review and updates of rules to address emerging challenges and ensure their relevance.
- ▶ **Following International Best Practices:** Australian Public Service Act prescribes a set of **Public Service Values**. Its **Public Service Commissioner** is authorized to evaluate the incorporation and upholding of values.

Stakeholders and their Roles/Interests	
Stakeholder	Role/Interests
Recruiting agencies	Fair and open competition, loss of trust reposed by public, Constitutional obligations.
Public at large	Credibility and transparency of selection process, Meritocracy etc.
Government	Trust reposed by Public, Increasing instances of dishonesty in public services, detrimental to growth of nation & society at large.
Aspiring Civil Servants	Expected to uphold values including Integrity, honesty, objectivity, impartiality, transparency, merit and excellence when engaging in the examination process.

9.3. GOOD LIFE: THE ART OF BALANCING WORK AND LEISURE



CONTEXT

Recent research highlighted the importance of leisure activities like painting, knitting etc. in enhancing **well-being more than work**. However, while over-identifying with a job can cause stress, not having one can also contribute to anxiety and depression.

ANALYSIS



Complimentary Relationship between work and leisure

- ▶ **Freedom of choice and intrinsic motivation:** "Leisure is work you volunteer for." (Robert Robinson) Thus, when a job is based on freedom of choice, it can feel like leisure.
 - ▷ For example, person who enjoys writing and reading may enjoy writing novels or newspaper columns as work.
- ▶ **Ensuring well-being:** "Work banishes boredom, vice, and poverty." (Voltaire)
 - ▷ For example, **employment aids in building relationships, overcoming trauma and emotional intelligence.**
- ▶ **Leisure improves work:** Leisure improves creativity, performance, and job satisfaction, complimenting financial security, personal development, and a sense of accomplishment provided by work.

Contrasting Relationship between work and culture

- ▶ **Freedom vs. Responsibilities:** Leisure characterized by freedom and enjoyment, is seen as contrasting with work responsibilities and expectations which leads to stress and fatigue.
- ▶ **Self-Expression vs. Personal growth:** Mechanized and over-work to achieve performance goals may jeopardise self-expression and leisure. E.g. rote learning in school hampers learning.

Complimentary and contrasting relationship of work and leisure underscores necessity of striking a balance between the two in order to have fulfilling good life.

Factors that make it difficult to maintain a balance between work and leisure

- ▶ **Workplace culture:** A capitalist workplace culture pushes employees toward **job creeps, expectation of perfectionism and encourages extra hours** to get noticed or promoted, leading to a constant cycle of overwork.
 - ▷ **Job creep** means a person performs tasks that are outside the agreed scope of their job.
- ▶ **Technological advances:** Technology like email and cell phones has blurred the line between work and home, making it hard to disconnect.
- ▶ **Materialistic greed:** Some people work beyond their needs due to uncertainty about the future or the desire to bequeath wealth, often working until they're exhausted rather than satisfied.
- ▶ **Hustle culture:** Society often glorifies being busy as a sign of success, encouraging people to constantly push themselves, further diminishing leisure time.

Way ahead for ensuring work and leisure coexist harmoniously

- ▶ **Promote positive work culture:** Adopting participative democratic leadership styles, fostering open communication, organizing team-building activities at the workplace, etc.
 - ▷ Giving workers an **extra day off a week actually increases productivity, boosts physical and mental health.** (WEF)
- ▶ **Bounded Rationality:** Instead of pursuing perfectionism, bounded rationality (considering **cognitive limitations of the decision-maker**) should be accepted and people should be given a margin for failure and improvement.
- ▶ **Embrace flexibility:** Flexible hours and hybrid working enhance job satisfaction and productivity by allowing employees to balance work and personal life.
- ▶ **Set boundaries:** Clearly define work hours, avoid checking work emails or taking calls outside these hours to maintain a separation between work and home life.

BRIEF BACKGROUND

What is Leisure and what is its significance?

- ▶ Leisure, often seen as **free time**, is broadly the **freedom of choice to act according to one's will**.
 - ▷ For instance, **unemployment is not leisure**, as it is not the person's choice of not to work.
- ▶ True leisure **allows people to pursue activities like rest, hobbies, entertainment, sports, and travel**, but only when there's a **genuine sense of freedom**.
 - ▷ For instance, **travel required for work loses the essence of leisure as the person is obliged to pursue them.**
- ▶ Leisure, unlike mere amusement, involves **pleasure, happiness and living blessedly.**

Significance of Leisure

- ▶ **Sustaining of cultural life** of the community
- ▶ **Emotional support** for family life
- ▶ **Personal expression** and development
- ▶ **Promotion of physical and mental health** and well-being

9.4. PUBLIC INFRASTRUCTURE AND PUBLIC SERVICE DELIVERY



CONTEXT

Recently, more than **15 bridges have collapsed in Bihar**, around 15 engineers were suspended for negligence and ineffective monitoring. Previous incidences of **failure of public infrastructure like the Morbi bridge collapse (Gujrat, 2022), airport roof collapses (Delhi, Rajkot and Jabalpur)** and railway collision of Kanchanjunga Express with a freight train have resulted in loss of lives and property. These incidences highlight the compromised quality of public infrastructure and failure of government in ensuring **quality public service delivery**.

ANALYSIS



Ethical Issues in governance of infrastructure development

- ▮ **Inefficient administrative machinery:** It acts as an obstacle to effective implementation of development plans. E.g. **negligence of responsibility**
- ▮ **Policy issues:** Use of **L1 contract method** (lowest bidder wins) prioritizes **cost over quality and safety**.
- ▮ **Corruption:** Misuse of **discretion** by public officials, **nexus** between officials, contractors etc.
- ▮ **Lack of probity:** Mechanism for **fixing accountability** and ensuring **transparency** are either absent or not effectively implemented.
 - ▷ E.g. **Delhi floods** caused by **lack of maintenance** of gates of Yamuna barrage.
- ▮ **Attitudinal issues** like indifference, lack of motivation for striving for excellence.

Ethical issues involved in public service delivery

- ▮ **Lack of Professional ethics:** Public servants often **lack the managerial skills** to ensure effective service delivery.
- ▮ **Lack of a 'public service' attitude:** Public servants prioritizing **personal gains** and **social status** over their public **duty** and responsibility. E.g. **patronage, favouritism**.
- ▮ **Corruption:** Unethical usage of **power and discretion**. E.g. **Leakages** in PDS distribution, **inclusion and exclusion errors** in schemes.
- ▮ **Accountability and transparency:** **Lack of just and fair treatment** of malafide errors weakens **deterrence** towards corrupt practices.

Measures to ensure Good Governance

- ▮ **Administrative reforms:** Measures like **Citizen's Charter**, a **responsive grievance redressal** mechanism and **fixing accountability** of every public servant.
- ▮ **New Public Management (NPM):** It involves the adoption of **efficient practices** from the **private** sector to apply in the public sector. E.g. Role of enabler than provider, citizen-centrism etc.
- ▮ **Human capital development:** Recruitment and training of capable public servants, **sensitization of grassroots bureaucracy**, inculcating **ethical values of public service**. E.g. **Mission Karmayogi**.
- ▮ **E-governance:** Optimal adoption of technology to improve **quality of public service delivery**.
 - ▷ E.g. **SMART** (Simple, Moral, Accountable, Responsive and Transparent) governance.
- ▮ **Monitoring project implementation:** **Regular audits** at multiple levels ensure **accountability** of public servants. E.g. Pro-Active Governance and Timely Implementation (**PRAGATI**) platform.

BRIEF BACKGROUND

Public service delivery

- ▮ **Public Service Delivery** is mechanism through which public services are delivered to the public by local, municipal, or federal governments. E.g. **public education, and health services**.
 - ▷ It acts as a **tangible link between government and citizens** and **promotes national values**.
- ▮ **Significance:**
 - ▷ **Economic Growth:** Quality public service delivery helps in **poverty alleviation, human capital formation and eliminating corruption**.
 - ▷ **Ensure equitable distribution of resources:** It helps **reduce inequalities** stemming from gender, caste etc. E.g. **Targeted service delivery with TPDS to ensure food security**.

Issues persistent in public service delivery

- Lack of effective implementation:** Of rules and regulations for civil servants' service improvement.
- ▮ **Rigidity in the administration:** Resistance of administration to reforms and **change**.
- ▮ **Political constraints:** Political interests prioritized above public interest hinder equitable public service delivery.
- ▮ **Neglect of reforms for ethical grassroots bureaucracy:** Most reforms and changes cater to administrative reforms at higher levels of bureaucracy.

9.5. CONFLICT OF INTERESTS OF PUBLIC OFFICIALS



CONTEXT

Recently, a US-based firm accused the Chairperson of SEBI of violating SEBI's Code of Conduct, leading to a potential conflict of interest.

ANALYSIS



Ethical Issues Involved in Conflict of Interests

- ▶ **Undermining of Public trust:** Biased decision-making can undermine public trust in government institutions.
- ▶ **Corruption and abuse of power:** Leads to corrupt practices like bribery, favoritism, and nepotism. E.g., Adarsh Housing Society Scam.
- ▶ **Neutrality and impartiality:** Can result in biased and skewed decision-making by public functionaries.
- ▶ **Violation of democratic principles:** Favoring a few at the expense of many, undermining the principles of equality and fairness.

Legal Framework to prevent Conflict of Interest in India

For Public Servants

- ▶ **Central Civil Services (Conduct) Rules, 1964:** Civil servants must declare private interests related to public duties and resolve conflicts in public interest, and should not misuse position for personal gains.
- ▶ **Central Vigilance Commission guidelines and SEBI's Code on Conflict of Interests for Board Members.**

For Businesses

- ▶ **Section 166 of Companies Act, 2013:** Company's director shall not involve in conflict with company's interests.
- ▶ **SEBI Guidelines** for dealing with conflict of interests of various entities such as stock exchanges, intermediaries, etc.

Way Forward to ensure effective resolution of Conflict of Interests

- ▶ **Identifying and managing** conflict of interest through effective disclosure processes.
- ▶ **Demonstrating leadership commitment** to maintain public confidence and integrity.
- ▶ **Periodic review of 'at-risk' conflict areas** such as inside information, outside appointments.
- ▶ Introduction of a **cooling off period** for employment of public servants.
- ▶ **Creation of independent oversight bodies** to monitor, investigates, and enforce conflict of interest rules.

BRIEF BACKGROUND

What is Conflict of Interest?

- ▶ **Definition:** A 'conflict of interest' occurs when a public official's private interests can influence their performance of their public duties and responsibilities.
- ▶ **Types of Conflict of Interest**
 - ▷ **Actual:** Official's private interest **conflicts with duty** to perform in public interest.
 - ◊ e.g., a public official awarding a lucrative contract to family member's company.
 - ▷ **Potential:** Official's private interest **may come in conflict** with public duty in future.
 - ◊ e.g., an academic researcher receiving funding from a corporation for study related to that company's products.
 - ▷ **Perceived:** Official's private interest **appears** to be in conflict with public duty.
 - ◊ e.g., an elected official attending a private event hosted by a lobbyist, even if no direct favors are requested.

Strategies for Resolution of Conflict of Interest


	Disclosure of financial, personal, and professional interests
	Divestment or liquidation of the financial interest.
	Recusal from involvement in an affected decision-making process
	Restriction of access of affected official to particular information
	Re-arrangement of official's duties and responsibilities
	Assignment of the conflicting interest in a genuinely blind trust arrangement
	Resignation from the conflicting private-capacity function
	Resignation of the public official from their public office

Stakeholders Involved and their Interests

Stakeholders	Interests
Public Officials	▶ Maintain integrity, impartiality and neutrality, follow Code of Ethics and Code of Conduct etc.
Government	▶ Enforcement of ethical standards, efficient and effective public service delivery, Good Governance.
Citizens	▶ Unbiased access to public services, transparent and accountable administration.
Businesses	▶ Fair and unbiased opportunities, favourable business environment, regulatory leniency.
Regulatory Bodies	▶ Maintain integrity of regulatory processes, ensure fair competition and protect public interest.

Conclusion


Addressing conflicts of interest is not merely a matter of legal compliance but a fundamental aspect of ethical governance. By fostering a culture of transparency, accountability, and integrity, governments can ensure that decisions are made in the best interest of the citizens, thereby maintaining the legitimacy of public institutions and reinforcing the democratic principles.




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9.6. ETHICS OF ONLINE GAMING



CONTEXT

Voluntary Code of Ethics for Online Gaming Intermediaries (OGI) has been issued as a Joint Declaration of the members of Digital Gaming Committee of the Internet and Mobile Association of India (IAMA) in collaboration with the All India Gaming Federation (AIGF), E-Gaming Federation (EGF) and Federation of Indian Fantasy Sports (FIFS).

ANALYSIS



Ethical concerns with Online Gaming

- ▶ **Gaming vs. Gambling:** Concerns with gaming platforms promoting gambling.
- ▶ **Privacy concerns:** Online gaming platforms track player actions and interactions, including personal sensitive data.
- ▶ **Fair play:** Concerns with manipulation of real money game outcomes by malicious actors.
- ▶ **User protection:** Disruptive behaviours like harassment, cheating, bullying, identity theft, abuse, and potential for money laundering.
- ▶ **Accountability:** Instances of unfair practices, addiction, wagering, or user harm.
- ▶ **Virtue ethics:** In-game characters' traits displayed in action influences players' ethical decision-making in real life.

Regulatory Framework for Gaming in India

- ▶ **Legal Distinction in Games:** Games of skill are generally legal, while games of chance are illegal.
- ▶ **Constitutional Provisions:** Courts recognize skill gaming as a protected activity under Article 19(1)(g).
 - ▷ **Seventh Schedule** empowers each state to enact laws related to "betting and gambling", resulting in varying regulations across states.
- ▶ **Online Gaming Rules:** Framed **Information Technology, Intermediary Guidelines and Digital Media Ethics Code Rules, 2021.**
- ▶ **Digital Personal Data Protection Act, 2023:** Aims to safeguard individual privacy and regulate data processing.
- ▶ **Consumer Protection Act, 2019:** Protects consumers' rights to safety, information, redressal, and choice.



Key Information

About the Code of Ethics

- ▶ Code is **voluntary in nature**, and it aims to safeguard consumer interests, foster responsible gaming, and improve industry standards by ensuring uniform business practices.
- ▶ **Key Provisions:** Responsibilities of Online Gaming Intermediaries include:
 - ▷ **Responsible Gaming:** Offers users access to information about responsible gaming, self-exclusion feature, and utilizes advanced technology tools to monitor player behavior.
 - ▷ **Age Gating (Safeguards for minors):** Real money prizes shall not be offered to users below 18 years of age.
 - ▷ **Fair Gaming:** Publish terms and conditions, game mechanics and rules and not offer any contest where real-money gaming platform directly/indirectly participate against users.
 - ▷ **Financial Safeguards:** Update KYC, implement controls, and preventive measures to detect and prevent money laundering and unlawful activities.
 - ▷ **Responsible Advertising:** Fair and truthful advertisement, containing necessary disclaimers and warnings.
 - ▷ **Safe, Secure and Reliable Gaming:** Process and store digital personal and non-personal data in compliance with applicable data protection laws.

Snapshot of Online Gaming Market in India

<p>20% CAGR: 20%</p>	<p>Game downloads soared from 5.65 billion to a staggering 9.5 billion</p>	<p>538 million gamers</p>
<p>INR 231 billion by FY25</p>	<p>India's share of global game downloads is 16%</p>	<p>15,000 game developers and programmers</p>
<p>Mobile gaming - 90% of the online gaming market</p>		

Key Stakeholders	
Stakeholders	Roles/Interests
Gamers	▶ Consumers, advocates, and potential victims of unethical practices.
Game Developers	▶ Enhance gaming experience, promote fair gaming practices, and potential targets of ethical concerns.
Platform providers	▶ Responsible for content moderation, user safety, and regulations compliance.
Regulatory Bodies	▶ Protection of consumers, prevention of illegal activities, enforcing regulations and promoting responsible gaming practices.
Civil Society	▶ Protection of children from harmful content and excessive gaming, and prevent social disharmony.

Way Forward

- ▶ **Implement data anonymization and encryption** to safeguard player identities and personal information.
 - ▷ Adhere to **data minimization** and provide users with control over their data.
- ▶ **Promote responsible gaming** through proactive measures and educational initiatives.
- ▶ **Implement self-regulation** within gaming companies, including identity and age verification, counseling support, and regular audits.
- ▶ **Anti-money laundering regulations**, including enhanced due diligence for high-risk consumers and geo-location services for verification

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9.7. EMOTIONAL INTELLIGENCE



CONTEXT

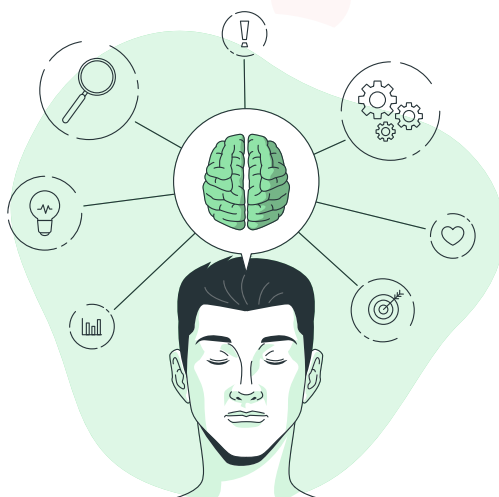
A recent study suggests that non-cognitive skills and Emotional Intelligence (EI) are equally crucial in shaping a student's academic journey as brain intelligence.

ANALYSIS



Importance of EI in education

- ▶ **Enhances Academic Performance:** EI students manage stress, setbacks, and persevere through challenges.
- ▶ **Promotes Positive Mental Health:** EI students have higher self-esteem, lower anxiety, and depression levels.
- ▶ **Develops Empathy and Compassion:** By understanding and recognizing emotions in themselves and others.
- ▶ **Nurturing Relationships:** EI equips students with skills to communicate thoughts, needs, and emotions effectively.
- ▶ **Long-term Success:** EI helps manage emotions, collaborate effectively, and exhibit strong interpersonal skills.
- ▶ **Leadership and Decision-making:** EI students understand their strengths and weaknesses, possess self-confidence, and motivate others



Brief background





About Emotional Intelligence

- ▶ It is defined as the ability to **recognize, understand, manage, and influence your own emotions and the emotions of others.**
- ▶ A high EI aids in **strengthening interpersonal skills**, especially related to **conflict management and communication** and a **holistic personality development** by developing non-cognitive skills.

Application of Emotional Intelligence for administrative practices

- ▶ **Helps in self-assessment** and understanding one's strengths, weaknesses, and **emotional management.**
- ▶ **Aids in effective conflict resolution** through empathetic communication and interpersonal skills.
- ▶ **Addresses conflicts of interest** and helps in decision-making by guiding conscientious actions.
- ▶ **Anticipates needs and provides inclusive support** and improving efficiency and coordination of the team.
- ▶ **Builds an environment of trust** by developing social management skills, fostering a sense of support and hearing.

Features of Emotional Intelligence (Daniel Goleman's Model)

	 Recognition	 Regulation
 Personal Competence	Self-Awareness <ul style="list-style-type: none"> • Self-confidence • Understanding own strengths and weaknesses • Understanding impact of your behaviour on others • Understanding impact of other's behaviour on your emotional state 	Self-Management <ul style="list-style-type: none"> • Emotional regulation: keep a check on disruptive emotions • Acting in congruence of your values. • Open to change: adaptability • Goal-orientation irrespective of hurdles.
 Social Competence	Social Awareness <ul style="list-style-type: none"> • Understanding social situations. • Empathetic orientation • Active listening 	Social Management <ul style="list-style-type: none"> • Team management • Conflict resolution • Sensitive and empathetic interpersonal relations and communication.

Difference between EQ and IQ

Emotional Quotient (EQ)	Intelligence Quotient (IQ)
<ul style="list-style-type: none"> Identifying, perceiving and regulating emotions through five domains: self-awareness, self-regulation, motivation, empathy, and social skills. 	<ul style="list-style-type: none"> It consists of logical reasoning, cognitive functions, memory, word comprehension, maths skills, abstract and spatial thinking, mental agility.
<ul style="list-style-type: none"> Subject to environmental and social influences, and can be developed over time. 	<ul style="list-style-type: none"> Considered a stable trait influenced by genetics.
<ul style="list-style-type: none"> No universally standardized test. 	<ul style="list-style-type: none"> Assessed through standardized intelligence tests (IQ tests), by comparison with average performance in age group.
<ul style="list-style-type: none"> Crucial for overall well-being, mental health, and relationship quality. 	<ul style="list-style-type: none"> Can contribute to greater academic achievement and job performance.

Ways to inculcate Emotional intelligence

- Social-emotional learning (SEL) programs** teach students to manage emotions, set positive goals, show empathy, and make responsible decisions. Ex. **Prerana Experiential Learning School in Vadnagar, Gujarat.**
- Collaborative learning**, such as group projects and peer tutoring, improves teamwork, communication, and conflict resolution skills. Ex. Happiness Curriculum Delhi.
- Reflection and self-awareness practices**, like meditation and journaling, aid in self-regulation.
- Involving parents and community and feedback system** fosters holistic EI practices.
- Feedback system** measures impact through student surveys and academic performance.
- National Education Policy, 2020** emphasizes developing creative potential through multi-disciplinary education and professional academic and career counselling.



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9.8. SOCIAL INFLUENCE AND PERSUASION IN TIMES OF SOCIAL MEDIA AND INFLUENCERS



CONTEXT

The digital world has witnessed exponential rise of social media influencers, who are increasingly playing a significant role in shaping our opinions, consumer's interests and purchasing decisions.

ANALYSIS



How Social Media and influencers are ushering progressive Social Influence and Persuasion?

- ▶ **Progressive social norms:** Share uplifting and empowering content amplifying voices of marginalized communities. E.g. Black Lives Matter.
- ▶ **Influencers as a new marketing channel:** Enhance brand credibility and help in purchase intention through collaborations and cross-promotion.
- ▶ **Promoting Inclusivity and Diversity:** Influencers often champion inclusivity by representing diverse communities and challenging stereotypes.
- ▶ **Democratization of information:** E.g. news in regional languages, updates on twitter by government officials and leaders.

Harmful impact of Social Media and influencers

- ▶ **Spread of Misinformation:** Influencers often spread misinformation, affecting decision-making and democratic processes.
- ▶ **Mental Health Issues:** Self-comparisons and distorted reality views contribute to depression and anxiety.
- ▶ **Impact on Children:** Social media addiction hinders productivity, physical health, and interpersonal relationships.
- ▶ **Radicalisation:** Extremists use social media to propagate radical ideologies among vulnerable individuals.
- ▶ **Threat to Branding:** Influencers use fear appeals and misleading content to sell irrelevant or defective products, causing negative customer attitudes and reputational damage.

India's Rules and Responsibilities

- ▶ **Central Consumer Protection Authority (CCPA)** issued guidelines for preventing misleading advertisements.
- ▶ **Department of Consumer Affairs** released guidelines for celebrities, influencers, and virtual influencers in health and wellness.
- ▶ **Securities and Exchange Board of India (SEBI)** introduced new norms to regulate financial influencers.
- ▶ **Advertising Standards Council of India** issued guidelines for digital media influencer advertising.

Key Information

What is Social Influence and Persuasion?

- ▶ **Social influence** is the process by which individuals adapt their opinion, or change their behaviour as a result of social interactions with others.
 - ▷ **Influencers** entertain audiences through blogs, posts, and tweets on social media.
 - ▷ **Features:** Based on broader social norms, often unintentional and implicit, non-verbal, based on power, status, reputation, resources.
- ▶ **Major types:**
 - ▷ **Conformity:** Behaviour change designed to match the actions of others. E.g. selecting clothes to match what other people are wearing.
 - ▷ **Compliance:** Behaviour change that occurs as a result of direct request. E.g. a child cleaning up his/her room as per parent's request.
 - ▷ **Obedience:** Change in behaviour in response to a direct order from an authority figure. E.g. signing of a letter when asked by a teacher.
- ▶ **Persuasion:** Efforts to change beliefs, attitudes, behaviour, or preferences of another person.
 - ▷ **Features:** Intentional, explicit, verbal, based on perceived friendship.
 - ▷ **Principles:** Reciprocity, consistency, social proof, authority, liking, scarcity, and unity.
 - ▷ **Techniques:** Eye-catching photos, videos, interesting stories, social proof, and promotion of positive social norms.

Psychological Constructs Used by Digital Influencers

- ▶ **Reciprocal Relationship and Reciprocity Bias:** People respond to influencers by liking, following, and sharing their services.
- ▶ **Authority Bias:** Tendency to trust individuals based on live results or testimonies.
- ▶ **Familiarity Effect and Repetition Bias:** Consistent social media posts make us value familiar information over novelty.
- ▶ **Social Proof:** People mimic others' behaviour, believing if everyone uses a product, it must have merit.
- ▶ **Halo Effect:** People assume attractive influencers have other positive attributes.
- ▶ **Scarcity Heuristic:** People are more likely to make immediate purchases in scarcity.
- ▶ **Social Connection and Cultural Conformity:** People feel secure buying popular products.

Key Stakeholders	
Stakeholders	Role/Interests
Citizens	Virtual social connectivity, quality digital services, entertainment, self-expression, data protection and privacy, job opportunities (e.g. content creation)
Society	Social cohesion, Democratic public discourse, addressing of misinformation and disinformation
Market	Fair competition, economic growth by digital economy, data-driven business insights
Government	Protect consumer interests without hindering creativity and business, level playing field, maintaining national security, addressing misinformation and disinformation
Social Media	Quality service delivery, Increased customer base, user engagement and retention
Influencers	Creative freedom, monetization of personal brand, manage public image and reputation, leveraging partnerships with advertisers and brands

Steps to be taken

- ▶ **Digital influencer marketing guidelines** requiring clear, prominent disclosures including terms like “advertisement,” “sponsored,” “collaboration,” or “paid promotion.”
- ▶ **Increase consumer awareness and education** about influencers’ psychological tactics.
- ▶ Strategies to challenge extremist narratives including producing **counter-contents, censoring extremist content, controlling information flow control, and search engine manipulation.**
- ▶ **Restrict screen time for children and teenagers.**



9.9. TEST YOUR LEARNING

Questions

1. Whistle blower, who reports corruption and illegal activities, wrongdoing and misconduct to the concerned authorities, runs the risk of being exposed to grave danger, physical harm and victimization by the vested interests, accused persons and his team. What policy measures would you suggest to strengthen protection mechanism to safeguard the whistle blower? (150 Words) (UPSC GS IV – 2022)
2. What is meant by conflict of interest? Illustrate with examples, the difference between the actual and potential conflicts of interest. (150 words) (UPSC GS IV – 2018)



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ANSWER KEY

Polity

1	2	3	4	5
Answer: C	Answer: B	Answer: C	Answer: B	Answer: C

International Relations

1	2	3	4	5
Answer: D	Answer: D	Answer: A	Answer: C	Answer: B

Economy

1	2	3	4	5
Answer: B	Answer: B	Answer: A	Answer: A	Answer: D

Security

1	2	3	4	5
Answer: B	Answer: C	Answer: A	Answer: B	Answer: A

Environment

1	2	3	4	5
Answer: A	Answer: B	Answer: D	Answer: C	Answer: C

Social Issue

1	2	3	4	5
Answer: B	Answer: C	Answer: A	Answer: D	Answer: D

Science and Technology

1	2	3	4	5
Answer: B	Answer: C	Answer: C	Answer: D	Answer: A

Culture

1	2	3	4	5
Answer: A	Answer: D	Answer: B	Answer: A	Answer: B

Ethics

1	2	3	4	5
Answer: B	Answer: D	Answer: C	Answer: C	Answer: A



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