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June 2024



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2025, 2026 & 2027



Approach is to build fundamental concepts and analytical ability in students to enable them to answer questions of Preliminary as well as Mains Exam

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DELHI: 18 JULY, 9 AM | 16 JULY, 1 PM | 13 JULY, 5 PM
29 JULY, 1 PM | 30 JULY, 9 AM | 31 JULY, 5 PM

GTB Nagar Metro (Mukherjee Nagar): 19 JULY, 8:30 AM | 23 JULY, 5:30 PM

AHMEDABAD: 12 JULY | BENGALURU: 12 & 18 JULY | BHOPAL: 18 JULY | CHANDIGARH: 18 JULY
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MAINS 2024

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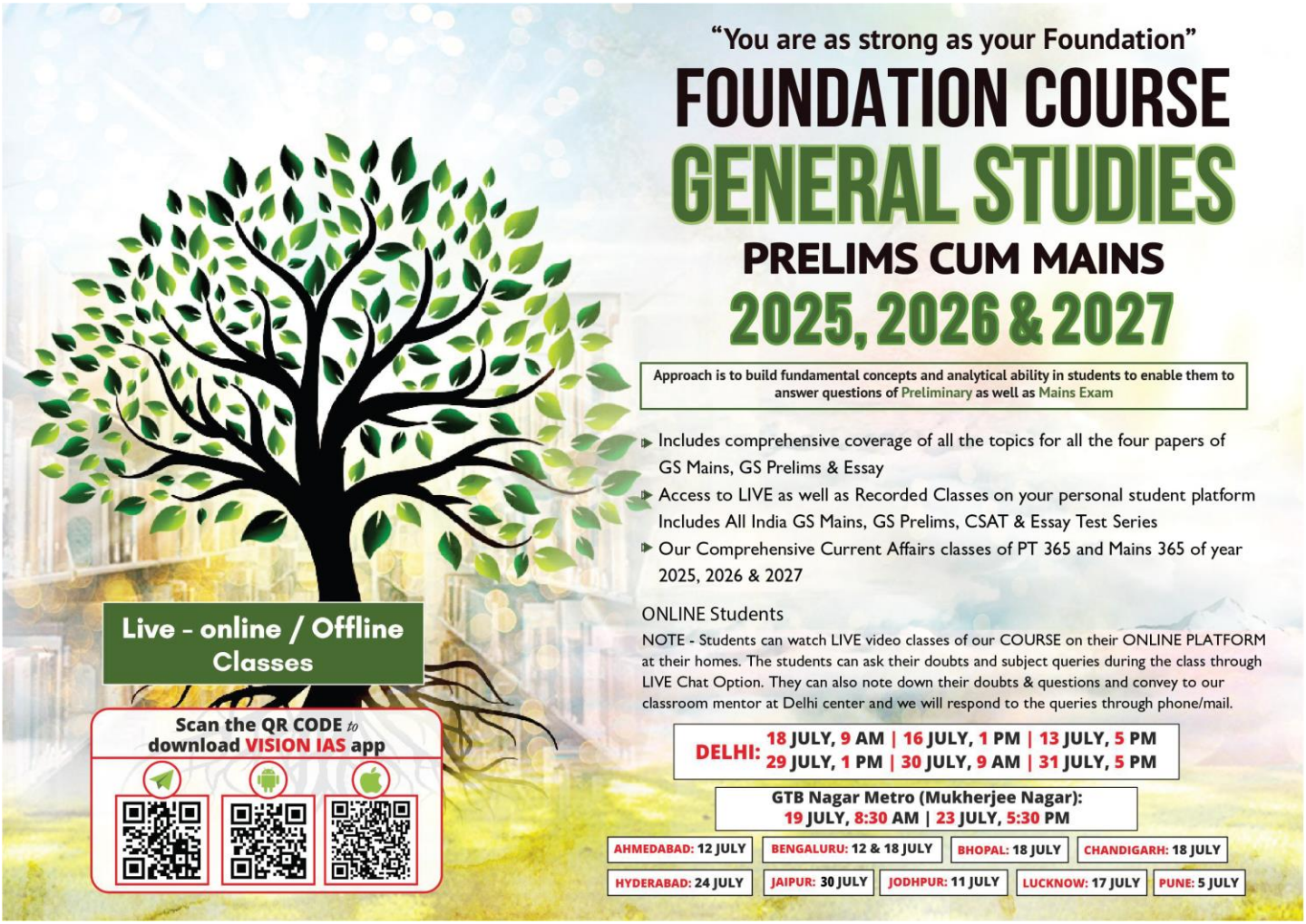
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PAPER	ESSAY	OPTIONAL - I & II	GS - I & II	GS - III & IV
DATE	24 AUG	25 AUG	31 AUG	1 SEP

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NOTE:

Dear Students,

Memorisation and recollection of information in Current Affairs is as important as understanding the articles. In order to enhance the learning outcomes from the Monthly Current Affairs Magazine, we are introducing following additions:

A thematic based colors has been used in the document in the boxes, tables etc to enable easy identification and recollection of various concepts and topics.

Questions are an important tool to assess and retain information. To enable this we are adding a Smart Quiz at the end of each section in the document for practicing the questions.

A wide variety of infographics have been added to ensure smoother learning experience and enhanced retention of the information. This will also help in effective presentation of information in the answer writing as well.

Places and persons in news are being presented in an objective manner through Maps, Tables & Pictures. This will help in easier recollection of factual information.



1. POLITY AND GOVERNANCE

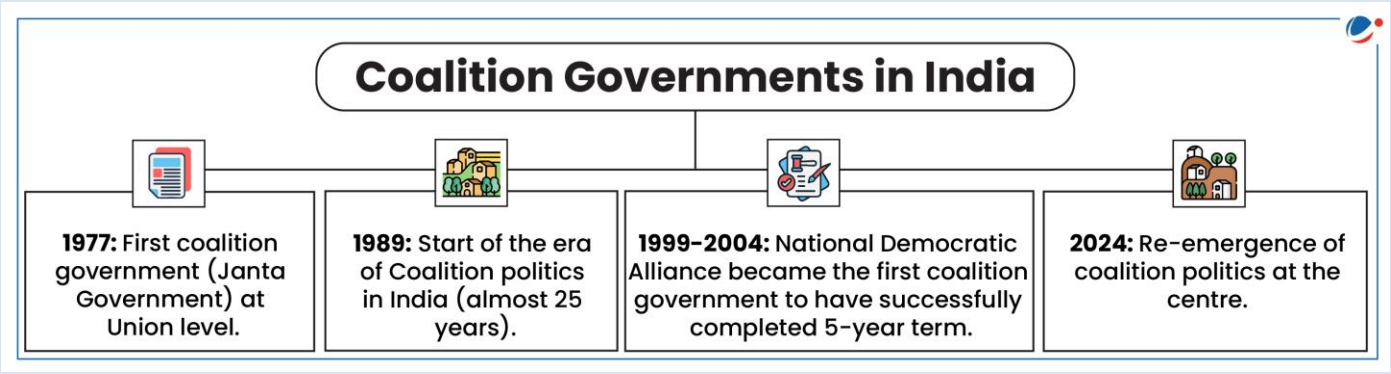
1.1. COALITION GOVERNMENT

Why in the News?

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.

About Coalition Government

- It 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.
- **Coalition governments in India can form through two main routes:**
  - **Pre-election alliances:** Parties form coalitions before elections, presenting a united front to voters.
  - **Post-election coalitions:** Parties negotiate to form a government after election results, often when no pre-election alliance gains a majority.



Significance of Coalition Government

- **Broader representation:** Coalitions often represent a wider range of interests and regions, potentially leading to more inclusive policies and programmes.
- **Checks and balances:** Coalition partners can act as a check on each other, potentially reducing the risk of authoritarianism and hasty policy decisions.
- **Consensus building:** Coalitions necessitate negotiation and compromise, potentially leading to more widely accepted policies.
- **Role of Lok Sabha:** Coalition governments result in more vibrant and substantive debates in the Lok Sabha, increased accountability of government.
- **Cooperative federalism:** Coalition governments have often included regional parties resulting in increased bargaining power of states and decentralized approach to governance.

Challenges due to Coalition Government

- **Political instability:** Divergent interests of coalition partners can lead to frequent disagreements and government instability. e.g., Fall of first NDA government in 1998 after just 13 months.
- **Policy paralysis:** Decision-making can be slow due to the need for consensus among coalition partners.
  - **e.g.,** Withdrawal of support by Left parties from the UPA-I government over Indo-US nuclear deal in 2008.
- **Myopic decision-making:** Frequent changes in coalition dynamics can result in hindering the implementation of long-term strategies.
  - **e.g.**, Frequent changes in the Human Resource Development Ministry during the 2004-2014 led to inconsistent policies in the education sector.
- **Compromise on ideologies:** Political parties may have to dilute their core ideologies to maintain the coalition.

- **Regionalism:** Regional parties in coalitions often leverage their position to push for state-specific benefits, allocation of resources to satisfy regional allies, etc.
- **Foreign policy**: Coalition dynamics can influence foreign policy decisions, particularly regarding regional issues.
    - **e.g.,** Stalled decision on Teesta Water Agreement in 2011.

Way Forward

- **Political stability:** Amend the Rules of Procedure of the Legislatures for adoption of a system of **constructive vote of no confidence**. (NCRWC)
    - **Constructive vote of no-confidence** means motion of no-confidence should be accompanied by a proposal of alternative Leader to be voted simultaneously.
    - **If one or more parties in a coalition realign midstream** with one or more parties outside coalition, then members of that party/ parties shall seek **fresh mandate from electorate**. (ARC-II)
- **Election of Prime Ministers**: Provide for a mechanism for election of the Leader of Lok Sabha, along with the election of Speaker, under the Rules of Procedure who may be appointed as the Prime Minister. (NCRWC)
- **Transparency in functioning of coalition**: Mandate regular **public reporting on the progress of Common Minimum Program implementation** and introduce **'coalition impact assessments'** for major policy decisions.
- **Long-term policy strategies:** Use of **constitutional bodies like Inter-State Council** and **non-partisan bodies like NITI Aayog** in national policy formulation that transcends coalition politics.

1.2. DEMAND FOR NEW STATES

Why in the news?

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

More on the news

- **Andhra Pradesh Reorganisation Act, 2014**, reorganizes the state of Andhra Pradesh by **creating a separate state called Telangana** with Hyderabad as its capital.
- The move for a separate Telangana state was motivated by **perceived regional inequality in the development.**
- Recently, Bhil tribe demanded an independent tribal state i.e., **Bhil Pradesh, comprising parts of Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra.**

Do you know

> After independence,**Andhra Pradesh was first state** to be formed on **linguistic basis** in 1953, following the death of freedom fighter, Potti Sriramulu.

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).

Factors driving Demand for New States in post-independence India

- **Linguistic diversity:** Language has been one of the major factors driving demand for creation of new states.
    - **For instance, creation of Maharashtra** and Gujarat in 1960.
- **Regional disparities**: Underdevelopment in specific regions prompts statehood demands.
    - **Example**: Demand for Vidarbha region of Maharashtra.
- **Cultural identity:** Various ethnic groups attempt to **protect and preserve their ethnic, social and cultural identity like language, race, language, customs** etc.
    - For example, the demand for the Statehood for the **Bodoland region of Assam has been raised mainly on the issue distinct tribal culture of the region**, which is different from rest of the State.

- **Administrative efficiency**: Smaller states are perceived to enhance governance and administrative efficiency.
  - Example: Demand of Harit Pradesh from Uttar Pradesh



State Reorganization Commission/Committees

- **S.K. Dhar Commission, 1948:** Recommended re-organization on basis of **administrative convenience** rather than linguistic factor.
- **JVP Committee (**named after its members Jawaharlal Nehru, Vallabhbhai Patel, and Pattabhi Sitaramayya)**, 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.
  - 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.**

Argument in favour for creation of new states	Argument in against for creation of new states
• **Effective administrative efficiency**: It leads to **proper utilization of resources**. ○ E.g. Telangana was able to utilise its water resources, resulting in **increase of paddy production** from 4.57 million metric tonnes (mmt) in 2015 to **over 20 mmt in 2023.** • **Innovation**: Smaller states can **experiment more easily with innovations in governance and service delivery**, which can be replicated across states if found to be successful. ○ E.g. Following the success of Organic farming in Sikkim, **Kerala Government has created** an **Organic Farming Mission** (in 2023) to turn the state into an organic farming hub. • **Trade**: Small States like **Uttarakhand, Himachal Pradesh and Goa tend to trade more than larger state** like Utter Pradesh, Madhya Pradesh etc (Economic Survey 2016-17). • **Better Development:** It resulted in narrowing regional disparities. ○ In Uttarakhand, number of **people living in multidimensional poverty has decreased** to 9.67 % from 17.67% between 2015-16 and 2019-21 (Multidimensional Poverty Index 2023, NITI Aayog).	• **Economic Strain:** Setting up a new state's administrative machinery, infrastructure, and institutions requires significant financial resources. ○ For instance, according to estimates, about Rs. 40,000 crore will be required to build infrastructure and various government buildings in new capital of Telengana (Amravati). • **Resource Allocation:** Dividing resources like water, power, or mineral wealth between a new state and the existing one can lead to inter-state disputes. ○ For instance, **bifurcation of Andhra Pradesh and Telangana** resulted in disputes over water sharing of river Krishna. • **Boundary Disputes**: Drawing new state boundaries can lead to **territorial disputes with neighbouring regions**. These disputes can be long-lasting and create tensions between communities. ○ For instance, Belgavi dispute between Karnataka and Maharashtra. • **Pandora box:** Creation of new states can further lead to the demand for and creation of other new states.

Way ahead

- **Development:** Steps should be taken for **equitable development of all regions** within existing states, address economic disparities and grievances that fuel demands for statehood.
- **Expert committee:** Creation of an expert committee **engaging all stakeholders** to investigate the demand/ impact of creation of new states.
- **Economic viability:** No new state should be created unless it has the resources or revenue to incur at least 60% of its expenditure from the day of its coming into existence.
- **Clear Guidelines:** Develop clear and objective criteria **focussing on economic and social viability** rather than political considerations for creation of new states.

1.3. INTERNAL EMERGENCY

Why in the news?

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

About Emergency

- Emergency is a situation when **democratic rights of people are suspended,** and central government assumes powers over state governments.
- Suspension of fundamental rights during emergency was incorporated from **Weimar Constitution of Germany**.
- Emergency Provisions are outlined in **Article 352 to Article 360** under **Part XVIII of Constitution.**
- Rationale behind the incorporation of these provisions is to **safeguard sovereignty, unity, integrity** and **security of country**, democratic political system, and Constitution.

Types of Emergencies

- **National Emergency**: President may, on advice of Cabinet headed by Prime Minister, issue a proclamation of emergency if **security of India or any part of country** is threatened by "**war or external aggression (external emergency) or armed rebellion" (Internal Emergency). (Article 352)**
    - Till now, **three times** an emergency has been imposed in India i.e., **1962, 1971 on the grounds of war** (India-China; India- Pakistan), and **1975 due to an internal disturbance.**

Note: This ground of **"internal disturbance" was substituted by "armed rebellion"** by **Constitution (44th Amendment) Act, 1978**.

- **President's Rule (State or Constitutional Emergency)**: An emergency due to failure of constitutional machinery in states. **(Article 356)**
- **Financial Emergency**: Due to threat to financial stability or credit of India or of any part of territory. **(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 the **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.**

Reasons for imposing Internal Emergency (1975-77)

- **Economic context:** Prices increased by 23 per cent in 1973 and 30 per cent in 1974. Such a high level of inflation caused much hardship to the people.
- **Gujarat and Bihar movements:** Students' protests in Gujarat and Bihar had far reaching impact on the politics of the two States and national politics.
- **Conflict with Judiciary:** This was also the period when the government and the ruling party had many differences with the judiciary such as appointment of Justice A. N. Ray as the Chief Justice of India.

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

- **Political Impact**
  - **Suspension of Civil Liberties**: Government gets the power to curtail or restrict all or any of the Fundamental Rights during the 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 the powers are concentrated in the hands of union government (Prime Minister Office). Thus, altering legislative power of states.
    - ✓ **42nd Constitutional Amendment Act (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** were conducted in major cities without adequate resettlement plans, displacing thousands of people.
  - **Impact on organisations:** Religious and cultural organizations like Rashtriya Swayamsevak Sangh, Jamaat-E-Islami, etc. were **banned on apprehension of disturbance to social and communal harmony**.
  - **Forced Sterilizations**: The push for population control and family planning **intersected with citizens' rights to personal autonomy and reproductive freedom**.
- **Institutional Impact:**
  - **Judicial Independence**: Independence of judiciary was compromised, with judges who were perceived as unsupportive of government being transferred or side-lined.
    - ✓ Government introduced **42nd constitutional amendment act, 1976** aimed at **limiting scope of judicial review**.
- **Erosion of trust:** Arbitrary use of powers during Emergency eroded citizens' trust in governmental institutions.

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**: 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 fundamental right** 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**.

Do you know

> In May 1977, the Janata Party government appointed **Justice J.C. Shah** commission, to inquire "into several aspects of allegations of abuse of authority, excesses and malpractices committed and action taken in the wake of the Emergency proclaimed on the 25th June, 1975".

Conclusion

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

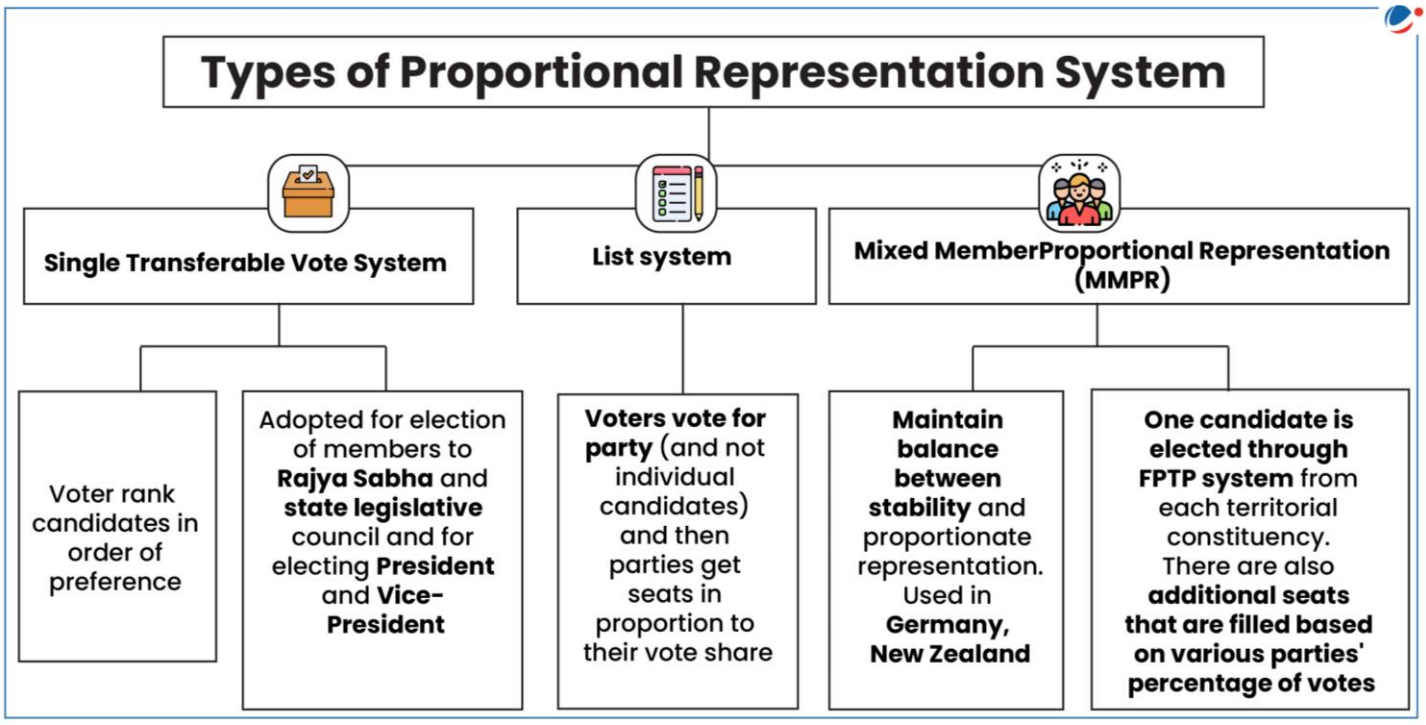
1.4. PROPORTIONAL REPRESENTATION

Why in the news?

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.

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

	First-Past-The-Post (Simple majority system)	Proportional Representation
Geographical unit	• Country is divided into **small geographical units** called constituencies or districts.	• **Large geographical areas are demarcated as constituencies**; the 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 the party
Seat Distribution	• A party **may get more seats than votes** in the legislature. • The winning candidate may not secure the majority (50%+1) of votes.	• Every party gets **seats in the legislature in proportion to the percentage of votes** it receives.
Examples	• **U.S., U.K., Canada, India** (Lok Sabha and State Legislative Assemblies).	• **Israel, Netherlands.**
Benefits	• **Simple to understand** for common voters. • Facilitates the formation of a **stable government.** • Encourages voters from **different social groups to come together** to win an election in a locality.	• **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	• **Over or under-representation** of political parties compared to their vote share. • Does **not ensure due representation for minorities (**small groups).	• 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 the 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.

Way ahead

- **Law commission Recommendation (170th report): I**ntroduction of MMPR system on an experimental basis. It had suggested that **25% of seats may be filled through a 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 (like Meghalaya) about FPTP system dominance by larger States.
- **Increasing number of seats based on 2026 Delimitation Exercise**: Over past five decades, uneven population growth across regions **complicates allocating Lok Sabha seats solely by population**, potentially **undermining federal principles** and causing state disenchantment.

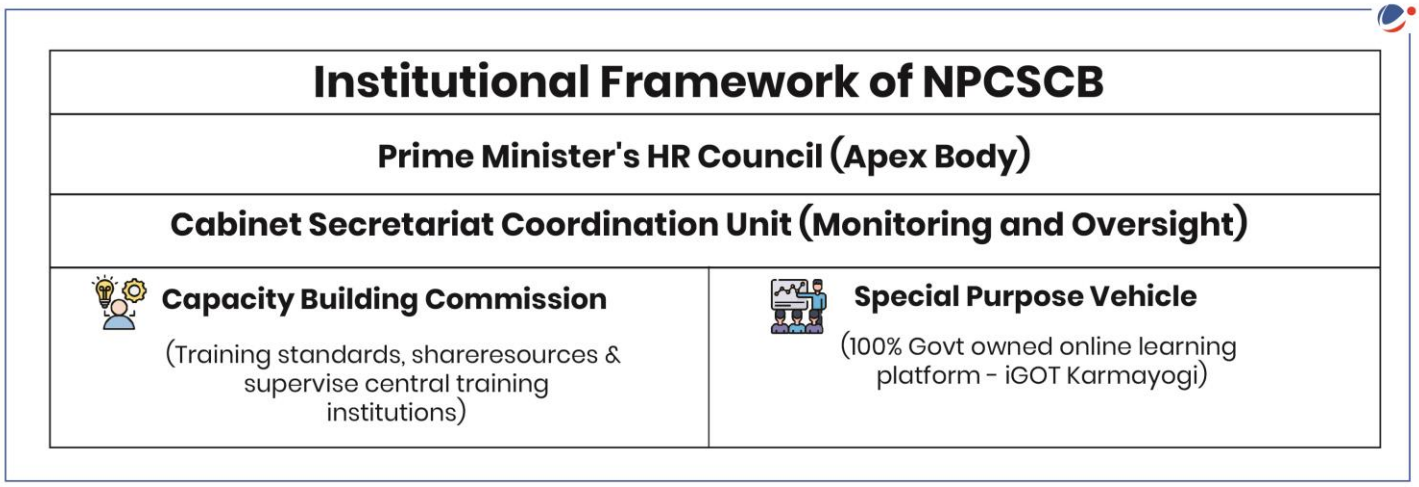
1.5. MISSION KARMAYOGI

Why in the news?

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

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.
- **NPCSCB cover all civil servants** (including contractual employees) across different ministries, department organisations and agencies of the Union Government.
  - The willing state governments will also be enabled to align their capacity building plans on similar lines.



- **Guiding Principles of Mission Karmayogi**
  - **Shift from rule to role based training and capacity building:** This means a shift from rule-based, supply-driven capacity building to role-based, demand-driven capacity building.
  - **Moving to a competency driven approach for capacity development**: Competencies can be defined as a combination of attitudes, skills and knowledge (ASK) that enable an individual to perform a task or activity successfully in a given job.
  - **70-20-10 Mandate**: 70% of learning comes from on the job experiences and reflections, 20% is derived from working with others; and 10% comes from planned training.

    - **Link goal setting, planning & achievement**: Mission Karmayogi aims to align learning and capacity building with organisational goals and career goals of individual officials and performance measurement.
    - **Establishment of unbiased systems of evaluation**: Under Mission Karmayogi, there will be objective, fair and independent assessments to determine performance.
    - **Democratising and enabling continuous, lifelong learning opportunities**.
    - **Move beyond silos in the Government**
- **Integrated Government Online Training (iGOT) Karmayogi Platform:** Act as a launchpad for Mission Karmayogi.
    - It is a comprehensive **online portal to guide government officials** in their capacity building journey.
    - Performance of all users of iGOT-Karmayogi platform is **monitored and evaluated on key performance indicators** including individual learner, supervisor, content provider and creator etc.

Significance of NPCSCB - Mission Karmayogi

- **Professional Growth**: Evolving roles of civil servants **offer opportunities for officers** to continuously build and **strengthen their behavioural, functional and domain competencies** enhancing professional growth.
- **Uniform Training Approach**: It **harmonises training standard nationwide**, promoting a uniform approach in managing and **regulating capacity-building** through collaboration and shared resources.
- **Reducing Training Cost**: Encourage Central Ministries and departments to **prioritize online courses, invest resources in co-creating and sharing learning processes**, and reduce spending on foreign training.
- **Inspiring to-be Civil Servants:** The values and ideals propagated by Mission Karamyogi would inspire ethical conduct in aspiring Civil Servants as well. This could help check the rising cases of dishonesty in Civil Services examination (refer to Article 9.2 of the magazine for detailed analysis on frauds in Civil Services Examination).
- **Ease of Doing Business**: Creating policies and delivering services conducive to economic growth.
- **Citizen-centric:** The shift from traditional rule-based governance to a more dynamic, role-based approach will to address challenges like working in silos, foster teamwork, and enhance service delivery.

Other initiatives taken for Civil Servants

- **National Standards for Civil Service Training Institutions (NSCSTI):** It was **developed by Capacity Building Commission** to create a baseline for Central Training Institutes (CTIs) on their current capacity for **elevating their quality** and **capacity of training delivery and** to **harmonise standards for training.**
    - Standards will **equip CTIs to help civil servants** tackle emerging challenges of 21st century.
- **Aarambh**: Launched by Government of India in 2019, it is first ever common foundation course for civil servants training.
- **National Training Policy**: It was adopted in 1996 and reviewed in 2012 to **develop professional, impartial and efficient civil servants** that are responsible to needs of citizens.

Concerns associated with NPCSCB - Mission Karmayogi

- **Scalability:** Given the vast number of government officials (1.5 crore) across different levels, effectively scaling training and capacity-building initiatives could be difficult.
- **Over-centralization:** It emphasis on training and learning through a centralized institutional framework may lead to **resistance from states**, affecting implementation and desired outcomes.
- **Resistance:** Indian **bureaucracy is alleged to be status-quoist**, reluctant to change and thus, a reform at this scale may face several resistances within the bureaucracy.
- **Relevance to Job Functions:** Designing training modules for civil servants, tailored to address the specific issues, needs, and demands of citizens poses a challenge.
    - For example, the issues faced by civil servants in Himalayan states differ significantly from those in desert areas.

Conclusion

Mission Karmayogi is a bold initiative of Government of India to democratize the training process and address the issues in existing system, such as 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.

Capacity Building Commission

- It was constituted through Gazette of India in 2021, issued by Department of Personnel and Training (DoPT).
- It was established as an **independent body with complete executive and financial autonomy**.
- CBC comprises of **three Members and is supported by an internal Secretariat**. Secretariat is headed by an officer in grade of Joint Secretary to GoI (designated as Secretary to CBC).
  - **Members have been appointed from diverse backgrounds** to ensure adequate representation of multiple perspectives like those of state governments, public sector, private sector, academia etc.
- Its core purpose is to **build credibility and shape a uniform approach** to capacity building on a collaborative and co-sharing basis.
- **Functions of CBC**
  - **Facilitate preparation of Annual Capacity Building Plans** of departments, ministries and agencies.
  - Preparing an **Annual State of Civil Services Report**.
  - **Approving Knowledge Partners** for Mission.
  - Evolving a **harmonious, de-siloed approach** to capacity building initiatives.

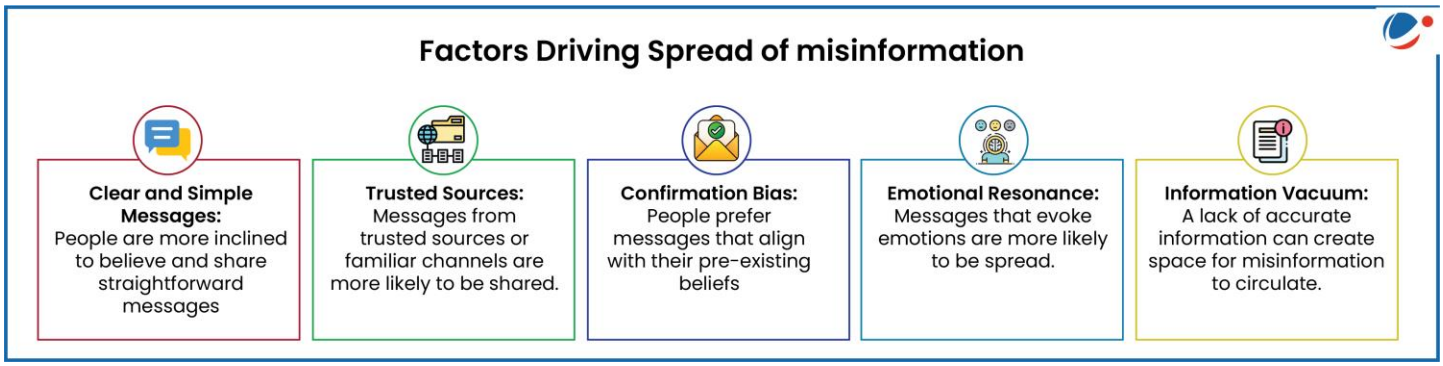
1.6. ONLINE MISINFORMATION

Why in the News?

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

About Online Misinformation

- Misinformation refers to **false or misleading content shared without harmful intent,** though it can still be harmful.
  - False or misleading content spread **with the intent to deceive or gain economically or politically, causing public harm** are termed as disinformation.
- The speed and ease of spreading **posts on social media exacerbate the problem,** making it difficult to provide corrective information.
  - **Around half of the world's population has internet access,** enabling the rapid creation, sharing, and consumption of information.



What could be negative impacts of online misinformation

- **Information Bubbles:** Algorithms create information bubbles that **reinforce prejudices** such as racism, misogyny, and various forms of discrimination.
- **Threats to Democracy:** Misinformation can influence election outcomes by misleading voters about candidates, undermines trust in public institutions and the 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.**
  - Misinformation on social media about **fertility issues, increased rates of cancer, and potential autoimmune diseases** was spread regarding **COVID-19 vaccines.**

- **Adverse Impact on Economy:** Online misinformation can create panic or unrealistic expectations in financial markets within a short span of time causing unnecessary volatility and potential economic losses.

Challenges in tackling online misinformation

- **Rapid Digital Platforms:** The unprecedented speed of digital platforms, including artificial intelligence, 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:** Simple and humorous memes, tweets, and multimedia messages (videos or audio) are easily digestible for all audiences, including those less accustomed to text-heavy content.

Initiatives taken to tackling online misinformation

- **Social Media 4 Peace: By UNESCO** aims to strengthen the **resilience of societies** to potentially harmful content spread online in particular hate speech inciting violence.
- **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** prevents intermediaries from hosting, storing or **publishing any unlawful information**, which is prohibited **under any law.**
- **Information Technology (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
- **PIB-Fact Check Unit (FCU):** FCU is mandated to counter misinformation on Government policies, initiatives and schemes either SUO MOTU *or* under a reference via complaints.

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 robust and **innovative digital trust and safety practices**, across languages and contexts with a focus on protecting **vulnerable groups** (women, older persons, 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** and should ensure **interoperability with services from different providers.**
    - Focus on **digital literacy training,** especially for new Internet users and those lacking access.
- **Independent, Free and Pluralistic Media:** States and tech companies should ensure press freedom and journalist safety. Support public interest news organizations, journalists, and media workers,
- **Transparency and Research:** Increase transparency by tech companies to **understand information spread, data use, and risk management.**
    - **Improve data access and quality for diverse researchers** while ensuring privacy to fill research gaps and inequalities. Protect academics, journalists, and civil society from fear or harassment.

At a time when billions are exposed to false narratives, distortions, and lies, it is crucial to prioritize a safer and more trustworthy information ecosystem. In the words of UN Secretary-General António Guterres, "**No one should be at the mercy of an algorithm they don't control, which was not designed to safeguard their interests,** and which tracks their behaviour to collect personal data and keep them hooked".

Related News

World Summit on the Information Society (WSIS)

India participated in International Telecommunication Union's (ITU) WSIS+20 Forum High-Level Event 2024 in Geneva, Switzerland.

- **WSIS+20 Forum** marks 20 years of progress made in implementation of outcomes of WSIS, which took place in two phases in Geneva (2003) and Tunis (2005).

About WSIS

- WSIS forum is **co-organised annually by ITU, UNESCO, UNDP and UNCTAD** and **co-hosted by ITU and Swiss Confederation.**
- **Aim**: Create multi- stakeholder platform to **address issues raised by information and communication technologies** through inclusive approach at national, regional and international levels.
- **Goal:** To build a people-centric, inclusive and development-oriented Information Society, enabling universal access, utilization, and sharing of information.

1.7. NEWS IN SHORTS

1.7.1. NEW CRIMINAL LAWS COME INTO EFFECT FROM JULY 1

The three new criminal laws were passed by Parliament in 2023.

- **Section 106(2) of the Bharatiya Nyaya Sanhita (BNS),** which provides for punishment in **hit and run cases, has been put on hold.**
- **Significance of new criminal laws**
  - **Reformative justice:** Such as community service instead of imprisonment.
  - **Modernising the justice system:** for ex Indian Penal Code (1860) is outdated and does not reflect current norms of criminal jurisprudence.
  - **Seamless flow of information:** Designed to improve coordination and collaboration between parties involved in investigation and judicial proceedings.

New Act	Replacing	Major Points
Bharatiya Nyaya Sanhita 2023	Indian Penal Code,1860	• **Community services for petty offense** such as including attempted suicide to obstruct public servants' duties. • **Sexual acts against women** under 18 are classified as rape, regardless of consent. • **Terrorist act** is defined as a separate offence.
Bharatiya Nagarik Suraksha Sanhita 2023	Criminal Procedure Code, 1973	• **Detention of undertrials:** Accused detained for half the maximum sentence must be released on bond, except for death penalty or life imprisonment cases, or those with multiple pending charges. • **Signatures and finger impressions:** Magistrate of the first class can order an accused person, to give specimen **signatures or finger impressions or handwriting or voice samples.**
Bharatiya Sakshya Adhiniyam 2023	Indian Evidence Act, 1872	• **Electronic and digital records** are granted equal legal status as paper documents. • **Oral evidence** comprises all statements, including electronic ones, permitted or required by the Court from witnesses regarding matters under inquiry.

To know more about the 3 criminal laws, refer to Article 1.1 Criminal Law Reform Acts of the December 2023 Monthly Current Affairs Magazine.

1.7.2. TELECOMMUNICATIONS ACT, 2023

Multiple sections of Telecommunications Act, 2023 came into effect.

It aims to amend the law relating to development, expansion and operation of telecommunication services and telecommunication networks and is guided by **principles of Inclusion, Security, Growth,** and **Responsiveness**.

- It repeals **Indian Telegraph Act 1885** and **Indian Wireless Telegraphy Act 1933** owing to huge technical advancements in telecom sector and technologies.

Salient features of Act that comes into force

- **Define various terminologies like telecommunication, spectrum, user** etc., thereby reducing uncertainties and improving investor confidence and ease of doing business.
- **RoW (Right of Way) framework** shall be granted on a **non-discriminatory** and **non-exclusive basis**.
- **Central Government may notify standards and conformity assessment measures** for telecommunication services, networks, security, distribution and sale of telecommunication equipment; etc.
- **Protection of users (by Central government)** which include prior consent to receive specified messages like advertising messages, creation of Do Not Disturb registers, etc.
- **Expands scope of Universal Service Obligation Fund** which will now become **Digital Bharat Nidhi** (under control of central government).
    - This fund can be used to **support research and development of telecommunication services**, technologies, products and pilot projects.

Significance of Act

- Enhancing **security and quality** in telecommunication services.
- Gives **greater emphasis to consumer protection** and **national security.**

1.7.3. THE POST OFFICE ACT 2023 COMES INTO EFFECT

It repeals the **Indian Post Office Act, 1898.**

- **Provisions of the Post Office Act, 2023**
    - **Director General of Postal Services (DGPS)** will be appointed to head India Post.
        - ✓ DGPS will have powers to make regulations on matters such as **charges for services, supply and sale of postage stamps.**
    - **Powers to intercept postal articles:**
        - ✓ Government can intercept an article transmitted through India Post on specified grounds
        - ✓ Grounds include **security of the State, friendly relations with foreign states, public order, emergency, or public safety**.
    - **Exemptions from liability**: Post office will not incur any liability with regard to its services, except such liability as may be prescribed with regard to a service provided by the Post Office.
    - There are **no penal provisions prescribed** in the Act.

- **Importance of the Act**
    - It creates a simple legislative framework for delivery of **citizen centric services, banking services and benefits of Government schemes** at the last mile.
    - It enhances the **ease of doing business and ease of living.**

Postal System During British Era

- The East India company opened its **first post office in 1727.**
- **Lord Dalhousie** recognized the Indian Post Offices as a **separate organization of national importance.**
- Present site of the **General Post Office of Kolkata** was the site of the **first Fort William.**

1.7.4. 74 WOMEN MPS IN 18TH LOK SABHA

Election of 74 women to 18th Lok Sabha (LS), accounting for 13.6% representation in Lok Sabha, is a **slight dip** in women representation as **78 women were elected to 17th LS (14.4% representation).**

Status of women representation in Legislature

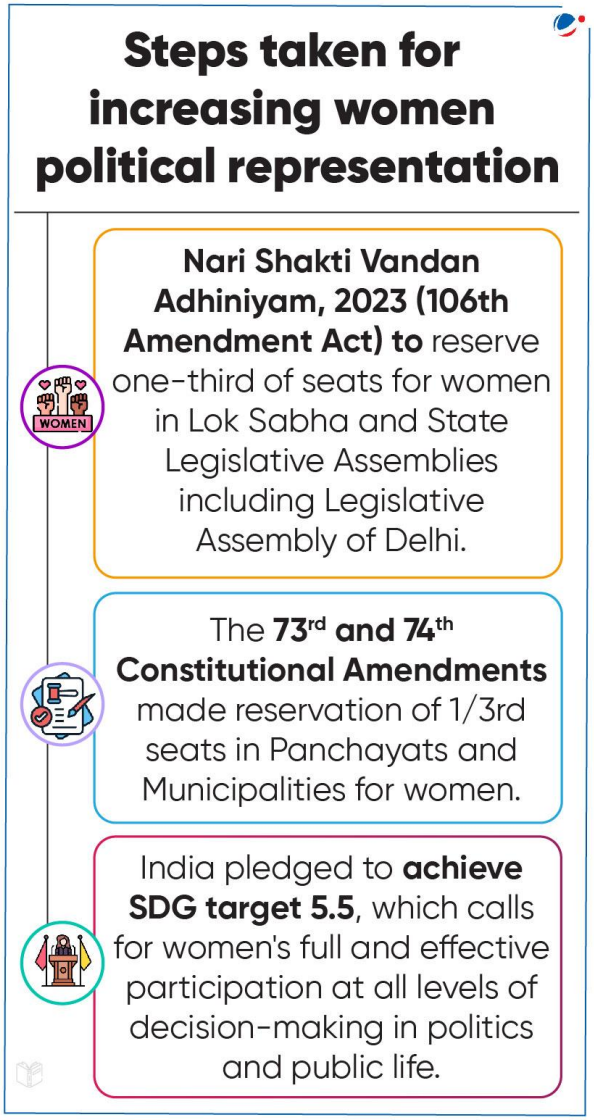
- **9.7%** of 797 women contestants **won in 18th LS** elections while **in 17th LS** elections, **10.74%** of 726 women contestants won.
- Women's representation in LS **increased** from **5% in first LS** to its **highest in 17th LS (14.4%).**
- Presently, women members constitute **14.05% of Rajya Sabha members**.
- Globally, share of women in national parliaments is **26.9%.**

Significance of women representation:

- Women legislators **perform better in their constituencies** on economic indicators than their male counterparts.
- Accounting for around 50% population, legislative representation is **fundamental to political empowerment**.
- Women are **less likely to be criminal and corrupt**, more efficacious, and less vulnerable to political opportunism.

Challenges to women's legislative representation:

- **Societal Prejudices**, male dominated political structures, and family obligations.
- **Structural disadvantages:** Election campaigns are costly, time-consuming and are marred by inappropriate commenting, hate speeches, abusive threats and muscle power.
- **Internalised patriarchy:** Women themselves are often influenced by patriarchal societal norms.



1.7.5. SELF DECLARATION CERTIFICATES

Ministry of Information and Broadcasting declares Self-declaration certificate (SDC) mandatory for all new advertisements

- As per the Supreme Court (SC) directive, no **advertisement will be permitted to run** on television, print media, or the internet **without a valid SDC.**
- SDC, signed by **an authorized representative of the advertiser/advertising agency**, needs to be submitted through these portals.
  - **Broadcast Seva Portal** for TV and Radio Advertisements.
  - **The Press Council of India's portal** for print and digital/internet advertisements.
- **SDC will certify that the advertisement:**
  - Does not contain **misleading claims.**
  - Complies with all **relevant regulatory guidelines,** including:
    - ✓ Those stipulated in **Cable Television Networks Rules, 1994.**
    - ✓ The **Norms of Journalistic Conduct of the Press Council of India.**



Significance of the step

- **Ensure transparency and accountability:** By preventing misleading advertisements being published with no accountability on the part of the manufacturers, promoters and advertisers.
- **Ensure consumer protection:** By preventing violation of the rights of the consumers, unfair trade practices and false advertisements which are prejudicial to the interest of the public.
- **Ensure better implementation of Legislations and Rules:** Like complaints registered under Guidelines for Prevention of Misleading Advertisements and Endorsements of Misleading Advertisements, 2022.

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2. INTERNATIONAL RELATIONS

2.1. INDIA: GLOBAL PEACEMAKER

Why in the news?

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

About Peace summit

- **Objective**: To develop a common understanding of a path towards a just and lasting peace in Ukraine.
- **India's Representation**: The **Secretary of the Ministry of External Affairs attended the summit**.
  - India's participation aligns with its consistent approach to facilitating a **peaceful resolution through dialogue and diplomacy.**
  - **India abstained from signing the joint communique released at the summit**, advocating for practical engagement through dialogue between the conflicting parties.

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, such as trade disruptions, inflation, energy crises, food insecurity, supply chain disruptions etc.
  - Global impact of wars like, could derail its vision of becoming a developed economy by 2047.
- **Ineffective UN System**: The United Nations Security Council has traditionally been responsible for global peacemaking, but its **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,** given the alleged connections between Pakistan's nuclear weapons program and North Korea's ballistic missile program.

India's Contributions/Potential to promoting International Peace

- **Voice of the Global South**: India acts as a **bridge between Global South and North**, clearly evident from its efforts to include **African Union (AU) into G20**, amplifying southern voices.
  - It is also a clear sign of its**.**
- **Non-Alignment Movement (NAM)**: Established India as a neutral mediator during the Cold War.
  - E.g., India helped Austria to become free from the Soviet occupation in 1953 utilising India's neutral and diplomatic tools with Soviet Union.
- **Conflict Resolution Experience:** India's experience in addressing both internal and regional conflicts, positions it as a potential peacemaker. Examples-
  - India's role **in stabilizing Afghanistan, mediating the Sri Lankan civil conflict**, and **resolving domestic issues in Mizoram** demonstrates its capacity for effective conflict resolution capabilities.
- **Growing influence in emerging global order:** India's healthy bilateral relations with various nations have helped develop a positive image in international order.
  - E.g., **Iran asked India to play peacemaker role to de-escalate tension with US**, after killing of Iran military commander in 2020.
- **Peacebuilding through Development Partnership:** E.g., in Africa and Afghanistan through ITEC Programmes, building infrastructure (such as Salma dam), etc.
- **Cultural Diplomacy**: India's **civilisational ethos** is widely recognised and respected and the **philosophy of 'Vasudhaiva Kutumbakam'** resonate globally, promoting harmony.
- **Multialignment**: India's potential as a **bridging power** stems from its longstanding commitment to **engaging all major poles of influence** (Russia, USA, Israel, Iran, Japan) in the international system.

Know the term

UN peacekeeping: UN peacekeeping is a unique global partnership which brings together the General Assembly, the Security Council, the Secretariat, troop and police contributors and the host governments in a combined effort to maintain international peace and security.

- **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. (refer to the infographic)

India's contributions to UN peacekeeping missions		
Participation	**Troops**	**Training**
• Participated in **>49 missions**. • Currently, Indian Armed Forces deployed across **9 countries in peacekeeping missions like** UN Disengagement Observer Force (UNDOF) (Golan), UN Interim Force in Lebanon (UNFIL), etc**.**	• 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**).	Indian Army established a **Centre for UN Peacekeeping (CUNPK) in New Delhi** to impart niche training in peacekeeping operations.

India's peacemaking role in Ukraine-Russia War

- **Humanitarian aid**: India had provided several consignments of humanitarian assistance to Ukraine comprising of essential medicines, medical equipment etc.
- **Diplomatic balancing act**: **India's non-aligned position and well-established diplomatic relationships with Ukraine** and **Russia** provide it with a solid foundation to spearhead **advocacy for peace** in the region.
  - While India has not explicitly condemned the Russian invasion, it has called for an international probe into the **Bucha massacre** and expressed **concern over nuclear threats** issued by Russia.
- **Mediator: India's ability to speak to Russia as a trusted partner** means it is uniquely positioned to **play a mediator** in the on-going conflict.

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

- **Regional Conflicts**: Persistent tensions with neighbouring Pakistan and unresolved border disputes with China can limit India's ability to be perceived as an impartial peacemaker.
- **Domestic Challenges**: Internal issues such as internal conflicts, insurgencies, and political instability detract from India's ability to project itself as a model for peace.
  - For instance, **UN raised alarms on human rights violations in Indian state of Manipur.**
- **Resource Constraints**: Due attention and investment needed for domestic development challenges like poverty and infrastructure deficits.
- **Geopolitical Alignments**: India's strategic partnerships, particularly **with the United States and its involvement in the Quad**, may be **perceived as aligning with Western interests**, potentially undermining its neutrality in certain global conflicts.
- **Diplomatic Capacity**: Compared to established global powers like USA and UK, India's diplomatic network and influence are relatively limited, affecting its capacity to mediate complex international disputes effectively.
- **Passive involvement:** India's involvement in Russia-Ukraine has largely been passive, whereas China proposed a **set of principles for ending** the conflict in Ukraine.

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.**

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.
  - **Arab League** was founded in 1945 to promote **regional cooperation** and resolve disputes. It consists of countries from Middle East and North Africa.

2.2. RISE OF MINILATERALS

Why in the News?

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



More on the News

- 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 the US-Japan-South Korea trilateral etc.**
- Its formation has highlighted the **growing preference for minilateralism** as the means of cooperation in the global world order.

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 behind rise of Minilaterals

- **Failure of the Multilateral Institutions**:
  - Existing multilateral institutions are facing difficulties to address new and emerging global challenges such as **climate change, cyber security etc.**
    - ✓ E.g. **ASEAN members** failed to condemn Chinese action in South China Sea.
  - **Heightening Great-Power Rivalry** impeding consensus **E.g. Dysfunctional WTO's dispute settlement system**, demand of reforms in the UN security council etc.
  - **Changing 'Balance of Power' and emergence of more aggressive and assertive China** is leading to emergence of groupings such as **QUAD, AUKUS,** etc.
  - **Fallout of COVID-19 pandemic which** revealed vulnerabilities of multilateral institutions. **E.g. WHO handling of the Pandemic.**
  - **Tyranny of Majority:** Developed countries view the high bargaining power of the developing countries as tyranny of the majority. E.g. Developing countries like USA disagree with demand of Common but differentiated responsibilities (CBDR) principle by developing countries in trade and climate actions.
- **Advantages of Minilateralism**
  - **Pragmatic alternative to cumbersome multilateralism** as it allows increased flexibility and agility in decision making, striking convergences.
  - **Issue based cooperation** allows like-minded countries to come together **E.g. Supply-Chain Resilience initiative between Australia, India, and Japan** etc.
  - **De-globalization and rise in protectionist tendencies** makes it difficult to cooperate on multilateral platforms: **E.g. US-China Trade War.**

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 order.
- **Differing national interests, threat perceptions, and desires for alignment.** For example, multiple territorial and border disputes exist in the region, **such as the Indo-China border dispute and the 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.
- **Little tradition of the region (except few) to be a part of formal military alliances** E.g. NATO

Benefits of Minilaterals for India

- **Maintaining strategic autonomy, enhance its policy of multi-alignment** and ensure regional security.
  - **E.g. QUAD partnership** between Australia, India, Japan, and the United States is committed to supporting an open, stable and prosperous Indo-Pacific that is inclusive and resilient.
- **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** for reform in global institutions and South-South Cooperation
- **Co-opting partners with similar interests** in the Indo-Pacific framework can help in addressing specific issues**.**
  - **E.g., Australia, France, and India trilateral** focuses on regional security; **India-Iran-Armenia Trilateral-** to boost International North-South Transport Corridor (INSTC) 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).
- **Restructuring the China-centered Asian integration** by encouraging the shift of industrial supply chains out of China and building new coalitions.
  - E.g. "Chip 4" semiconductor alliance (Japan, South Korea, Taiwan, and the United States)
- **Other benefits:**
  - **Maximize return on the geopolitical rivalry between the United States and China** by partnering with different countries on different issues.
  - **Cement India's growing centrality in the emerging Indo-Pacific strategic architecture** by an increased presence in smaller regional coalitions.

Challenges with Minilaterals

- **Legitimacy and inclusiveness:** Lack of inclusiveness can undermine interests of countries in Global South and impact their legitimacy.
  - **E.g. India-France-Australia Trilateral** excludes various members of Indo-Pacific region.
- **Limited resource and capabilities:** Smaller groups lack sufficient collective resources 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.
  - **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 r**educed accountability in global governance.**
  - E.g. SCRI (Australia, India, and Japan) countries have differences in their trade and economic outlooks**.**
- **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.
  - Moreover, they may have a detrimental effect on countries that are not part of negotiations.
  - E.g. **WTO is an consensus based organisation and has proper structural mechanisms**
- **Diminished sanctity of multilateral frameworks** by disrupting process of international interdependence and globalisation.
  - This may lead to fragmentation of the global governance mechanisms. E.g. **Ambiguity of QUAD's strategic interests to curtail Chinese influence.**

Conclusion

As India should embrace the concept of **Minilateralism along with Multilateralism** in line with philosophy of **Sarvajan Hitaya Sarvajan Sukhaya (Everyone's benefit, everyone's happiness).** Moreover, India should keep **pushing for**

reforms at the multilateral level to safeguard a universal rules-based framework while utilising the minilateral route in the short term.

2.3. INDIA-BANGLADESH RELATIONS

Why in the News?

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



Key outcomes of the Visit

Both countries signed MoU for cooperation in the various areas:

- Shared Vision for **'India-Bangladesh Digital Partnership'**
- **'India-Bangladesh Green Partnership' for a sustainable future**
- MoU on **Maritime Cooperation, Blue Economy and Oceanography**
- Commercial agreement between NPCI and Bangladesh Bank for launch of UPI.
- **Joint Technical Committee** for discussions on renewal of the Ganga Water Treaty

Significance of India- Bangladesh relations

For Both Countries

- **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.
  - **Bilateral trade stands at USD 14.01 billion (2023-24**).
- **Security and Border Management:** Both countries actively cooperate on police matters, anti-corruption activities and issues of illicit drug trafficking, fake currency, human trafficking, among others.
  - **Examples of Defence Cooperation**: Military exercises like **SAMPRITI and MILAN.**
- **Peaceful and cooperative border managements:** Both countries cooperate for the security of 4,096 kms long international border focusing on border fencing, joint inspection of boundary pillars, etc.
  - **Land Boundary Agreement (2015) and Delimitation of Maritime boundary** are examples of peaceful resolution of boundary disputes.
- **Convergence for Sub-Regional Cooperations:** Both countries have share vision for the Indo-pacific in terms of maritime security and development of ocean economy.
  - **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
- **Cultural and People to People Relations:** The Indira Gandhi Cultural Centre and the Indian Cultural Centre in Dhaka both play an important role in celebration of common cultural links.

Significance for India

- **Internal connectivity**: Easier access to India's North-Eastern states. **E.g. Akhaura-Agartala cross-border rail link**
- **Regional integration:** Bangladesh is situated at the convergence of our **'Neighbourhood First' Policy, Act East Policy, Vision SAGAR and Indo-Pacific Vision.**
- **Help in India's vision for regional leadership:** By countering China's assertive regional presence.

Significance for Bangladesh

- **Developmental partnership:** In last 8 years, India has **extended ~US$ 8 billion of** Lines of Credit (LOC) for Bangladesh.

- **Human Resource development**: India trains Bangladesh's Civil Service officials, police officials
- **Humanitarian assistance and disaster relief (HADR):** Vaccine Maitri (Covid-19 vaccines)

Challenges in Bilateral Relationship

- **River Water Dispute:** Absence of proper mechanism for sharing of interstate waters. **E.g. Teesta.**
- **Role of China:** China is Bangladesh's strategic partner and its largest arms supplier. Moreover, military exercises such as **China-Bangladesh Golden Friendship 2024** further raise concerns for India.
- **Internal Security Issues:** Illegal migration from Bangladesh as well as from Myanmar **(E.g. Rohingyas) have been** causing conflicts in India, especially in the Northeastern region.
- **Rising Radicalization and ill treatment of minorities in Bangladesh:** It could impact security of Bangladesh with consequences for India as well.
- **Impact of India's domestic policies:** Policies like Citizenship Amendment Act (CAA) and National Register of Citizens (NRC) may affect India-Bangladesh relations.

Recent developments in India-Bangladesh Bilateral Relations

- **Regional cooperation:** Bangladesh joined **Indo-Pacific Oceans Initiative.**
- **Power and Energy cooperation: India-Bangladesh Friendship Pipeline** (transports High-Speed Diesel to Bangladesh), **Maitree Super Thermal Power Plant** (supplies electricity to Bangladesh grid)
- **Partners in Digital Public Infrastructure:** MoU on Cooperation in Digital Payment mechanisms was signed between National Payments Corporation of India (NPCI) and Bangladesh Bank for facilitation of cross border UPI payments.
- **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/

Steps to be taken

- **Early commencement of negotiations for a Comprehensive Economic Partnership Agreement (CEPA),** early operationalization Special Economic Zones (SEZs) offered by Bangladesh to India.
- **Hydro diplomacy and conclusion of Water Sharing Treaty** especially Teesta to resolve transboundary river management.
  - Joint Rivers Commission can be used to formulate framework for interim water sharing.
- **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. (World Bank, 2021).
  - E.g. Early operationalization 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** to expand reach of projects and programmes.
- **Cross border immigration management** through digitalization at grass root level.

Conclusion

India-Bangladesh ties should move to next level, based on **Shared Vision of Connectivity, Commerce and Collaboration.** By recognizing each other as indispensable partners, both can realize their respective national development visions of **"ViksitBharat2047"** and "**Smart Bangladesh Vision 2041"**.

2.4. GROUP OF 7 (G7)

Why in the News?

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

More on the News

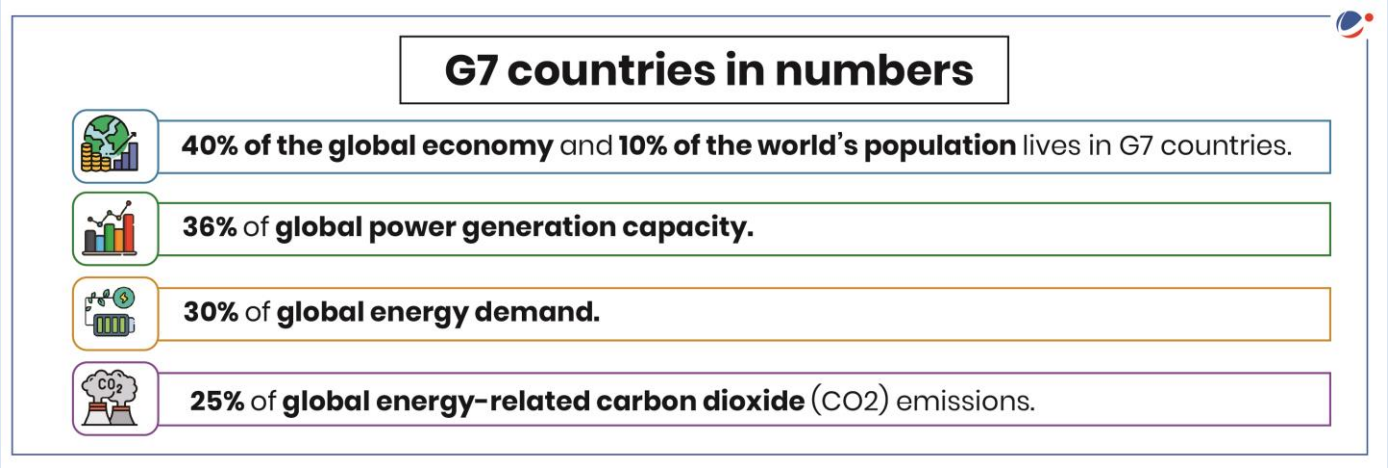
- **Key Highlights of India's Speech:**
  - **Technology:** To Convert technology monopolies into mass usage.
  - **Energy:** India is the first country to fulfil all the commitments made under COP before time.

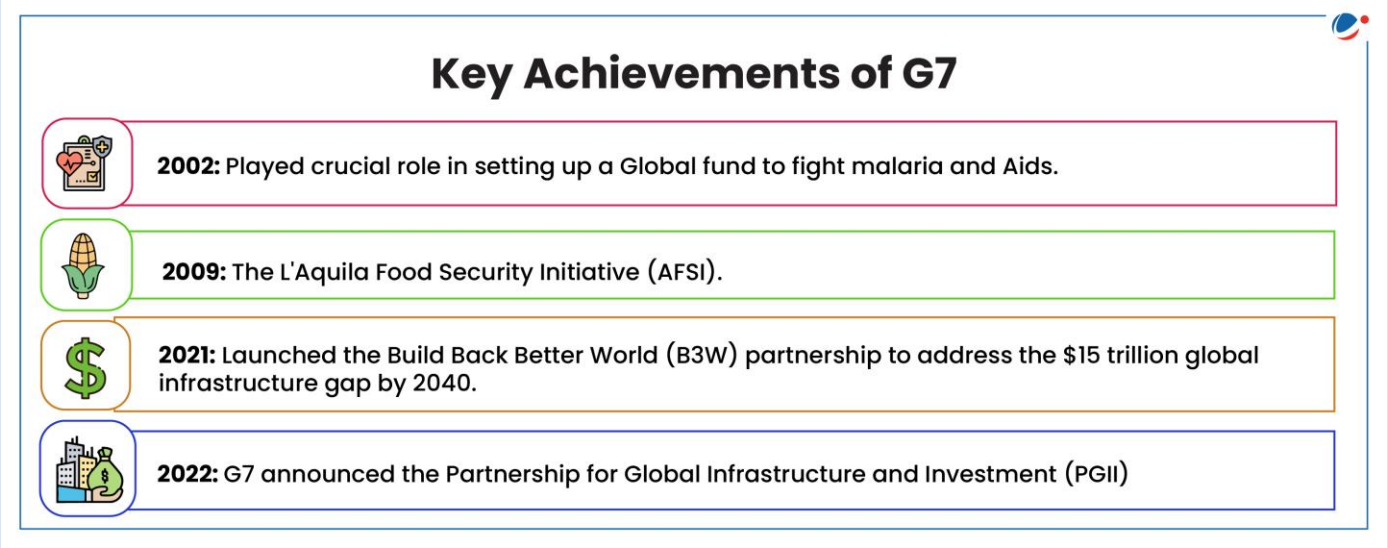
- ✓ Under Mission LiFE launched "Ek Ped Maa Ke Naam" on Environment Day (5th June.)
- **Global South:** India has taken upon itself the responsibility to raise concerns of the countries of the Global South.

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 issue**s. E.g., Migration, Climate change, conflicts, etc.

- **Genesis:** 1975 in response to economic and financial cooperation due to energy crisis.
- **Its working:** The G7 **lacks a permanent structure**; its rotating Presidency sets the agenda annually.
  - The G7 Summit ends with **a communiqué detailing political commitments**.
- **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.
  - **The EU is not a member of the G7** but attends the annual summit.





Major Outcomes of the Summit:

- **Regional affairs:**
  - **Ukraine-Russia war:** Committed to raise the costs of Russia's war**. E.g.,** G7 pledged $50 billion using frozen Russian assets.
  - **Israel-Hamas conflict:** Reiterated commitment to the two-state solution and the right of countries to defend their vessels in Red Sea**. E.g.,** Maritime operations like EU's Aspides and US-led Prosperity Guardian.
- **Promote economic resilience:** Through supply chain diversification (**e.g.,** G7 **PGII initiatives, IMEC**, etc.), coordinated initiatives on critical minerals (**e.g., 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** to invest in sustainable development and will provide Africa with an alternative investor to China.
- **Health and food security: G7 launched Apulia Food Systems** to enhance food security and sustainable agriculture. Leaders also committed to **support Gavi** for immunization coverage.

Significance of G7 in the current Geopolitics

- **Play a Central Role in Global Governance: E.g.,**
  - **A.I Governance:** Global Partnership on AI (GPAI) for A.I. governance was proposed in 44th G7 summit (2018), and later hosted by OECD.
    - ✓ **Also, Hiroshima AI Process (HAP)** initiated at G7 summit in Hiroshima (Japan) is a significant step towards regulating AI.
  - **Tax governance:** The Financial Action Task Force (FATF) was established in 1989 by the G7 to examine and develop measures to combat money laundering.
- **Act as a defender of the rules-based international system: E.g., Strictly defend free and open Indo-Pacific, based on the rule of law,** which is inclusive, prosperous, and secure, grounded on sovereignty, territorial integrity.
- **A platform to discuss and resolve prominent international crisis and disputes: E.g.,** Presently, Ukraine-Russia war; Israel-Hamas conflict, the Red Sea crisis, etc.
  - **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, the G7 has also been successfully addressing the issue of tax avoidance through the **Base Erosion and Profit Shifting (BEPS) initiative.**
- **The G-7 'Club of Democracies':** It has emerged as a dynamic coalition, positioned at the **political epicentre of global** efforts to defend democratic societies and what its leaders call the **"rules-based international order."**

Limitations of G7 Effectiveness

- **G7 fails to reflect current global economic landscape:** G7's economic dominance declined from over 60% in the 1970s to 26.4% in 2023.
  - Emerging economies now represent 50.1% of global economy, increasing their demand for representation in global governance systems.
- **Without broader participation**: The focus of global economic governance is shifting to more inclusive, representative and democratic governance mechanisms.
  - **E.g.,** the G20, BRICS, and the Asia-Pacific Economic Cooperation, etc.
  - **Also, G7's representation of Global Democracy and South** like India, Brazil are missing as well as formidable, emerging blocs like African Union (AU).
- **G7 lacks institutional continuity**: The annual leadership changes and every member tries to prioritise their own strategic concerns, thereby hindering consistent and collective action.
  - Also, there are no permanent organization or staff to implement **communiqués** (an official statement or announcement).
- **G7 unity is undermined by discord between the countries:** U.S. Refused to Join G7 Climate Change Declaration in G7 meet in Canada and at the end U.S. withdrew support for any communiqué.

India and G7	
Significance of India's participation in G7 and as a Potential future member: • **India's frequent invitations to G7 summit** 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.** ○ **E.g.,** India will soon surpass Japan, becoming the world's fourth-largest economy.	**Relevance of G7 for India** • **India as a Voice of the Global South**: A platform where India it can place the priorities and concerns of the countries of the Global South on the world stage. • **Among the comity of democracies**: Unlike, BRICS, SCO, G20 where there are non-

• **As a responsible democratic power**, India offers an **alternative to China** in representing emerging economies. ○ **E.g.,** China **defied the** Permanent Court of arbitration (PCA) **2016 verdict on South China Sea** favouring Philippines, **whereas, India** respected the verdict of the PCA, when it adjugated in favour of **Bangladesh in 2014.** • India's inclusion helps **G7 better understand and engage** with the **Global South** perspective. ○ E.g., The focus on the Global South started with 49th Summit in Japan. • **India's G20 chairmanship complements** its G7 participation, bridging developed and developing world interests.	democratic states, G7, reflects the concerns and agendas of democracies like India. • **For India, the outreach session of the G-7 meeting**, has always been an important platform to showcase its achievements and outlook to the world. • **G-7 platform** gives India the opportunity to meet global leaders and set priorities.

Conclusion

U.S. National Security Advisor Jake Sullivan's description of the G7 as the **"steering committee of the free world"** underscores its pivotal role in shaping global policy. As **democracies face complex challenges,** the G7's **unified approach** to critical issues demonstrates its **enduring relevance and influence in international affairs.**

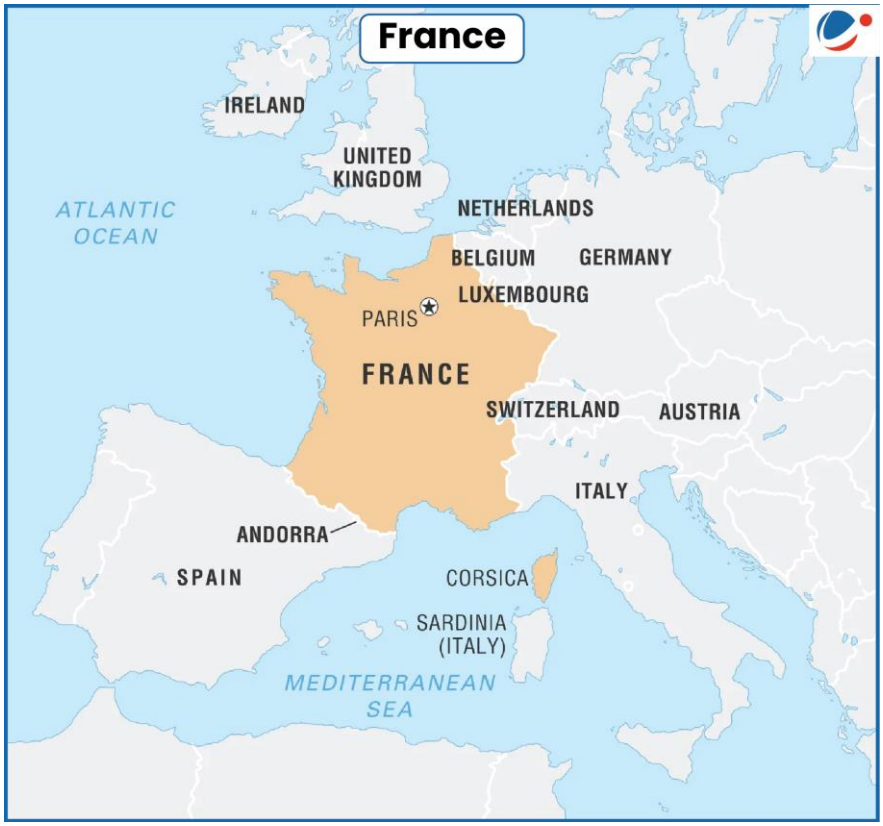
2.5. INDIA-FRANCE RELATIONS

Why in the News?

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

More on the News

- In the Meet, both the countries focused on the **'Horizon 2047' Roadmap** and **the Indo-Pacific Roadmap.**
- **The 'Horizon 2047' Roadmap constitutes 3 pillars.**
  - **Partnership for security and sovereignty:** Make Indo-Pacific an area of stability; Counter online radicalisation and combat terror through the No Money for Terror (NMFT), etc.
  - **Partnership for the planet:** Through the Indo-Pacific Parks Partnership, International Solar Alliance and the Indo-Pacific Oceans Initiative (IPOI)
  - **Partnership for the people:** The Partnership Agreement on Migration and Mobility (2021) will enhance the mobility of students, graduates.



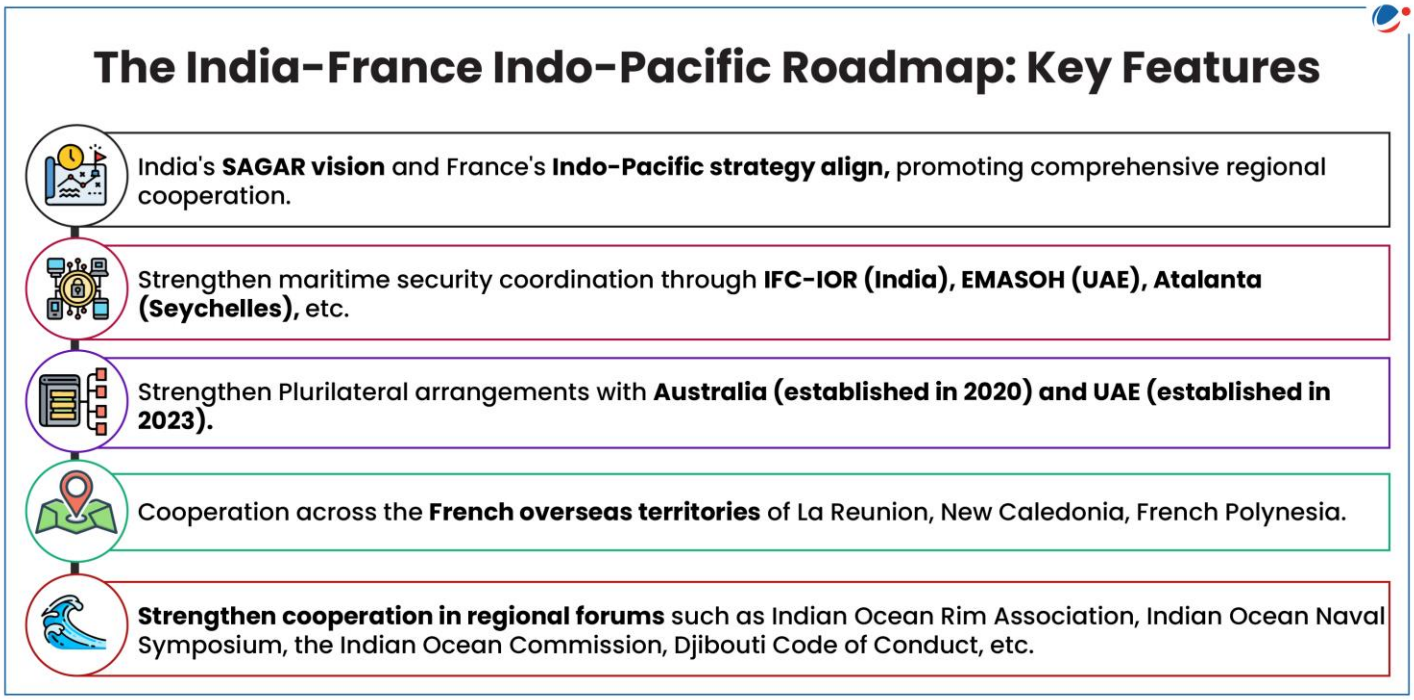
- They also agreed to further intensify strategic defence cooperation with increased focus on 'Make in India'.

The growing convergence between India-France Relations

- **Defense Cooperation:** France (33%) is India's second largest arms supplier as per the Stockholm International Peace Research Institute (SIPRI). Key projects **e.g.,** Rafale aircraft purchases and the P-75 Scorpene Project.
  - **India and France have announced a "defence industrial roadmap":** Aiming for co-design, co-development, and co-production to meet India's defense needs and export to friendly nations.
    - ✓ **Key project, e.g.,** Maintenance Repair and Overhaul (MRO) facilities for leading-edge aviation propulsion (LEAP) and Rafale engines.

- **Military exercises:** bilateral exercises e.g., VARUNA and FRINJEX-23, and multilateral exercises e.g., as 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.
  - Both agreed to collaborate on future launch vehicles and the **TRISHNA Earth Observation mission.**
- **Economic Cooperation**: France is one of the largest investors in India with FDI inflow of $659.77 million for FY 2022-23.
  - India's Tata Group and France's Airbus have agreed to manufacture civilian helicopters.
  - In the aviation sector, CFM International secured an agreement with India's Akasa Air for the purchase of over 300 LEAP-1B engines.
- **Digital Cooperation:** Launched Unified Payments Interface (UPI) from Eiffel Tower offering secure and convenient transactions for Indian visitors and NRIs.
  - French company has developed **14 supercomputers** including **the fastest supercomputer Param Siddhi at 4.6 petaflops/second.**
- **Multilateral Cooperation:** France has been a consistent supporter of a permanent seat for India on the United Nations Security Council (UNSC).
  - It has also actively supported India's stances on **Kashmir and terrorism at the United Nations (UN) as well as bodies like the Financial Action Task Force (FATF**).
  - Helped India's accession to **the Missile Technology Control Regime (MTCR), Wassenaar Arrangement (WA) and Australia Group (AG).**



Challenges in India and France relation

- **Bilateral Trade Figures:** In 2022, bilateral trade between India and France stood at US$15.8 billion, which is consistently increasing but still below its potential when compared to other partnerships.
- **Visa restrictions**: Correspondents based in India issued a letter of protest over the case, saying that they were all "grappling with increased visa restrictions in recent years".
- **Inordinate delay in Nuclear Agreement**: There are technical, financial, and civil nuclear liability issues that both sides have to resolve on Jaitapur nuclear power reactors.
- **Differing 27ecogniz of Strategic Autonomy**: India's foreign policy prioritizes non-alignment and sovereignty, while France engages in pragmatic alliances to balance major powers' influence in the Indo-Pacific region.

- This difference in approach poses a substantial challenge to aligning their goals effectively, particularly in the face of China's growing assertiveness.

Way forward

- **Balance diverging 'strategic autonomy':** Which means, more flexibility in accommodating each other's strategic imperatives while pursuing one's stated objectives.
- **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.

France's Ambassador quoting **the 19th-century French historian Jules Michelet** who described India as **"the matrix of the world"** said that the **India-France partnership is "universal"** as it goes from the **"sea to the space**" and **beyond.**

2.6. INDIA-EURASIA RELATIONS

Why in the news?

The complex and deepening interconnections between European and Asian security offer new strategic opportunities for countries like India.



Factors highlighting the Changing geopolitics of the Eurasian region

- **Hotbed of conflicts**: E.g., the **Russia-Ukraine conflict** and the **Armenia- Azerbaijan conflict** (Nagorno-Karabakh**)**, which have significant geopolitical implications.
- **Growing Chinese influence**: China's **Belt and Road Initiative**, extending across Central Asia and Russia to the Atlantic shores, along with Europe's increasing economic ties with China, has significantly strengthened China's influence in Eurasia.
- **Changing strategic priorities of US**: Geopolitical instances such as withdrawal from Afghanistan, shifting focus from Middle East to Eurasia and Indo-Pacific, Strengthening NATO and involvement in the **Three Seas initiative** in the context of Ukraine war.
- **Regional geostrategic alliances**: E.g., China and Russia **'no limits' partnership** to counter the USA; 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**: Japan, South Korea and Australia (through AUKUS) are eager to bring Europe into Indo-Pacific, bridging the divide between Asia and Europe.
- **Shift of global order towards Eurasia:** E.g., India-Middle East- Europe Economic Corridor (IMEC) signifies the commitment of the US, Europe, and emerging powers such as India, Saudi Arabia, and the UAE to promoting a more balanced and interconnected Eurasian order.

Opportunities for India in the evolving landscape

- **Strategic:**
  - **Strengthening ties with Russia as a counterbalance to China:** India now must take advantage of its relationship with Russia **to mediate an end to the Ukraine war**.
  - **Integrated deterrence" strategy of US:** It seeks strong security partnerships with middle powers to balance China and Russia, which can **offer India a chance** to boost its national power and military capabilities.

- **Strategic Partnerships**: E.g., India's growing defence partnership with Armenia can encourage developments in India's Eurasia strategy

- **Economic:**
  - **Energy Security**: Eurasian especially **Central Asian States are prospective long-term partners of India in energy** (oil, natural gas) **and natural resources** (uranium and iron ore).
  - **Enhanced Trade with Russia**: India and Russia are looking to raise **bilateral trade to $100 billion by 2030, thereby mutually deepening relationship.**
  - **Improved trade and connectivity**: It is estimated that if India and the Eurasian Economic Union sign a Free trade agreement (FTA) while the International North-South Transport Corridor (INSTC) also becomes fully functional, India's two-way trade with Eurasia could reach $170 billion from the current figure of around $20 billion.
  - **Market expansion**: Exporting IT services and digital solutions to Eurasian markets.
- **Regional Security**: Collaborating with Central Asia to counter terrorism, extremism, and drug trafficking is crucial for regional security and India's national interests
- **Cultural diplomacy**: Leveraging historical and cultural ties (through Buddhism, yoga) to build soft power, as India shares ancient ties with Eurasian countries.

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).

Way Forward

- **Enhance connectivity**: India **should consider joining Russia's Greater Eurasian corridor** and **the Northeast Passage** to **establish connections to the Far East and Japan.**
- **Strengthening relations with the European Union (EU)**: India's Eurasian policy should include **enhanced engagement with EU**.
- **Central Asia as the Core of India's Eurasian Strategy:** The **India-Central Asia Summit** can be **held annually instead of biannually**, similar to the India-ASEAN Summit.
- **Balancing different regions**: India needs to balance its **Connect Central Asia policy with its Act East Policy and Indo-Pacific Strategy**.
  - Being an important member of BRICS, SCO, and RIC (Russia-India-China), India must utilize the platforms to promote multi-dimensional strategic cooperation with Russia and China.
- **Intensifying dialogues with Russia:** India and Russia should focus on narrowing disagreements and expanding cooperation on continental Eurasian security.

2.7. INDIA-JAPAN RELATIONS

Why in the News?

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

More on the News

- Both countries discussed ways to deepen cooperation further, adding new and emerging areas, and strengthening B2B and P2P cooperation.

- Both countries noted that India-Japan **Special Strategic and Global Partnership** is in its 10th year.

Significance of India-Japan Bilateral Relationship



For Both Countries

- **Convergence of Strategic Interests:** Both **Japan's 'Free and Open Indo-Pacific'** (FOIP) strategy and **India's Indo-Pacific Oceans Initiative (IPOI)** share common concerns regarding China's ongoing military and political interventions in the Indo-Pacific, specifically in **South China Sea**.
  - India and Japan are also participating in the **Supply Chain Resilience Initiative** to counter China's dominance of supply chains in the Indo-Pacific.
- **Strategic Connectivity:** Examples of partnership in enhancing connectivity-
  - Linking **South Asia to Southeast Asia** through India's **''Act East''** and Japan's **''Partnership for Quality Infrastructure**" policy.
  - **Asia-Africa Growth Corridor (AAGC)** aims to **bring East Asia, Southeast Asia and South Asia closer to Africa**
  - India Vision 2025 involves development of Northeast region and acts as a **convergence point for India's Act East Policy and Japan's FOIP policy.**
- **Defence Relationship:** The **acquisition and Cross-Servicing Agreement (ACSA)** brings closer cooperation between Armed forces of India and Japan.
  - **Example-Military Exercises:** Dharma Guardian, Shinyuu Maitri, JIMEX.
- **Important trade partners:** Bilateral Trade between both countries was US$ 21.96 billion (FY 2022- 23),
  - In 2011, India and Japan successfully concluded a historic bilateral free trade agreement – the Comprehensive Economic Partnership Agreement.
- **Energy Cooperation: E.g., India-Japan Clean Energy Partnership (CEP) was announced in 2022** for economic growth and addressing climate change.
  - **Othe examples: India-Japan Agreement for Cooperation in the Peaceful Uses of Nuclear Energy (2017)**
- **Reformed Multilateralism:** Both countries support reforms at **UNSC and are also part of** multiple global groupings such as **Quad, G20, G4 and also focus on non-proliferation and disarmament issues**
- **Cooperation in Science & Technology missions:** E.g., ISRO and JAXA are working on a joint Lunar Polar Exploration Mission (LUPEX).

Significance for India

- **Infrastructural development**: E.g., collaboration on projects such as **Mumbai-Ahmedabad High Speed Rail project.**
- **Foreign Investment**: Target of 5 trillion yen investment in India (2022-2027).
- **Transformation of India's manufacturing**: Through platforms like **India-Japan Industrial Competitiveness Partnership.**
- **Skill Development:** E.g. **Technical Intern Training Programme (TITP)** and **Specified Skilled Worker (SSW)** initiative of Japan
- **Official Developmental Assistance**: Japan is largest bilateral donor to India.

Significance for Japan

- **Demography:** India can offer Human Resources to Japan to tackle its declining population
- **Investment opportunities:** In sectors such as automobiles, textile, electronic system, food processing.
- **Raw Material:** Iron ore helped in Japan's recovery from devastation post World War II
- **Large Market**: India presents a large market for Japanese goods.

Challenges in Indo-Japan Relationship

- **Bilateral Trade**: India-Japan trade remains low with the domination of India's imports even after CEPA.
  - It is mainly on account of restrictive trade practices such as **stringent quality standards and non-tariff barriers** which increases cost burden to export for Indian companies and products.
  - Moreover, **Japanese FDI in India small compared to Japan's total outward FDI**.
- **Strategic divergence:**
  - **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.
  - **Japan is part of the U.S.'s alliance, unlike India.**
- **India boycotted 'Osaka Track' suggested by Japan at G20 summit (2019**)
  - Osaka Track aimed to create plurilateral negotiation on digital trade with intention of standardisation of rules on cross-border data flows, removal of prohibitions on data localization etc**.**
- **Delay in Implementation of Projects**: Such as **Asia Africa Growth Corridor** and bullet train project between Ahmedabad and Mumbai.

Steps to be taken

- **Accelerate trade and investment by** review of implementation of CEPA and taking a relook at the rules of origin to create a stable and consistent trade policy regime.
- **Enhanced defense collaboration with** focus on enhanced shared security.
- **Coherence in approach towards Indo-Pacific at various platforms such as QUAD** will foster strength in freedom of navigation and rule based order especially in the Indo-Pacific region.
- **Deepen cooperation in new and emerging areas such as** modern biology, biotechnology and health care, agriculture, nano-science, information and communication technology, robotics.
- **Enhanced dialogue and exchanges** to strengthen Business and Business and People to People cooperation.

Conclusion

Both countries should 31ecognize the need for concerted efforts to utilize the natural partnership and translate positive developments into an '**Arc of Advantage and Prosperity'** involving growth, prosperity, stability and closer integration in Asia.

2.8. NUCLEAR WEAPONS ARSENAL

Why in the News?

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

Do you know

> **Russia** and **the USA** together possess almost 90% of all nuclear weapons.

Key findings

- India's arsenal increased from **164 in 2023 to 172**, representing a slight increase that has given it the **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.
- Even though **the total nuclear warheads** have **declined,** the number of **operational warheads** has **increased yearly**, reflecting **current tensions.**

Treaties and Non-Proliferation Efforts:

- **Comprehensive Nuclear Test Ban Treaty (CTBT**) bans all nuclear explosion tests on Earth.
- **Non-Proliferation of nuclear weapons (NPT) limits** the spread of nuclear weapons through non-proliferation, disarmament, and peaceful use of nuclear energy.
  - In both CTBT and NPT, **India is not a signatory**.

- **International Convention for the Suppression of Acts of Nuclear Terrorism, 2005** criminalizes the planning, threat, or execution of acts of nuclear terrorism. **India is a signatory.**
- **Nuclear Security Summits** where the participants unanimously adopted the goal of securing all vulnerable nuclear material in the next four years. **India participates in NSS.**
- **Conference on Disarmament (CD),** established in 1979 as a multilateral disarmament negotiating forum by the international community. **India has been a regular and active participant in the CD.**
- The **International Campaign to Abolish Nuclear Weapons (ICAN) is a coalition of non-governmental organizations** promoting adherence to and implementation of the United Nations Treaty on Prohibition of Nuclear Weapons. This landmark global agreement was adopted in New York, 2017. **India has not signed it**.
    - **ICAN won the Nobel Peace Prize in 2017**.

Factors for Procurement of Nuclear Arsenal

- **Security:** Nuclear weapons' immense destructive power **forces nations to acquire their own** nuclear deterrent **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** by the State bring in **prestige (sign of great power),** and therefore, **influence its behaviour** across **international l.**

Threats posed by nuclear weapons

- **Global Threat perception**
    - **Escalation of Nuclear Risk:** Nuclear disarmament and non-proliferation face complexity as stakeholders struggle to **separate nuclear issues from broader geopolitical tensions.**
        - ✓ **E.g.,** Russia withdrew the ratification of the **Comprehensive Nuclear Test Ban Treaty** and suspended its membership of the **New START (Strategic Arms Reduction Treaty).**
    - **Nuclear Sabre rattling**: It is the use **nuclear threats** or **nuclear bullying** to affect geopolitics.
        - ✓ **E.g.,** In 2023, **Russia** warned that the **"nuclear apocalypse**" is drawing **"closer."**
        - ✓ **E.g., North Korea's threat** in response to **U.S.–South Korean joint military exercises**.
    - **The Risk of Nuclear Disaster in Ukraine**: **E.g.,** Ukraine's **Zaporizhzhia Nuclear Power Plant** was **targeted** with **suicide drones in 2024.**
    - **Cyber-Nuclear Security Threats:** It can be used to undermine the security of nuclear materials and facility operations, and it can compromise nuclear command and control systems.
    - **Space nuclear weapons**: Detonating a nuclear weapon in space would create an electromagnetic pulse that would damage satellites indiscriminately, unless they are specially hardened, and create a tremendous amount of debris which could cause additional damages.
- **India's threat perception**
    - **China is a growing concern for India**: 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**.
            - TNWs have a low range and low yield capacity to limit the destruction to a certain targeted area.
        - ✓ TNWs are also **to counter the 'Cold Start Doctrine' of the Indian Army**, which is to conduct quick military strikes against Pakistan in a pre-emptive way to inflict significant attrition on the enemy.
        - ✓ Unlike India, **Pakistan has not declared a No First Use policy,** hence, **lower the nuclear threshold** and introduce a far greater risk.
        - ✓ In a worst-case scenario, **Southern Asia** would enter an **accelerated nuclear arms race**.
    - **Nuclear terrorism is constant threat to India**: Taking advantage deteriorating security, terrorist groups, aided by supportive countries, may acquire nuclear materials.

Way Forward to de-escalate Nuclear Race

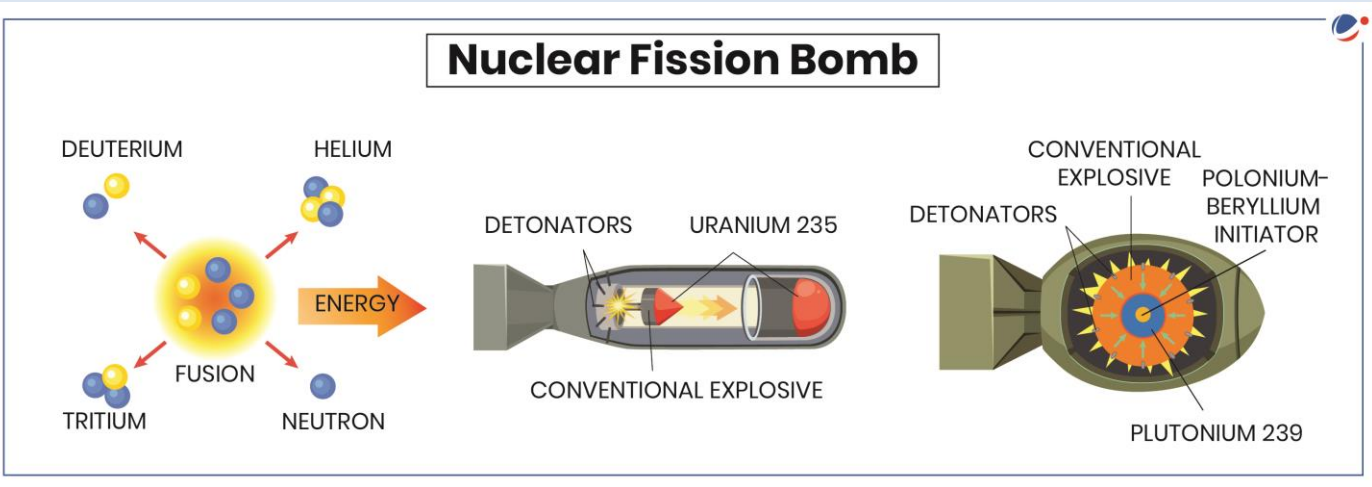
Steps to be taken	The Korean Peninsula	USA/NATO-Russia	South Asia
Immediate Steps:	• Refrain from **nuclear threats** and adopt nuclear **no-first-use policy** (NFU) • Refrain from **provocative military actions**	• Russia join **New START extension** • United States, Russia and NATO states commit **not to issue public threats of NFU.** • Both ratify CTBT	• Discuss a broader **bilateral or multilateral nuclear test moratorium**. • Expand the **non-attack agreement** to cover all nuclear facilities, military and civilian.
Follow-on Steps:	• Pursue a **permanent peace regime** and end production of **plutonium** • Suspend **US- South Korea** joint military drills.	• Agree to place all **tactical nuclear weapons** into central storage under **verification.** • Gradual **nuclear weapon reduction**.	• Agree to join **multilateral disarmament negotiations**. • Limit the size of their **nuclear arsenals**, adopt a bilateral **nuclear material production freeze.**

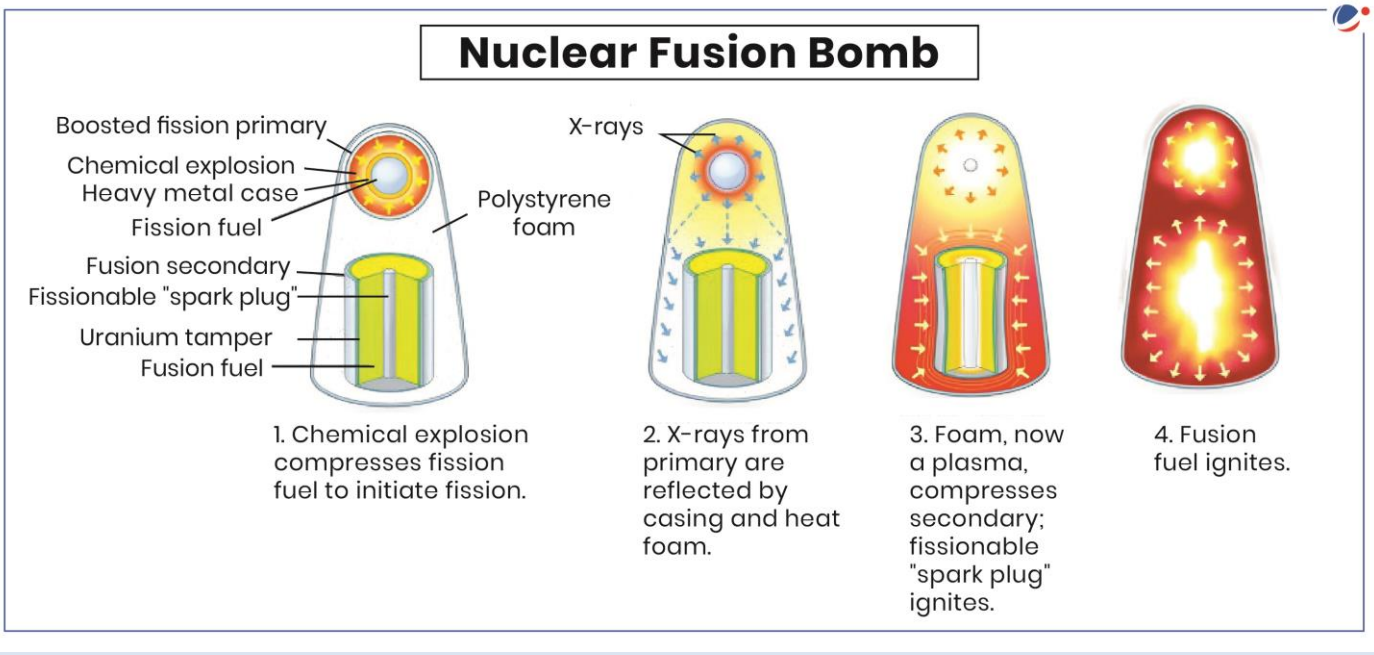
*"We affirm that a nuclear war cannot be won and must never be fought. As nuclear use would have far-reaching consequences, we also affirm that nuclear weapons—for as long as they continue to exist—should serve defensive purposes, deter aggression, and prevent war"***.** Joint Statement of the Leaders of the Five Nuclear-Weapon States (US, China, UK, Russia, France)

Nuclear weapon Technologies

- Nuclear weapon, device designed to release energy in an explosive manner as a result of nuclear fission, nuclear fusion, or a combination of the two processes.

Fission weapon	Fusion weapon
Fission weapons are commonly referred to as **atomic bombs.**	Fusion weapons are also referred to as **thermonuclear bombs** or, more commonly, **hydrogen bombs.**
U-235 isotope of Uranium serves as the primary fuel for the weapon.	**Hydrogen bomb**: **Fission** reaction **initiates fusion** of hydrogen, **potentially causing more fission**, releasing enormous energy.
U-235 fission: neutron absorption splits atom, releasing energy and neutrons for explosions.	**Deuterium and tritium**, which are isotopes of hydrogen, are used for the fusion process.
The energy output: A ton of explosive TNT to 500 kilotons of TNT	Hydrogen **bombs yield megatons of TNT**, thousands of times more powerful than atomic bombs.





- **Neutron bomb:** It's a thermonuclear weapon. The explosion from a neutron bomb is relatively small.

Scan the QR code to know more about **India's Nuclear Doctrine.**

Weekly Focus #16: India's Nuclear Doctrine

2.9. NEWS IN SHORTS

2.9.1. INDIA-ITALY STRATEGIC PARTNERSHIP

Prime Ministers of India and Italy reviewed the progress on the sidelines of G7 Summit and agreed to strengthen cooperation in **global and multilateral initiatives,** including **India-Middle East-Europe Economic Corridor (IMEC).**

Key aspects of Bilateral Partnership

Political

- Political relations between the two countries were **established in 1947** which was **elevated to Strategic Partnership in 2023**.
- In a Virtual Summit in 2020, **2020-2025 Action Plan** was adopted that set an ambitious agenda for an enhanced Partnership between the countries.

Economic

- Italy is **India's 4th largest trading partner** in the EU, after Germany, Belgium, and Netherlands.
- **Indo-Italian Joint Economic Commission Cooperation** has been in existence since 1976.
- **Migration and Mobility Partnership Agreement** signed in **2023** to ensure **safe and legal migration**.

Technology

- **News Science & Technology Co-operation Agreement signed in Nov 2003**, with **prime areas of joint research including Electronics, Biotechnology, Energy**, etc.
- New **Executive Programme of Cooperation for 2025-27** to promote joint research and development in Science & Technology.

Defence and Security

- In 2023, **Italy joined Indo-Pacific Ocean Initiative's** Science and Technology Pillar.
- **Joint Military exercises: PASSEX Exercise, MILAN (Naval Exercises).**

Cooperation in Multilateral bodies

- Italy joined India-led **International Solar Alliance, Coalition for Disaster Resilient Infrastructure, Global Biofuels Alliance, and IMEC**.

2.9.2. INDUS-X INITIATIVE MARKS ONE-YEAR ANNIVERSARY

India-US Defence Acceleration Ecosystem (INDUS-X) was launched in **June 2023** to build **defence innovation bridge** between two countries under **initiative on Critical and Emerging Technologies (iCET).**

- INDUS-X facilitates **partnerships among U.S. and Indian defense companies**, incubators and accelerators, investors, and universities.

Achievements of INDUS-X

- **Commercial collaborations** between defence companies of two countries in various defence domains such as **intelligence, surveillance, and reconnaissance (ISR)** and **semiconductors**.
- Exploration of modalities for **joint innovation funding** between two countries**.**
- **Indus-X Gurukul:** A hybrid information series for U.S. and Indian defense start-ups.
- **Industry-Academia linkage:** Exchange of best practices on technology transfer and licensing, advancing research in emerging defence technology domains etc.



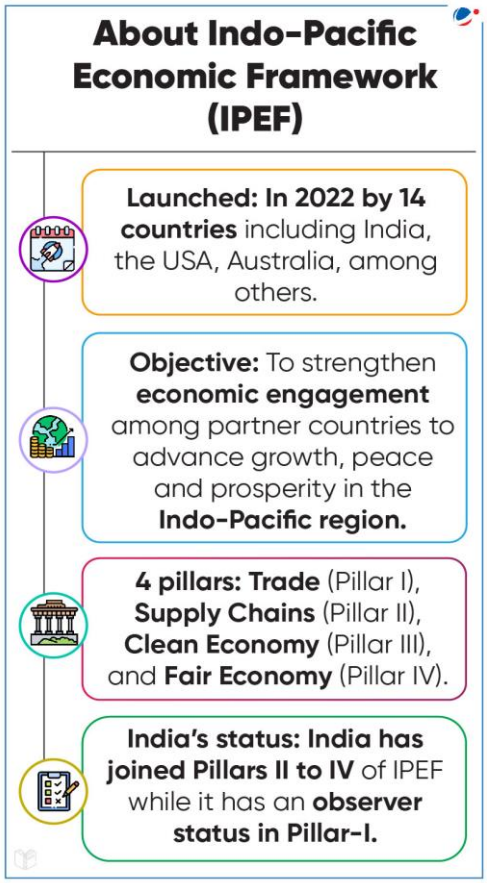
India-US Defence Technology Cooperation

- **In 2016**, US designated India as a "**Major Defence Partner**".
- **Defence agreements** include:
  - Logistics Exchange Memorandum of Agreement (LEMOA) in 2016,
  - Communications Compatibility and Security Agreement (COMCASA) in 2018,
  - Industrial Security Agreement in 2019 and
  - Basic Exchange and Cooperation Agreement (BECA) in 2020.
- **iCET:** Overarching umbrella framework for technology cooperation, it covers commercial as well as defence technologies
- **US-India Roadmap for Defence Industrial Cooperation:** To fast track technology cooperation and coproduction in areas of mutual interest.

2.9.3. INDO-PACIFIC ECONOMIC FRAMEWORK FOR PROSPERITY

India attends **Indo-Pacific Economic Framework for Prosperity (IPEF)** ministerial meeting.

- At the meeting, IPEF members signed multiple agreements which are first-of-their-kind approaches to address 21st century challenges and strengthen economic engagement across Indo-Pacific.
- **Key outcomes of the meet**
  - **IPEF Clean Economy Agreement:** To accelerate efforts of IPEF partners towards energy security and transition, climate resilience and adaptation, GHG emissions mitigation, etc.
  - **IPEF Fair Economy Agreement:** To create a more transparent and predictable business environment in member countries.
  - **Cooperative Work Programme (CWP):** 3 new CWPs announced on **emissions intensity accounting**, **e-waste urban mining** (led by India), and **Small Modular Reactors**.
  - **Operational launch of IPEF Catalytic Capital Fund:** To support expansion of the pipeline of quality clean economy infrastructure projects.
- **Note:** These agreements **will enter into force** after **at least five IPEF partners** complete their internal legal procedures for **ratification, acceptance, or approval**.
  - **India did not formally sign these agreements** as domestic approval processes are still underway and will be completed after formation of the new government.



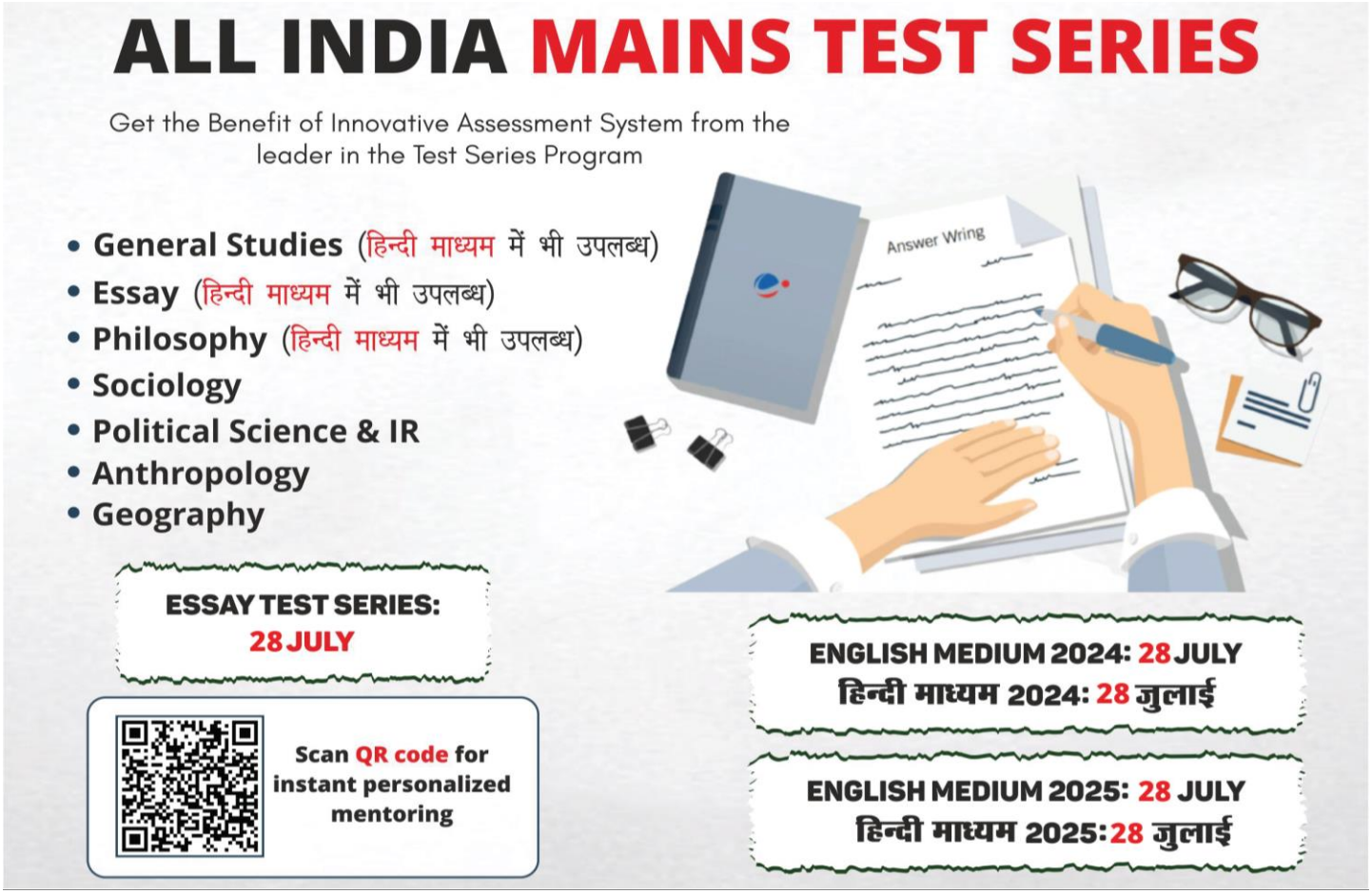
To know more about the IPEF, refer to Article 2.2. Indo-Pacific Economic Framework For Prosperity (IPEF) of the November 2023 Monthly Current Affairs Magazine.

2.9.4. COLOMBO PROCESS

India chaired its first meeting as Chair of the Colombo Process.

About Colombo Process

- Regional Consultative Process that provides platform for consultations on the management of **overseas employment** and **contractual labour**.
- Comprises of 12 Member States of Asia such as Bangladesh, Sri Lanka etc.
  - India is one of the **founding members.**
- **Thematic priority areas are:** Skills and Qualification Recognition Processes; Fostering Ethical Recruitment Practices, etc.
- UN's **International Organization for Migration** provides technical and administrative support to the Colombo Process.



3. ECONOMY

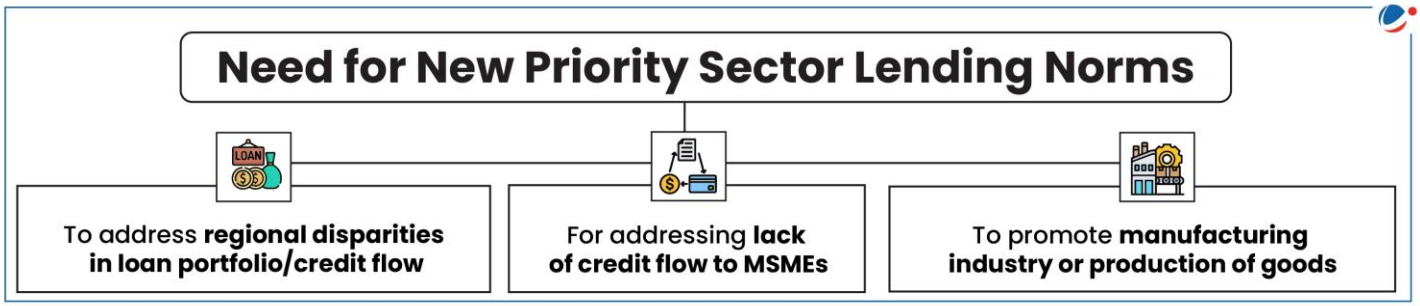
3.1. REVISED PRIORITY SECTOR LENDING NORMS

Why in the News?

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

Revised Priority Sector Lending Norms

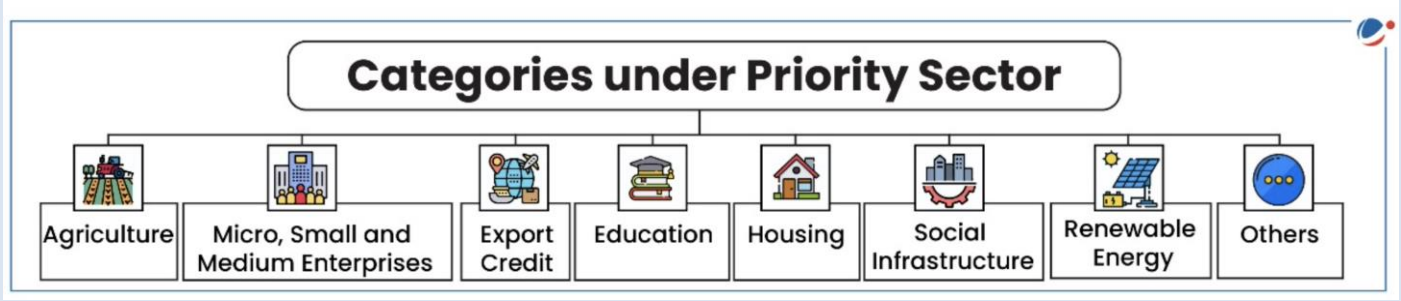
- **Incentive framework:** It establishes an **incentive framework for districts with lower credit flow** starting from FY25.
  - **More weight (125%) will be given to fresh priority sector loans** in districts where **loan availability is low** (less than Rs 9,000 per person).
- **Disincentive framework:** 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 as 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**.
  - To **direct a portion of bank credit to specified sectors** and sub-sectors that impact large segments of the population and are crucial for the economy.
- **PSL was formalized in 1972** to facilitate flow of credit to such sectors, which though creditworthy, are unable to access credit from formal financial institutions.
- **Various Committees associated with PSL includes:**
  - **Gadgil Committee, 1969** recommended **adoption of Area Approach** based on which **'Lead Bank Scheme'** was adopted.
  - **Ghosh Committee (1982**) in which Priority sector categories very revised.

Categories under Priority Sector



The sections have further sub-targets for the *Category of Weaker Sections. * For example, Small and Marginal Farmers in Agriculture Category.

Weaker Sections under PSL	
Small and Marginal Farmers	Beneficiaries of Differential Rate of Interest (DRI) scheme (1972), NRLM, NULM, Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS)
Distressed farmers indebted to non-institutional lenders	Persons with disabilities
Artisans, village and cottage industries	Individual Women
SCs and STs	Minority communities as notified by Government of India
SHGs	Distressed persons other than farmers

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 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.				

Positive Impact of priority sector lending on Indian economy:

- **Financial Inclusion:** PSL norms ensure that credit reaches under banked segments of population e.g. SMFs, women, and weaker sections.
- **Support to Agriculture:** Agricultural credit increased from 2000 to 2020 at a compound annual growth rate (CAGR) of 19.81% due to mandatory 18% lending by commercial banks & other policies.
- **Promotion of MSMEs:** By facilitating credit flow to MSMEs, PSL helps in creating jobs and boosting local economies.
- **Income Augmentation:** A case study of Andhra Pradesh showed that Beneficiaries reported enhanced income.

Issues with PSL

- **Non-Performing Assets (NPAs):** Outstanding loan in priority sector has significant negative impact on banks.
  - According to some studies, PSL was found responsible for **more NPA generation and writing-off of NPA** as well.
- **Increased costs**: PSL increased administrative and transactional cost of banks.
- **Other issues with PSL**: Low banks Profitability, increased Government Interference etc.

Know the term

- **Adjusted Net Banks Credit (ANBC):** ANBC denotes Net Bank Credit plus investments made by banks in non-SLR bonds held in held-to-maturity category (HTM).

Know the term

- **Priority Sector Lending Certificates (PSLCs):** Certificates to guard against shortfalls in lending to priority sector, that are issued against priority sector loans for banks. Banks can meet their targets & sub-targets by buying these instruments.

Way-forward

- **Strengthen Microfinance Institutions and Encourage Opening of "Small" Finance Banks:** MFIs could significantly increase the credit supplied to unbanked rural and semi-urban areas through their vast distribution network and business model of "last mile connectivity."
- **Use of Technology:** E.g. Mobile banking app for loan approval to farmers to Reduce Cost of Credit Delivery and 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. FINFLUENCERS

Why in the News?

The **Securities and Exchange Board of India (SEBI)** has set the ground rules for **unregistered financial influencers**, or **'finfluencers**,' prohibiting regulated entities from dealing with them.

More about News

- SEBI decided to introduce a **fixed price process for delisting of frequently traded shares** and also **introduced a delisting framework** for Investment and Holding Companies (IHC)
- The move comes amid growing concern **over the potential risks associated with unregulated finfluencers** who might offer biased or misleading advice.

About Financial influencer or 'FinFluencer'

- It 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**: include links in the video description for viewers to buy a product or sign up for a service.

Reasons for rise of finfluencers

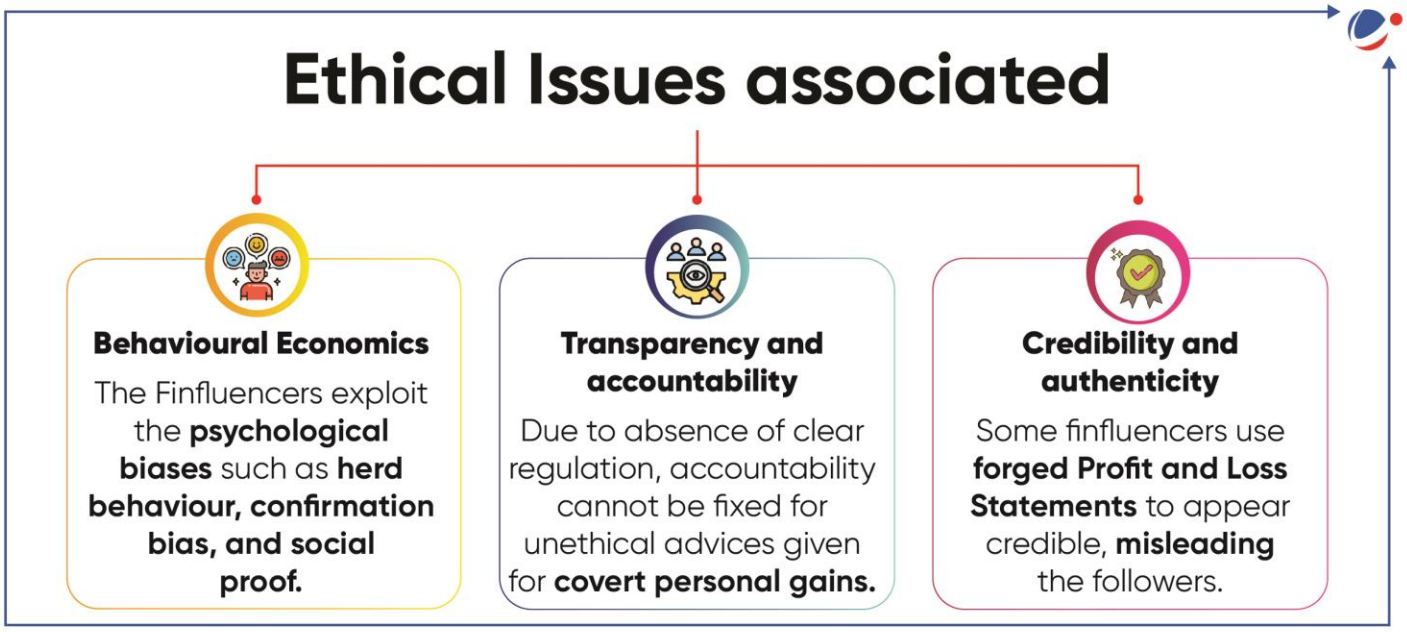
- **Lack of financial literacy**: India has a low financial literacy rate of **27%. (National Centre for Financial Education's 2019 survey)** and Finfluencers aid in **new investor education and awareness creation**.
- **Increased retail investment**: The share of retail investors in the cash market turnover jumped from 33% in FY16 to 45 per cent in FY20 and FY21. (National Stock Exchange)
  - Thus, **demand for information** relating to financial instruments and stock markets has **soared**.
- **Exponential increase in number of new investors**: Pandemic provided a boost, with increasing demand and supply for financial advice.
  - **New client registrations hit a record 1.5 million in June 2021**, more than **double** the 0.6 million in June 2020.
- **Technological advancements**: Trading was **democratised** as **new-age broking firms built easy-to-use apps**. E.g. Zerodha, Groww.
  - Affordable smartphones, cheap data plans and digital payments helped finfluencers in **reaching the masses through social media platforms**.

Issues arising due to rise of Finfluencers

- **Lack of regulation**: Difficult to gauge the expertise and qualification of the finfluencer, fix any liability on the finfluencer or protect an individual from the potential risks.
- **Market manipulation**: Finfluencers are also being **paid by the companies** to manipulate the stocks for personal gains.
  - E.g. **Salasar Technologies** stock prices manipulated by influencers, resulting in **huge losses**.
- **High-risk investments**: Finfluencers may promote high-risk investment opportunities that **promise high returns** without providing appropriate **risk disclosures**.
- **Views over reliability**: The financial advice shared by finfluencers is typically **geared towards generating views and likes**, rather than providing reliable, well-researched financial information.

- This **content-first approach compromises the quality and reliability** of the advice provided.

- **Social influence**: Finfluencers leverage their **social capital and persuasive communication skills** to cultivate **trust and credibility** among their followers, thereby exerting **influence** over their investment decisions.
- **Potential for unethical practices**: Finfluencers may promote certain stocks **in lieu of personal gains through market manipulation, insider trading** etc.



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.

Way Forward

- **Clear definitions**: Of terms like **Finfluencers**, investment advice etc. so that they stand test of **judicial – regulatory scrutiny**.
  - **Including coverage of all mediums** that have consumer access for financial – investment communication. E.g. TV, Print and digital media.
- **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.
- **Investor education**: Equip investors with **knowledge and skills** needed to **critically appraise** digital financial guidance.
  - Broking firms, mutual funds as well as SEBI have been conducting investor awareness programmes in **Tier-II and Tier-III locations.**
- **Self-Regulatory Organizations (SROs)**: Industry bodies need to initiate self-regulation protocols to uphold their credibility.
- **Performance Validation Agency (PVA)**: Establishment of a PVA as a third-party entity to enhance trust and reliability within the financial ecosystem by verifying performance reports.

Global examples of regulation

- **Australia**: Upto 5 years jail for finfluencers providing financial advice without a license.
- **European Securities and Markets Authority**: Defined what constitutes investment recommendations, how to post those advice on social media, and has spelt out penalties for any breach.
- **New Zealand**: Defined **code of behavior** for finfluencers, tiered mechanism of **licensing** according to the complexity of advice provided, imposes liability to have content disclaimers require to prominently display risk warnings
- **Singaporean and Chinese** regulators also have **Guidelines for Finfluencers**.

3.3. BRIDGING GLOBAL WORKFORCE GAPS

Why in the news?

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.



Global labour market scenario

- **Shrinking working age population:** Many high-income countries are experiencing rapid demographic shifts characterized by **declining birth rates**.
  - By 2050, the working-age populations in these countries will have **shrunk by more than 92 million**.
- **Ageing population:** Elderly populations (65 and older) will grow by over 100 million in many **high-income countries.**
  - Working-age individuals are essential for **contributing to pension and healthcare systems** that support the older generation, thus maintaining financial and social stability.
- **Globalized Job Market:** Increasing accessibility to digital systems, alongside increasing acceptance of teamwork with colleagues who are not co-located, has enabled **more globalized talent value chains**.
- **Shifting international trade:** Significant churning and shifts in international trade due to geopolitical situations, trade restrictions and friendshoring has affected changes in job markets and associated wages.

India's demographic advantage

- **Working population:** India's population exceeds 1.4 billion, nearly 65% of whom are of working age (15–64 years), and more than 27% between the ages of 15 and 24.
  - This surplus labour force presents an **opportunity to bridge the gap** between labour demand and supply in advanced nations.
- **Bridging Skill Gap:** The 'Global Skill Gap Study' by National Skill Development Corporation (NSDC) showed a **growing demand for Indian talent** across diverse sectors worldwide.
  - Projections indicate significant demand in regions such as UAE, Saudi Arabia, Qatar, Germany, Netherlands, UK, Sweden, Switzerland, Australia, New Zealand, Canada, USA etc.
- **Dual advantage:** With a relatively young population (median age of 28.4 years), India not only gets a **competitive advantage** in terms of workforce but also an opportunity to unleash the **consumption power of a young population.**
- **Previous Successes:** India's success in exporting IT and BPO services is a good example of how India has leveraged its demographic advantage.

Impacts of labour mobility

- **Global Productivity enhancement:** Labour mobility can connect potential migrants with employers in need, enhancing global equity and productivity.
- **Poverty alleviation:** Workers moving to richer countries can **expect to increase their incomes by 6 to 15 times**, significantly alleviating poverty.
- **Social welfare:** The positive impacts of labour mobility extend beyond individual migrants. **Remittances sent back home by migrant workers** can play a crucial role in improved healthcare, education and welfare.
  - In 2022, India **received over US$ 111 billion in remittances**, making it the first country to surpass the US$ 100 billion mark.
- **Long-term impact on India's labour market:** Mass migration of workers may have a **long-term impact on India's skill development, and potential brain drain**, adversely affecting the sectors like healthcare and construction.

Initiatives taken for utilization of India's demographic advantage

- **Skill Development:** Ministry of Skill Development and Entrepreneurship has undertaken several programs for skill training such as Skill India Mission, Pradhan Mantri Kaushal Vikas Yojana etc. in order to **cater to the global skill gap**.
  - National Education Policy 2020 provides for inclusion of vocational education in the school curriculum and imparting skill training at an early age.
- **Migration Agreements:** India has signed migration and skill training agreements with various countries such as Italy, France, Germany etc.

Challenges in labour mobility

- **Covid-19 impact:** The pandemic severely impacted migrant workers, particularly those in low-skilled jobs, leading to significant job losses and debt.
- **Anti-immigration policies and sentiments:** Anti-immigrant sentiments and restrictive immigration policies in many high-income countries create barriers for potential migrants.
- **Complex processes:** Many countries have complex immigration processes that can deter potential migrants.
  - Additionally, there is often a lack of comprehensive integration programs to help migrants adapt to their new environments and become productive members of society.
- **Increasing automation:** Automation and groundbreaking advancements in technology such as Artificial Intelligence are fundamentally changing the nature of work.

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.
- **Skill Development:** India must **invest in skilling initiatives** to equip its workforce with the necessary skills to meet international market needs, especially in sectors where there is labour shortage in high income countries.
  - **Investing in Indian educational and vocational institutions** can build a robust skilling ecosystem that meets global standards.
- **International agreements:** Enhance bilateral and multilateral agreements to facilitate labour mobility.
  - Simplifying immigration processes, providing clear information about migration opportunities, and offering support services for migrants can make the process more accessible and efficient.
- **Public awareness: Addressing negative public perceptions** through public awareness campaigns and highlighting the positive contributions of migrants can help create a more favourable environment for labour mobility.
- **Reducing costs: Reducing labour mobility transaction costs** and ensuring the smooth reintegration of returning workers into the Indian labour market.
- **Women empowerment:** Getting more women to enter the workforce will be pivotal, as only 24% were participating in 2022, according to ILO estimates.

3.4. INDIA'S TRADE DEFICIT

Why in the news?

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**.

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

- **Trade deficit** (also known as **negative trade balance**) occurs when country's **value of imports are more than that of 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**.

Impact of higher trade deficit on Economy

- **Negative**
  - **Depletion of Forex reserves** due to the need to pay for excess imports, raising concerns of **depreciation of domestic currency**.
  - **Widening current account deficit** which may adversely affect credit rating of the country and raise borrowing costs.
  - **Strategic implications** due to sustained trade deficit, particularly for essential products or critical sectors.
- **Positive**
  - **Access to wider range of goods**, increased **domestic investment** if deficit is driven by imports of capital goods, etc.

Reasons behind India's higher trade deficit

- **Reliance on imported inputs,** including crude oil and pharmaceutical ingredients.
- **Changing consumption patterns,** including increased demand for consumer durables, luxury goods etc.
- **Structural factors** such as sub-optimal growth of manufacturing sector, higher logistics cost, infrastructure bottlenecks etc.
- **Domestic policies** such as inverted duty structure, frequent bans on exports of commodities etc.
- **Others –** Sub-optimal utilization of FTAs, imposition of non-tariff barriers by developed countries etc.

3.5. AGRICULTURE EXTENSION SYSTEM

Why in the news?

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

Krishi Sakhis

- Krishi Sakhis are **practicing farmers and trained para extension professional** in agriculture at grassroot level.
  - **Agriculture Extension system** support farmers and rural producers in **applying scientific research and new knowledge** to agricultural practices through education, training and information.
- **Role:** To be **farmers' friend** at their doorstep with all necessary information, skills and abilities to guide farmers on various aspects of natural farming, providing capacity building and skilling in emerging areas of natural farming and soil health management.

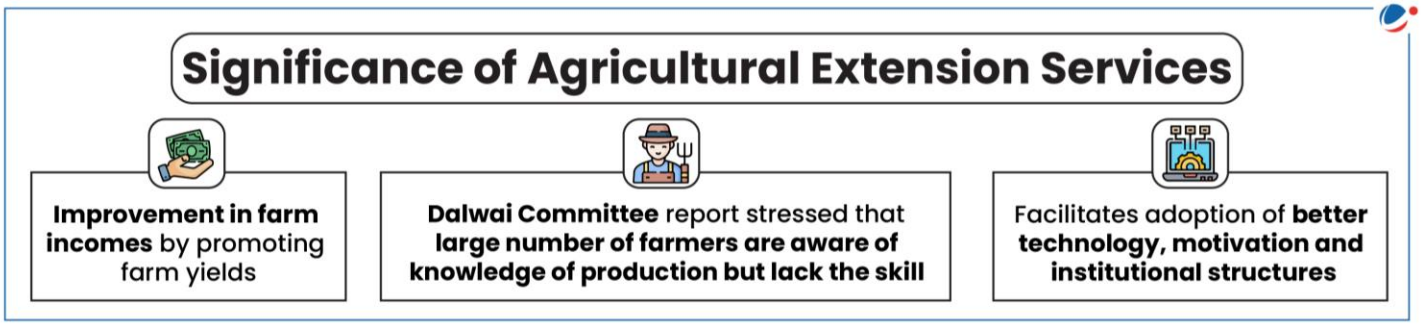
Krishi Sakhi Convergence Program (KSCP)

- **Ministry:** Ministry of Agriculture and Farmers' Welfare (MoA&FW) and Ministry of Rural Development jointly launched the Krishi Sakhi Convergence Programme (KSCP).
- **Aim:** To transform rural India through the **empowerment of rural Women as Krishi Sakhi**, by imparting training and certification of Krishi Sakhis as **Para-extension Workers**.
  - It aims to **create 70,000 Krishi Sakhis** on natural farming and soil health management in a phased manner.
- **Part of Lakhpati Didi program:** Under Lakhpati Didi program, the aim is to create **3 crore Lakhpati Didis,** one dimension of which is **Krishi Sakhi**.
- **Implementation:** It has been rolled out in **12 States in Phase – 1**: Gujarat, Tanil Nadu, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Karnataka, Maharashtra, Rajasthan, Odisha, Jharkhand, Andhra Pradesh, and Meghalaya.
  - Presently, **over 34,000 Krishi Sakhis** out of 70,000 have been **certified** as Para-extension Workers.

Agricultural Extension System in India

- Currently, agriculture R&E system in India is **dominated by the public sector** and is led by the **Indian Council of Agriculture Research (ICAR)**.
  - **ICT led interactive technology information dissemination- VISTAAR** (Videos on farm technologies to be developed, technical vetting to videos, monitoring of state nodal agencies & stakeholders).
  - Application and **promotion of drone technology** in agriculture across the country.
  - **Involvement in big data management (ICAR-CSISA Collaborative project)** for obtaining feedback regarding technology adoption and development of strategies for upscaling and out-scaling

- **National Mission on Agriculture Extension and Technology (NMAET):** Introduced to enable delivery of technology and improve current agronomic practices of farmers under **four sub missions**, namely:
  - Sub Mission on Agricultural Extension (I),
  - Sub Mission on Seed and Planting Material (SMSP),
  - Sub Mission on Agricultural Mechanization (SMAM) and
  - Sub Mission on Plant Protection and Plant Quarantine (SMPP).
- **Krishi Vigyan Kendras (KVKs):** KVKs are field research units of the ICAR and are meant to test new seed varieties, agronomic practices, machinery etc. in field conditions across different agro-climatic zones before these are cleared for adoption by farmers.
  - Additionally, they conduct farmer outreach programmes through on-farm demonstration plots, training etc.
- **Other players in public sector**: State Agricultural Universities (SAU) and ICT-led extension interventions by MoA&FW.
  - ICT-led schemes include m-Kisan, Kisan Call Centre etc.
- **Extension services by Private sector:** Mostly by input dealers, such as those marketing seeds, fertilizers and farm machinery.
  - E.g., Companies such as IFFCO and KRIBHCO etc. undertake extension activities by conducting farmer meetings, organizing crop seminars, arranging for soil testing facilities etc.



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:** There are considerable variations in presence of extension system and investments across various states.
  - **Eastern states** which are also a few of the poorest states with high dependency on agriculture and low agriculture productivity are also the states with lowest spending on Agriculture R&E.
- **Skewed Allocation:** India's allocation of agriculture extension and training is highly skewed towards crop husbandry (92%) while livestock sector contributes significantly to agri. Output.
- **Lacks outcome orientation:** The public extension delivery system has functioned more as targeted activity based rather than targeted outcomes-based mechanism.

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 and dairy (high value agriculture).
- **Innovation networks:** Designing and implementing **innovation networks through digital platforms** to permit free two-way flow of ideas and technologies. E.g., Ranking of KVKs through KVK Portal- DARPAN
  - Collaboration with private partners under **Public-Private-Peasant-Policy Partnership (P-P-P-P-P) mode.**
- **Agri-Rural Markets:** Periodical rural markets can be developed into retail cum logistics hub named **Primary Agri-Rural Markets (PRAMs)** which include facilities for aggregating produce, grading, price discovery and increasing the bargaining power of farmers.

To know more about the SHGs and Lakhpati Didis, refer to Article 3.5. Self Help Groups (SHGs) of the August 2023 Monthly Current Affairs Magazine.

3.6. TECHNICAL TEXTILES

Why in the News?

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

More about News

- **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).

About GREAT Initiative

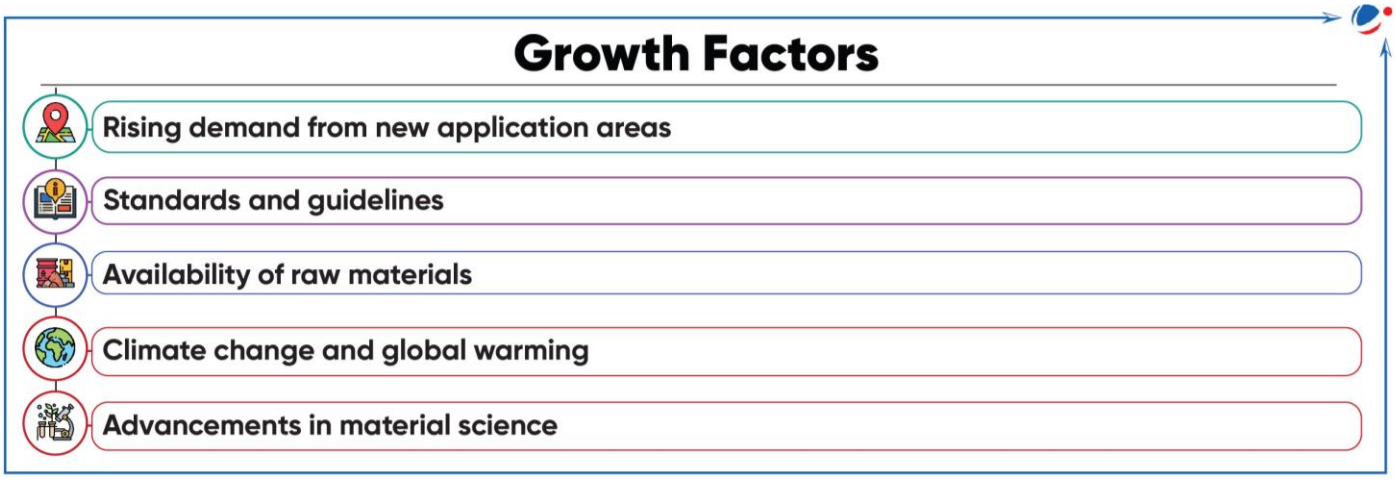
- **Nodal Ministry:** Ministry of Textiles
- **Objectives:** Encourages young innovators, scientists / technologists, and startup ventures in the field of Technical Textiles to translate their ideas into commercial technologies /products and make India self-reliant.
- **Grant in Aid:** Normally upto Rs.50 Lakhs for a period of 18 months.

About Technical Textiles

- 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.**
  - Technical Textiles are used for various applications ranging from agriculture, roads, railway tracks, sportswear, health on one end to bullet proof jacket, fireproof jackets, high altitude combat gear and space applications on another end of spectrum.

Significance of Technical Textiles for India

- **Enhances the Productivity:** According to the Technical Textiles Ecosystem in India report, **Use of 45ecognize** in horticulture leads to increase in farm productivity by 2-5 times.
- **Convergence with government Initiatives:** Like target of phasing out single use plastic items provide opportunity for **Pack-tech to supplement the efforts** by enhancing production.
  - India is dominating the Packtech segment with a global market share of 40-45%.
- **High Growth rate:** Indian technical textiles market growing at a rate of 8-10 per cent per annum**.**
  - Indian technical textiles market is **fifth largest 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 per cent
- **Others:** Ability to scale up in a short period; Highwage workforce generating capacity, etc.



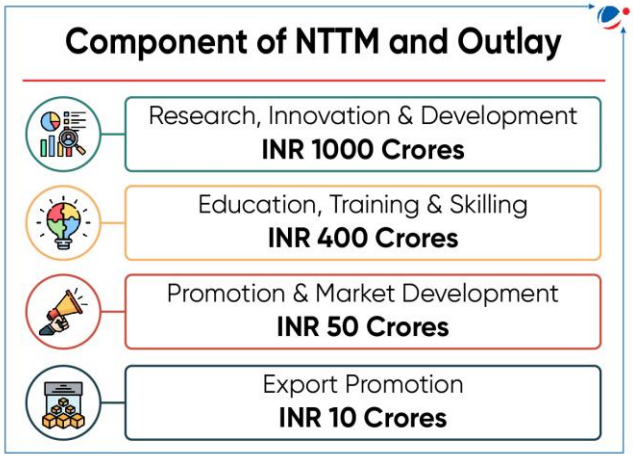
Challenges of Technical Textiles growth in India

- **Import dependence for machinery:** Currently, majority of machinery used to manufacture technical textiles products is not available in India.
- **Lack of Adoption:** Majority of intended end users of technical textile products are still unaware of the benefits of usage of such products.
- **Lack of standardization and related regulations**: Several technical textile products do not have Standard Benchmarks, resulting in availability of sub-standard cheaper products.

- Institutional buyers such as defence have traditionally opted for import route for procurement of several technical textile products owing to the required standards.

- **Entrepreneurial Gap:** Limited entrepreneurial culture and skill training in technical textiles hinder investment attraction and expansion of production capacities in the country.
- **Inadequate R&D facilities for technical textiles**: Hurdle for the industry because it stifles innovation in a field that is characterised by fast changes in products and processes.

Government Initiatives



- **National Technical Textiles Mission (NTTM):** To position the country as a global leader in Technical Textiles.
  - **Implementation period:** FY 2020-21 to 2023-24.
  - **Nodal Ministry:** Ministry of Textiles.
- **Schemes:**
  - Production Linked Incentive (PLI) scheme for textiles
  - PM Mega Integrated Textile Regions and Apparel Parks (MITRA) Scheme
  - Scheme for Integrated Textile Parks (SITP)
- **Quality Control Regulations:** Ministry of textiles has issued Quality Control Order (QCOs) for 19 items of Geo-tech Textiles, 12 items of Protective Textiles items, 20 items of Agro Textiles and 06 items of Meditech Textile.
- **New HSN Codes:** Development of new HSN Codes dedicated to technical textiles' products.
- **Standards in technical textiles:** Development of more than 500 Bureau of Indian Standards (BIS) standards for technical textiles.
- **Mandatory usage of technical textiles:** Technical textiles products have been identified for mandatory usage across several Central ministries/departments to derive the benefits of technical textiles in various fields of applications.

Way forward

- **Awareness creation:** Government and the industry need to build a solid infrastructure to educate people about technical textiles.
- **Skilling and education ecosystem:** The government needs to work with various entrepreneurship development institutes for initiating courses on entrepreneurship in technical textiles.
- **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. This arrangement can be a win-win for Indian and foreign players as it provides access to new markets and opportunities.
- **Promote Start-ups:** Creation of incubation centres and encouragement of start-ups for entrepreneur development in technical textiles.

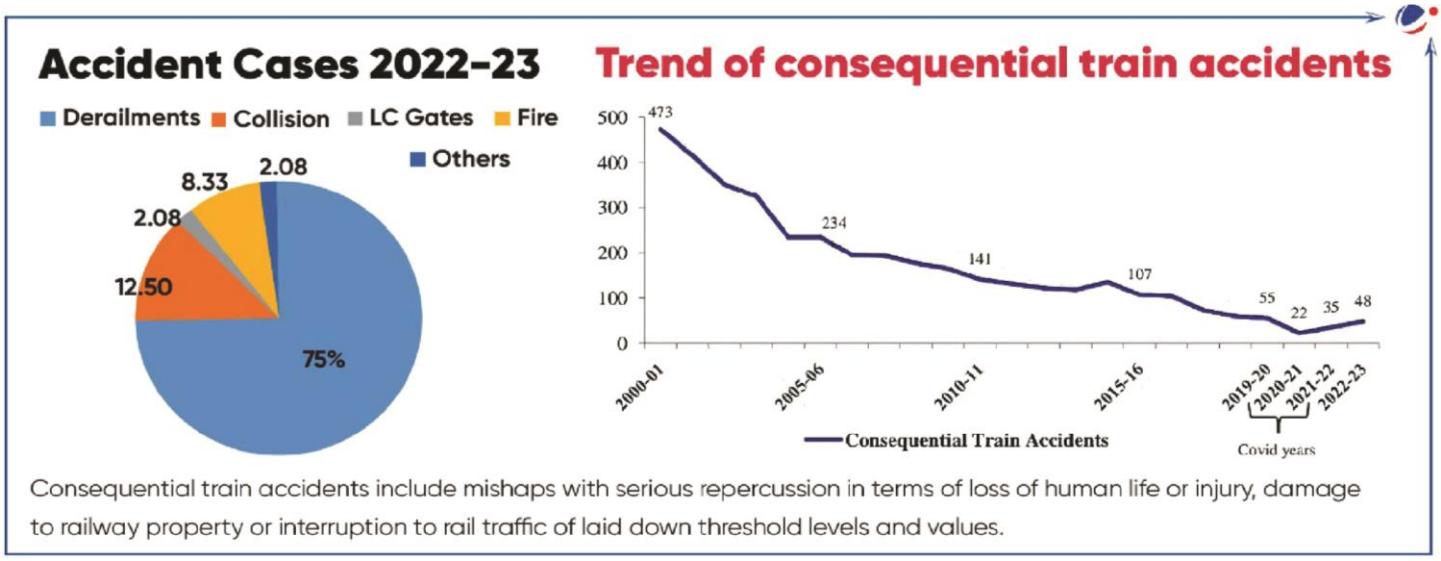
Scan the QR code to know more about **Textile Sector.**

Weekly Focus #122: Threads of Transformation: India's Textile Industry Weaving a Modern Future

3.7. INDIAN RAILWAYS SAFETY

Why in the News?

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



Causes of Railway Accidents

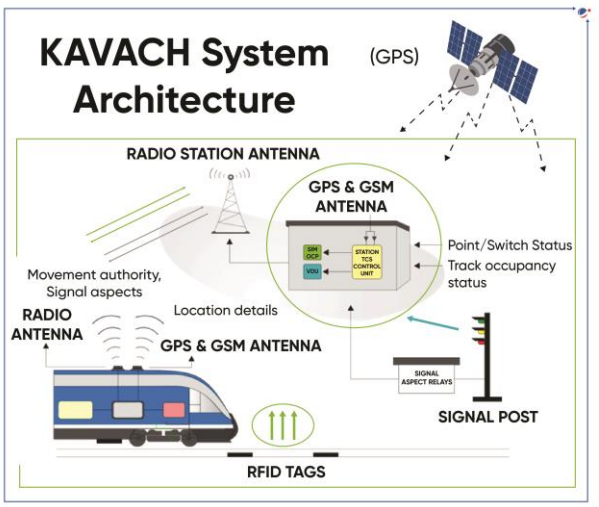
- **Derailment:** Factors could be inadequate maintenance of locomotives, rolling stock, track, signals etc.; and other operational irregularities.
- **Human Error:** The error caused due to human failure, comprising both Railway Staff as well as other than Railway Staff such as road users, passengers, miscreants etc.
    - As per Indian Railways, Around **75% of derailments occur due to `railway staff failure', and another 10 % derailments are caused by `equipment failures'.**
- **Signal Failure:** Defective or damaged track circuits and axle counters are leading causes of signal failures.
    - **For example**- Faulty signal circuit modifications resulted in incorrect signaling, leading to the Balasore train collision in 2023.
- **Fire accidents in coaches**: Factors like inflammable material carried by passengers, Short circuit, Negligence by pantry car staff, lease contractor, etc.
- **Human Resources:** Vacancy of around 20,000 in safety-critical categories workforce of Indian railways.
    - Safety-critical categories include loco crew, train manager, station master etc.

Steps taken for Railway Safety

- **KAVACH System:** KAVACH an Indigenous Automatic Train Protection (ATP) system which has Cab Signalling features-useful for high speeds as well as foggy weather.
    - In technical terms it is known as **Train Collision Avoidance System (TCAS) or Automatic Train Protection System (ATP) system.**
    - As of February 2024, Kavach has so far been deployed on 1465 Route km and 139 locomotives (including Electric Multiple Unit rakes) on South Central Railway.

Working Mechanism of KAVACH system

- KAVACH uses a **network of devices mounted on two trains** moving towards each other to avoid a collision.
- The devices work with the help of **Radio Frequency Identification (RFID) tags** and **Global positioning systems (GPS).**
- This system avoids the risk of collision by precisely assessing the course of two trains at **"collision risk"** and **automatically initiating the braking system**.



- **Rashtriya Rail Sanraksha Kosh (RRSK):** Launched in 2017-18, RRSK is a Rs. 1 lakh crore five-year fund dedicated to 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; interlocking of Level Crossing (LC) Gates, 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.
- **Eliminated Unmanned level crossing:** All unmanned level crossings (UMLCs) on Broad Gauge (BG) route have been eliminated by January 2019.
- **Safety Information Management System (SIMS):** In order to put in place a faster and efficient system for accident reporting, analysis and sharing of information between Zonal Railways (ZRs) and Railway Board (RB), a web based application SIMS was developed (2016) by the Safety Directorate of RB.
- **Use of fire retardant materials:** The Indian Railways have adopted fire retardant interior furnishing including, wall panelling, flooring, roof panelling etc. to minimize the risk of fire accidents.

Way Forward

- **Railway Safety Authority:** As recommended by **Kakodkar Committee**, need to create a statutory Railway Safety Authority with enough powers to have a safety oversight on the operational mode of Railways.
  - Currently, three vital functions (rule-making, operations and the regulation) are all vested in the Railway Board.
- **Detailed Outcome Framework:** CAG's 2021 report on **'Derailment in Indian Railways'** recommends creating a 'Detailed Outcome Framework' for safety works funded by RRSK.
  - This framework would assess each safety initiative's results, ensuring RRSK funds meet their intended objectives and improve railway safety effectively.
- **Developing AI-enabled applications:** AI can analyze extensive digital data from stations and trains, flagging critical irregularities and promptly alerting top railway management for enhanced safety monitoring.
- **Track Safety Tolerances**: As recommended by the Khanna Committee, efforts will be made by Research Design & Standards Organisation (RDSO) to draw out safety tolerances for different speeds and categories of track, on the basis of practices followed in various countries and after studying the whole gamut of rail-wheel interaction.
- **Implementing best practices**: Mumbai suburban's long-standing Automatic Train Protection Systems serve as successful models, which can be replicated nationwide for train safety.

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.

3.8. OFFSHORE MINERALS IN INDIA

Why in the news?

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

About Offshore Minerals in India

- **Offshore Mining:** It is the **process of retrieving mineral deposits from the 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** essential for development.
- **Reserves:** Geological Survey of India has delineated the resources of the following minerals in the offshore areas:
  - **Lime mud** within the EEZ off Gujarat and 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 the Eastern and Western continental margins.
- **Polymetallic Ferromanganese (Fe-Mn) nodules and crusts** in Andaman Sea and Lakshadweep Sea.

Offshore Areas (Existence of Mineral Resources) Rules, 2024

- **Applicability:** These rules apply to **all minerals except** mineral oils, hydrocarbons and **minerals specified in Part B of First Schedule** to the Mines and 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 following:
  - **Exploration Stages:** Exploration for any mineral deposit involves four stages:
    - ✓ **Reconnaissance survey (G4)**
    - ✓ **Preliminary exploration (G3)**
    - ✓ **General exploration (G2)**
    - ✓ **Detailed exploration (G1)**
  - **Feasibility Studies:** Stages of feasibility study include: **Geological study (F3), Pre-feasibility study (F2) and Feasibility study (F1).**
- **Exploration Standards:** Rules mandate **rigorous exploration standards** to ensure accurate assessment and sustainable development of offshore mineral resources.
  - A minimum of **General Exploration (G2)** to establish indicated mineral resource is required to **grant mining leases**.
  - Completion of at least **Reconnaissance Survey (G4)** to estimate Reconnaissance Mineral Resource or mineral potentiality of mineral block is necessary for obtaining composite licenses.
- **Geological Study:** On completion of exploration operations, geological study report shall be prepared by the licensee to establish probable mineral reserve.
- **Specific Exploration Norms:** Rules set specific exploration norms for a variety of deposits and minerals, including construction-grade silica sand, calcareous mud, phosphatic sediments, deep sea minerals, rare earth element (REE) minerals, hydrothermal minerals, and nodules.

To know more about Offshore Minerals, kindly refer to Article 3.14. Offshore Areas Mineral (Development and Regulation) Amendment Act, 2023 in August 2023 edition of VisionIAS Current Affairs Magazine.

3.9. NEWS IN SHORTS

3.9.1. FOREIGN DIRECT INVESTMENT (FDI)

As per data released by Department for Promotion of Industry and Internal Trade (DPIIT), **FDI inflows in 2023-24 contracted by 3.49% to $44.42 billion as** compared with 2022-23.

Other Key Highlights

- **Maharashtra received highest FDI** followed by Gujarat and Karnataka in FY 2023-24.
- **Singapore** was the **top source of foreign inflows** followed by Mauritius and USA in FY 2023-24.
  - **Top 5 countries for FDI equity inflows into India during 2000-24** are Mauritius followed by Singapore, USA, Netherland, Japan.
- Computer software & Hardware, followed by Service sector and Construction Activities **received highest FDI** in FY 2023-24.
  - **Top 5 sectors receiving highest FDI equity inflow during 2000-2024** are Services Sector, Computer Software & Hardware, Trading, Telecommunications, Automobile Industry.

About FDI

- It is an **investment made by a company or an individual in one country into business interests** located in another country.
- **DPIIT** is **nodal Department for formulation of FDI policy** in India.
- FDI is permitted through **Automatic route** (Government approval not required) or **Government route** (approval required).
- Foreign Currency Convertible Bonds, Foreign Institutional Investment with certain conditions and Global Depository Receipts are **included in FDI**.

- **FDI is prohibited in** Lottery Business, Gambling and Betting, Chit funds, Nidhi company, Trading in Transferable Development Rights etc.

Significance of FDI

- Stimulates economic growth, enables development in backward areas, ensures exchange rate stability, etc.

Concerns regarding FDI in India

- Most FDI inflow is **concentrated in few states** like Maharashtra & Karnataka, **widening existing inequalities**.
- FDI may lead to **unfair competition and ultimately affect domestic companies.**



3.9.2. INDIA'S OUTLOOK TO POSITIVE FROM STABLE

S&P Global Ratings revised its outlook on India to **positive from stable** and affirmed its 'BBB-' long-term and 'A-3' short-term unsolicited foreign and local currency sovereign credit ratings.

Sovereign Credit Ratings

- **Definition:** A sovereign credit rating is a **measurement of a government's ability to repay its debt**.
  - Credit ratings **map the probability of default** and therefore reflect the willingness and ability of borrower to meet its obligations.
- **Parameters:** Typically, rating agencies use **various parameters** to rate a sovereign including growth rate, inflation, government debt, short-term external debt as a percentage of GDP, and political stability.
- **Ratings:** Sovereign credit ratings broadly rate countries as either **investment grade or speculative grade**, with the latter projected to have a **higher likelihood of default on borrowings**.
  - The ratings vary from AAA (highest rating) to D (lowest rating) and the **threshold** of Investment grade is considered to be **BBB- for S&P and Fitch and Baa3 for Moody's**.
- **Significance:** When favorable, these ratings can facilitate countries to access global capital markets and foreign investment.

To know more about Credit Rating Agencies, kindly refer to Article 3.1. Credit Rating Agencies in August 2023 edition of VisionIAS Current Affairs Magazine.

3.9.3. GLOBAL ECONOMIC PROSPECTS REPORT

World Bank released 'Global Economic Prospects Report'

- Report called for a **significant acceleration in public investments** by Emerging Markets and Developing Economies (EMDEs) to meet their development goals.

Key highlights

- **Investment Level:**
  - Public investment averages about **25% of total investment in the median EMDE.**
  - Public investment in these economies has e**xperienced 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.

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.

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.

3.9.4. UNCTAD'S REPORT ON GROWING PUBLIC DEBT

'A World of Debt Report 2024: A growing burden to global prosperity' released by UN Trade and Development (UNCTAD)

Report highlights **alarming surge in global public debt** and proposes a plan to **revamp global financial system** to tackle current debt crisis.

- Public debt **refers to general government domestic and external debt.**

Key highlights of Report

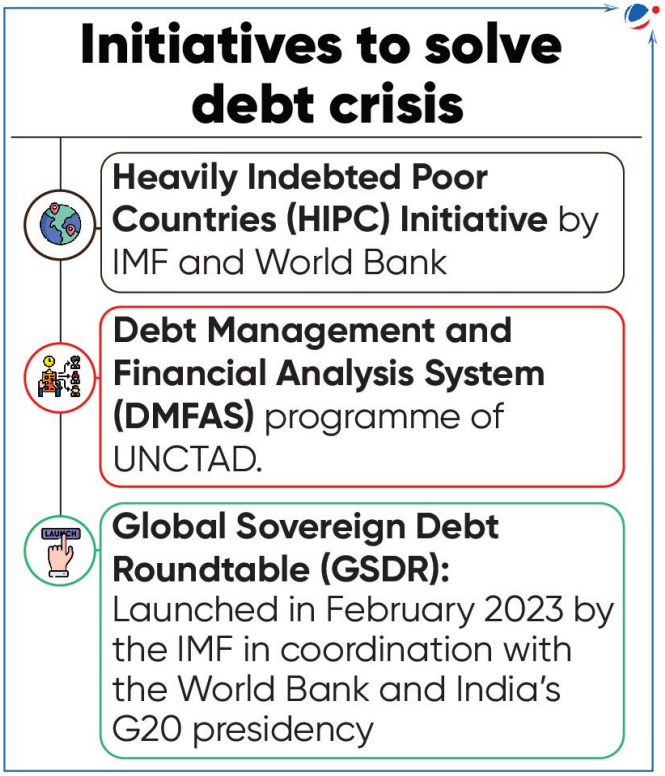
- **Debt surge:** In 2023, global public debt reached **historic peak of $97 trillion.**
- **Drivers:** Cascading crises and sluggish and uneven performance of global economy.
- **Regional Disparity:** Public debt in **developing countries** (accounting for 30% of global total) is **rising at twice the rate** of developed countries.
    - In 2023, **India's public debt** reached **US$ 2.9 trillion**, accounting for **82.7% as a share of GDP**.

Implications of high public debt:

- **High fiscal burden:** More than half of developing countries allocate at least 8% of government revenues to interest payments.
- **Decreased developmental spending:** 3.3 billion individuals reside in nations where interest payments exceed spending on education and health combined.
- **Climate inaction:** Interest outweighs climate investments in emerging and developing countries.

Roadmap to finance sustainable development:

- **Inclusive International Financial Architecture** with increased participation of developing countries in its governance.
- **Provide greater liquidity in times of crisis** expanding contingency finance through IMF instruments.
- **Scaling up affordable long-term financing** through transformation and expansion of Multilateral Development Banks.



3.9.5. WORLD EMPLOYMENT AND SOCIAL OUTLOOK: MAY 2024 UPDATE

The report is published by the **International Labour Organisation.**

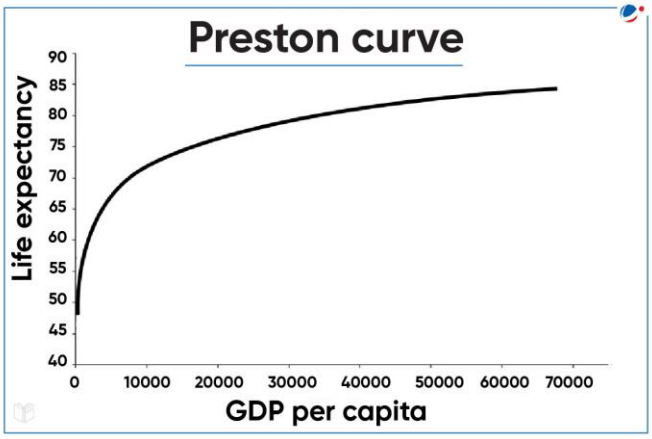
Key highlights

- World unemployment to **fall slightly in 2024.**
- **183 million people** are unemployed (being available at short notice and actively looking for work).
- **45.6 % of women** (aged 15 and above) are employed, compared to **69.2 % of men**, a gap of **23.6%**
    - Reason for such gap: **family responsibilities (marriage and parenthood).**
    - Also, women receive **lower labour income than men –** especially in the **developing world.**
- Informal workers have grown from **1.7 billion in 2005 to 2.0 billion in 2024.**

3.9.6. PRESTON CURVE

It was first proposed by **American sociologist Samuel H. Preston in 1975**.

- It highlights that an **increase in per capita income** of a country does **not cause much of a rise in the life expectancy** of its population **beyond a point**.
    - **When a poor country begins to grow**, its per capita income rises and causes increase in life expectancy initially due to nutrition, sanitation and access better healthcare.
    - However, it begins to flatten out after a certain point.



3.9.7. RESERVE BANK OF INDIA (RBI) JOINS PROJECT NEXUS

Nexus is a multilateral international initiative to enable **instant cross-border retail payments** by interlinking domestic **Instant Payments Systems (IPS).**

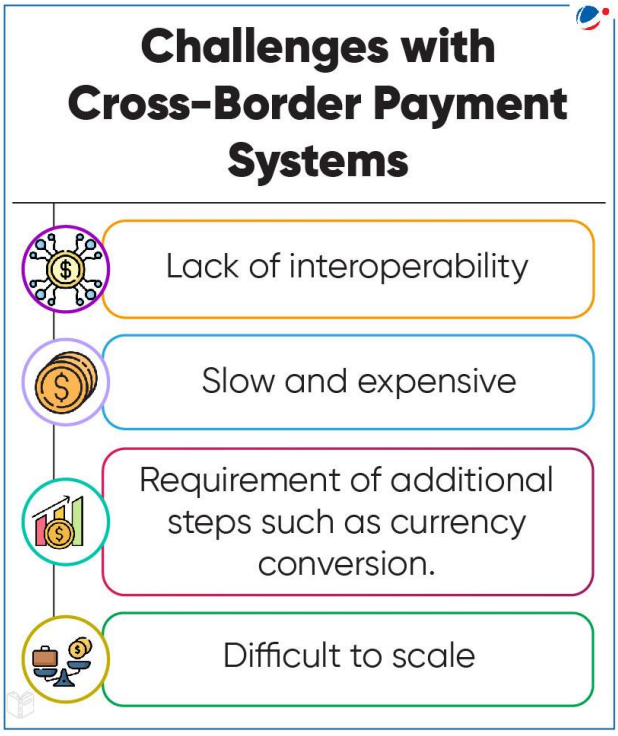
- An IPS is an **electronic payments system which facilitates inter-bank fund transfer and sends confirmation of payment to the receiver and originator within a minute or less**. E.g. Unified Payments Interface (UPI).

About Project Nexus

- **Conceptualized by** the **Innovation Hub of the Bank for International Settlements (BIS)**.
    - BIS was established in **1930** with its **head office in Basel**, Switzerland and is owned by **63 central banks, including RBI**.
- It will **connect IPS of four ASEAN countries** (Malaysia, Philippines, Singapore, and Thailand) and **India** and is expected to go **live by 2026**.
- Nexus is designed to standardize the way **domestic IPS connects to one another**.
    - Rather than an IPS operator building custom connections for every new country to which it connects, the **operator only needs to make one connection to Nexus**.
- It aims to achieve G20 targets of enabling **cheaper, faster, more transparent and accessible cross-border payments**.

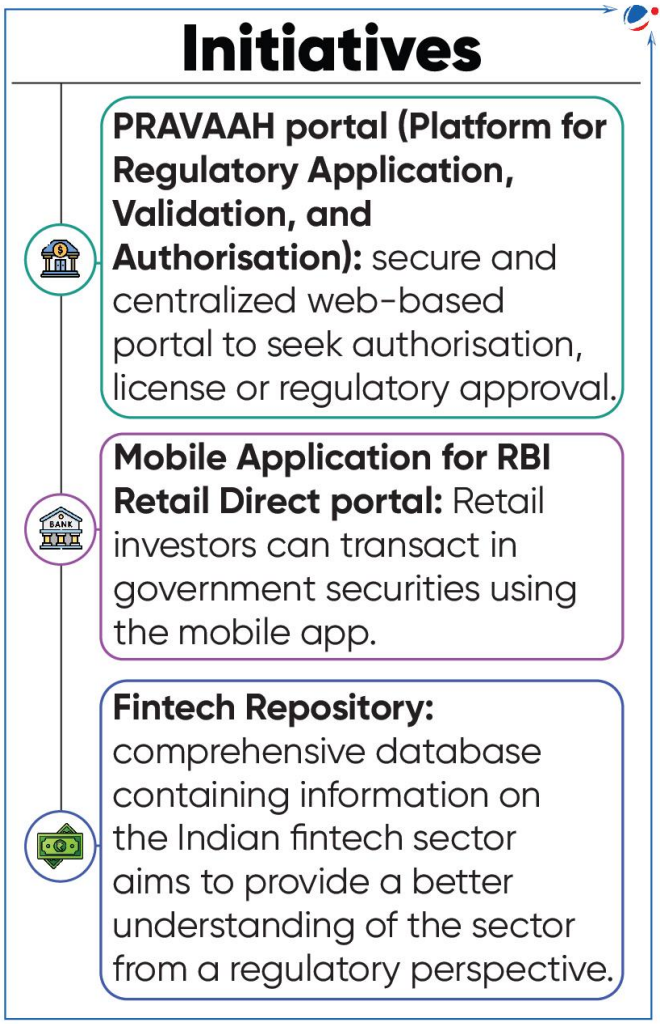
Benefits of Project Nexus:

- **Simplifies cross-border payments**, reducing complexity, cost, and transaction time.
- It offers complementary **low-cost and scalable** rail for all payment service providers.
- It **bridges gaps in interoperability** by fostering standardisation and harmonisation across diverse systems.



3.9.8. RBI LAUNCHES VARIOUS INITIATIVES

Reserve Bank of India (RBI) has launched three initiatives to enhance public **access to the central bank and facilitate regulatory approvals.**



3.9.9. VARIABLE REPO RATE (VRR)

The recent **VRR auction by Reserve Bank of India (RBI)** witnessed a good response from banks.

About VRR

- When RBI desires to **infuse liquidity in the economy** but Banks are not eager to borrow from RBI at Repo Rates as interest rates in economy may already be lower, in that case **RBI allows Banks to borrow at VRR decided by market** generally lower than Repo Rate (though not less than Reverse Repo Rate) for duration more than One Day.
  - Repo Rate is the rate at which Banks **borrow money from RBI which is fixed by RBI.**
- The borrowing duration is more than **One Day and usually up to 14 days.**
- It is a tool to inject **short-term liquidity into the banking system.**
- Similarly **Variable Rate Reverse Repo (VRRR) is conducted to absorb the excess liquidity** from the system.

3.9.10. SECURED OVERNIGHT FINANCING RATE

SBI raised 100 million dollar through its London branch by selling 3-year senior unsecured floating-rate bonds above the **Secured Overnight Financing Rate (SOFR)**.

About SOFR

- It is the **overnight interest rate** for **US dollar-denominated loans and derivatives**.
- It sets the rate at which banks can borrow cash from individuals or other banks overnight.
  - It is **collateralised by the US treasury securities market**.
- It is the **US replacement for London Interbank Offered Rate** (LIBOR).
- LIBOR **provided loan issuers with a benchmark for setting interest rates** on different financial products

3.9.11. PUMP AND DUMP SCHEME

Recently Sebi imposed a fine on some individuals for allegedly operating a 'pump and dump' scheme.

- It was operated by recommendations shared through Telegram channels, resulting in **public shareholders purchasing stock at inflated prices.**

About Pump and Dump Scheme:

- A manipulation activity involving **artificially inflating a stock's price** through **false and misleading information/ recommendations.**
  - It is **done only to sell stock at an inflated price**.
- **Prevalent in micro-cap and small-cap sectors** due to limited public information and lower trading volumes.
- **Impact:** Undermine confidence in financial markets, and substantial losses to investors.
- **Regulation:** Under SEBI's guidelines, it is completely banned.

3.9.12. SEBI AMENDS INFRASTRUCTURE INVESTMENT TRUSTS (INVITS) REGULATIONS 2024

The new norms **allow for the issuance of subordinate units** by privately placed InvITs only to the sponsors on acquisition of an infrastructure project.

- The move **aims to bridge the difference in valuation** done by the sponsor (as a seller) for an asset and that by the InvIT (as a buyer).

About InvITs

- **A type of investment vehicle** similar to a mutual fund that **allows investors to invest in**

infrastructure projects like toll roads, power lines and pipelines etc.

- The **sponsors (infra companies) set up the InvITs** through **SEBI** and are **recognized as borrowers** under the **SARFAESI act 2002**.
  - Parties to an InvIT include its **trustee, sponsor, investment manager and project manager**.
- InviTS **earn income through tolls, rents, interest or dividends** from their investments, which in turn is **distributed to the investors** as their taxable earnings.

Significance of InvITs

- **Low ticket size:** The investor can invest small amounts
- **Liquidity:** Listed on stock exchanges and can be exit at any point
- **Transparency:** investors are informed about where their money is invested
- **Low Risk:** as the trusts are regulated by SEBI

Challenges of investing in InvITs include operational risk, refinancing risk, return risk etc.

3.9.13. CLEARING CORPORATIONS

SEBI has formed a **committee under Usha Thorat** to review ownership and economic structure of **clearing corporations.**

Clearing Corporation (CC)

- It is an entity which handles the activity of **clearing and settlement of trades in securities or other instruments that are traded on stock exchanges.**
- CCs along with stock exchanges and depositories constitute **Market Infrastructure Institutions**.
- CCs are significant as **central risk management institutions** and as a first line regulator.
- **Securities Contracts (Regulation) (Stock Exchanges and Clearing Corporations (SECC)) Regulations, 2018** lays down norms for ownership and governance framework of CCs.

3.9.14. DERIVATIVES TRADING

National Stock Exchange (NSE) chief **cautioned retail investors** against derivatives trading.

About Derivatives

- **Definition:** Derivatives are **financial contracts** that **draw their value from an underlying asset.**
  - The underlying asset can be a **commodity, security, currency, or index.**
- **Purpose:** Can be used for **hedging purposes or speculation.**
- **Types**: Common types of derivatives include **futures, options, and swaps.**
- **Derivatives Market**
  - In India, the derivative market is **regulated by the Securities and Exchange Board of India.**
  - India has two types of derivative markets:
    - ✓ **Exchanges-traded:** Standardised contracts are traded on an exchange.
    - ✓ **Over-the-Counter (OTC):** It is decentralised. Contracts are n**egotiated directly between two parties.**

3.9.15. FRONT RUNNING

Recently, a Mutual Fund was alleged to have indulged in Front- Running.

About Front Running

- **Front Running** refers to usage of non-public information to directly or indirectly buy or sell securities, or enters into **options** or **futures contracts**, in advance of a substantial order. (**Securities and Exchange Board of India (SEBI))**
- It is illegal in India.
- It **undermines confidence in the financial markets** and creates an **uneven playing field** for other investors.
- In 2022, **Securities and Exchange Board of India (Mutual Funds) Regulations, 1996** was amended to incorporate provisions to counter front running.

3.9.16. STATE OF WORLD FISHERIES AND AQUACULTURE 2024

It is prepared and released by the **Food and Agriculture Organization (FAO)**.

- The report's special focus is on "**Blue Transformation in Action**".

Key findings of the report

- World fisheries and aquaculture production hit a new high in **2022 at 223.2 million tonnes**.
  - **With 8 percent** of total production, India ranked second in aquatic animals production.
- For the First time, **aquaculture surpassed capture fisheries** as the main producer of aquatic animals.
- With 1.9 million tonnes, India ranked **first in Inland fisheries production**.

Role of Aquatic Foods in Climate Action

- The 2023 **United Nations Framework Convention on Climate Change** (UNFCCC) Ocean Dialogue recognized the potential of aquatic foods for providing critical climate solutions.

- FAO integrates **traditional knowledge for adapting to climate change** in specific areas, like local species suited for evolving conditions.

Blue Transformation in Action

- FAO introduced its "Blue Transformation" vision in **2021**, It aims to **leverage aquatic food systems, to enhance food security, improve nutrition, etc**
- **Objectives:**
  - **Sustainable aquaculture expansion** to meet global demand, with equitable benefit distribution.
  - **Effective fisheries management** for healthy stocks and fair livelihoods.
  - **Upgraded aquatic value chains** ensuring social, economic, and environmental sustainability.

Fisheries and aquaculture in the context of Global Biodiversity Agreements

- **Convention on Biological Diversity (CBD)** adopted the Kunming-Montreal **Global Biodiversity Framework (GBF)** in 2022 to help countries develop **national plans for protecting biodiversity and living in harmony with nature.**
  - **Aquatic food systems** are directly related to many GBF targets such as management of aquatic spaces; reduction of species extinction risk; etc.
- In 2023, UN members agreed to a **legally binding treaty** for conserving and sustainably using marine biological diversity of areas beyond national jurisdiction.

To know more about the Inland Fisheries sector, refer to Article 3.8. Inland Fisheries of the December 2023 Monthly Current Affairs Magazine.

3.9.17. ICRIER RELEASES POLICY BRIEF ON POST-HARVEST LOSSES (PHL) IN INDIA

The policy brief highlights the **triple win of reducing PHL**:

- benefiting farmers (enhanced income),
- enhancing food security, and
- ensuring sustainability (less resource exploitation) in agri-food systems.

Key highlights

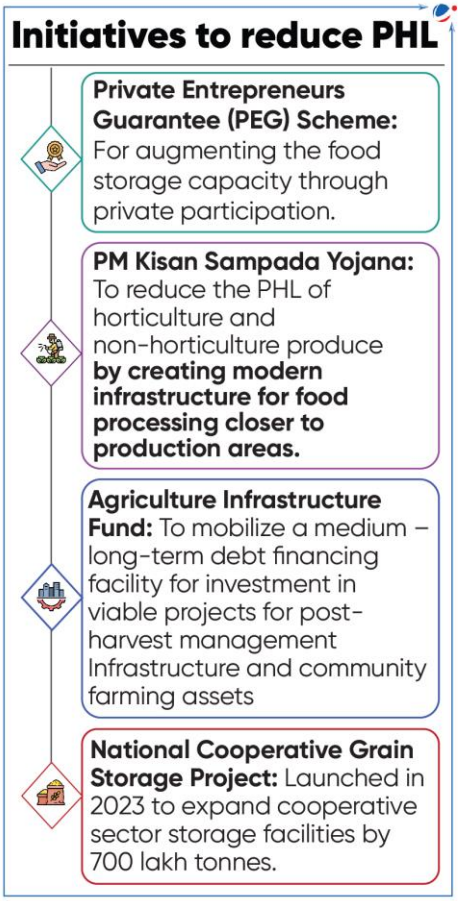
- **Production in India**
  - **Food Grain:** Increased from 74.23 million metric tonnes (MMT) in 1966-67 to **330.5 MMT** in **2022-23.**
  - **Horticulture:** Increased from 96.6 MMT in 1991-92 to **355.25 MMT in 2022-23.**
- **India's Storage capacity:** Expanded from **108.8 MMT in 2010 to 219.4 MMT in 2021**
- **PHL:** Globally, around 30% of food produced never reaches consumers (FAO, 2021).
  - **India faces higher PHL** in cereals, pulses, and oilseeds than global levels.
  - **Annual loss of US $18.5 billion** from 2020 to 2022, despite some reduction in PHL from 2012 to 2022.

Key factors behind PHL in India

- **On-Farm Operations:** Low farmer education and skill levels, weather conditions, and the use of defective machinery.
- **Marketing Channels:** En-route leakages from open lorry transport, poor quality packaging, use of iron hooks, improper storage practices, etc.
- **Policy Issues**: Jute Packing Material Act (1987) mandates using jute bags, which are susceptible to pests, insects, and contamination.

Way forward

- **Mechanization** in agriculture,
- **reforming the Public Distribution System (PDS)** and boosting direct cash transfer, etc.



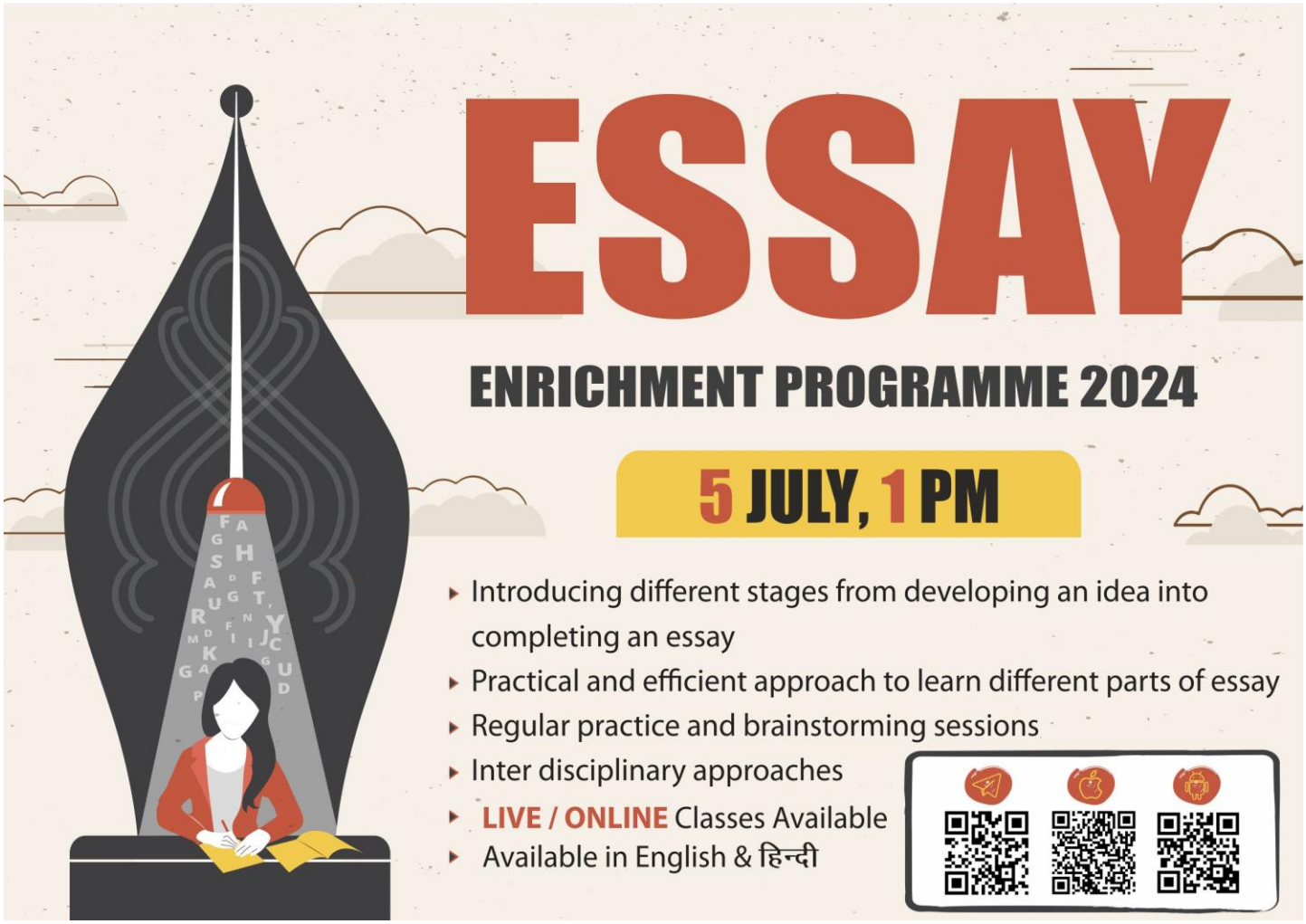
3.9.18. CONTAINER PORT PERFORMANCE INDEX (CPPI)

Nine of Indian ports have found their position among top 100 global ports **in CPPI in 2023.**

About CPPI (2023)

- It is developed by the **World Bank and S&P Global Market Intelligence.**
- The Index is a comparable assessment of **performance based on vessel time in port.**
- It helps to **identify opportunities to improve a terminal or a port** that will ultimately benefit all public and private stakeholders.
- Top-ranked container port in the CPPI 2023 is **Yangshan Port (China)**.

QUIZ **SMART QUIZ**	You can scan this QR code to practice the Smart Quiz of Economics at our open test online platform for testing your understanding and recalling of the concepts.	



4. SECURITY

4.1. 25 YEARS OF KARGIL WAR

Why in the News?

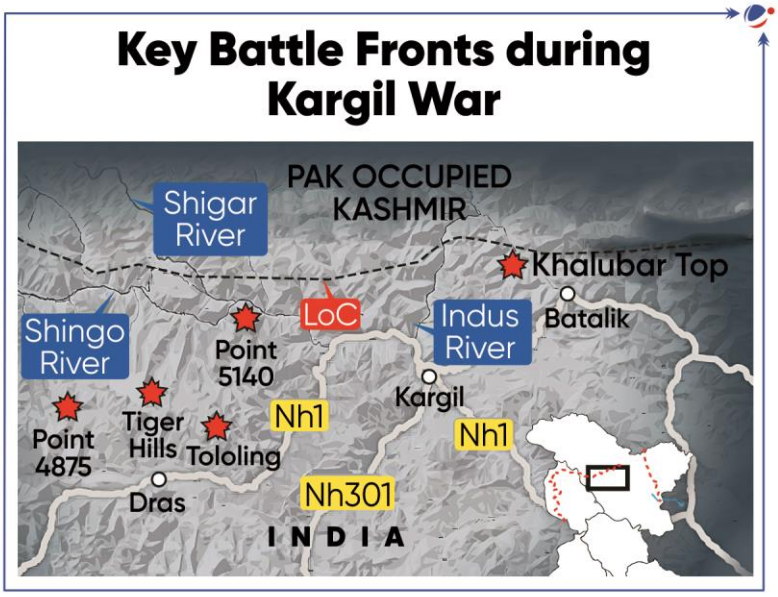
India is celebrating 25 years of Kargil War victory or success of Operation Vijay.

More on News

- **Operation Vijay**, was launched by Indian Army in response to the **infiltration of Pakistani soldiers and militants into the Kargil** district of Kashmir.
  - **Indian Airforce** launched **'Operation Safed Sagar'** for conducting attacks on Pakistani troops positioned on high hills. **Indian Navy** launched **'Operation Talwar'** to check Pakistan's navy in Arabian Sea.
- **Kargil Vijay Diwas is observed annually on July 26** to commemorate the victory of success of Operation Vijay.

About Kargil War

- **War theatre:** The war was fought **in the Kargil district of Kashmir across** 170km high-altitude frontier near LoC.
  - **Key locations were** Tololing, Tiger Hill, Batalik, Drass, Mushkoh Valley, Kaksar, Chorbat La.
- **Commencement of war:** The 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.**



Reasons for Pakistan's intrusion of India

- **Politico-strategic:**
  - To **internationalize Kashmir** as a **nuclear flash point** requiring urgent third party intervention.
  - To **alter the Line of Control (LOC**) and disrupt its sanctity by capturing upheld areas in Kargil.
  - To **achieve a 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 to Kargil, weakening the counter-insurgency efforts and opening new infiltration routes while also raising moral of militants.

Shortcomings in India's defense architecture that contributed to the Kargil War

In the aftermath of the Kargil War, the Indian government established the **Kargil Review Committee (KRC) in July 1999**. Chaired by **K. Subrahmanyam,** a prominent strategic affairs analyst. The KRC and its follow-up by the Group of Ministers highlighted following issues:

- **Intelligence failure:** Government of India did not anticipate the possibility of a war so soon after the Lahore Declaration. Therefore, intelligence failure was one of the prime causes for not anticipating Pakistan's intrusion.

- **Low technology:** Intrusion by Pakistan **could have been detected earlier if India had half-metre resolution satellite imagery capability**, appropriate Unmanned Aerial Vehicle (UAV) in addition to better Human Intelligence (HUMINT).
- **Inadequate resources for defence forces:** Decline in defence expenditure compromised with the **defence modernisation** and replacement of obsolete/ obsolescent equipment and **weapons systems**.
- **A comprehensive security policy:** No attempt was made to evolve a comprehensive security policy keeping in view the 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)
- Enhance satellite imagery capability and induct unmanned aerial vehicles (UAV's)
- Create an **organization** focused on **electronic and communication intelligence** (like the National Security Agency in US)
- Create an **integrated defence intelligence agency (DIA)**
- give more powers and **prominence to the Joint Intelligence Committee (JIC)**
- **Reduce the age profile** in the army and find ways to decrease the pension bill.
- **Establish a committee to study all the issues** related in order to have an **effective border management policy**
- **Publish war histories** and declassify official documents to establish the facts
- Create **synergy between military and the media**
- **Create civil-military liaison mechanisms at various levels**, from Command HQ to operational formations on ground to smoothen relationships.

Major initiatives taken for strengthening India's defence architecture

Specification	Reforms taken
Intelligence	• **Task force** on Intelligence apparatus formed, • **National Technical Research Organisation (NTRO)** was formed in 2004 for the protection of **national critical infrastructure** and handling cyber-related issues. • **A 'Multi Agency Centre' (MAC) has been established**. Information sharing is done at the MAC on daily basis by all intelligence agencies ○ **Defence Intelligence Agency** (DIA) which is a tri-Service Intelligence Agency of MoD, is placed at MAC • **RADAR** Satellite-2 (RISAT-2) was launched by ISRO which is a **Radar Imaging Satellite with all-weather capability to take images of the earth.**
National security management and apex decision-making	• **National Security Council (NSC) was reformed** to **adopt whole of government approach** and NSA have been strengthened over the years. ○ NSC established in 1998 is headed by the **Prime Minister**. The Ministers of Home Affairs, Defence, External Affairs and Finance are its members. ○ The **National Security Adviser** is its secretary. • **Nuclear Command Authority** was established in 2003. Its **Political Council** chaired by the Prime Minister is the sole body which can **58ecognize the use of nuclear weapons.** • **Chief of Defence Staff (CDS)** created in 2019 is **the Permanent Chairman of the Chiefs of Staff Committee.**
Defence Modernisation	• **Agnipath Scheme** to ensure a fine balance between youthful and experienced personnel in the Armed Force. • **Corporatization of the ordnance factories:** To enhance **functional autonomy, efficiency**. • **Defence production and indigenization:** DAP 2020, Positive Indigenisation List, SRIJAN Portal, ADITI (iDEX) • **Defence Offset Policy**: To **leverage capital acquisitions** to develop Indian defence industry • Andaman and Nicobar Theatre Command established in

	• **Technology Development Fund scheme**: specially designed for new start-ups, MSMEs and academia
Border Management	• **Task force on border management** created. • **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 • **Border Infrastructure and Management (BIM) Scheme:** A Central Sector Scheme for the construction of border fence, border flood lights • **Vibrant Village Programme:** A Centrally Sponsored Scheme launched in 2023 for comprehensive development of the select villages abutting northern border in Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand and Ladakh. • **All-weather roads and tunnels** like **Atal tunnel** (connecting Manali to Lahaul-Spiti) and tunnel at **Shinku-La (for an all-weather road to Ladakh)**

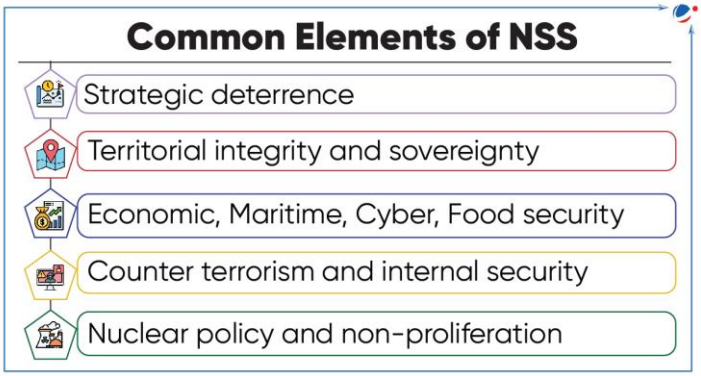
Conclusion

Since Kargil War, the character and conduct of warfare have changed with the growing use of terror and other irregular methods of fighting by non-state actors. Equally important have been the technological advancements in the cyber and space domains. Therefore, Indian armed forces must be prepared for future conflicts with a changed character as the war could be more violent and unpredictable.

4.2. NATIONAL SECURITY STRATEGY

Why in the news?

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



What is National Security Strategy (NSS)?

- An NSS is a **concise summary of a country's strategic vision and objectives** and encompasses domestic and external challenges and addresses **traditional, non-traditional threats and opportunities** and **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.
  - **Major powers like the US, UK, and Russia** have published and updated NSS.
- **Meet changing security dynamics and priorities**: It can encourage the government to regularly review threats, opportunities, and global security trends, ensuring evolving challenges like the hybrid warfare, Chinese navy's growth etc. are addressed timely.
- **Framework for effective Long-term Planning:** A coherent future strategy will help avoid taking short-term, ad hoc, hasty, and regime-centric decisions on important national security issues.
- **Strategic Signalling in world order:** It will clarify India's **strategic intent to friends and foes**, highlight its role as a security provider in the Indian Ocean, and establish clear cooperation with partners.
- **Continuity to Defence Planning**: Discontinuation of Defence Plans (5 year plans) and Long-Term Perspective Plans (15-year plans) adds urgency to formulating the NSS.
- **Operational clarity**: It can help guide **decision-making** in areas like delegation, operationalision of theatre commands etc.
  - It will reduce ambiguity and build meaningful accountability by acting as a reference for **peer review by think tanks**.
- **Adopt Whole of nation approach:** It can help build synergy for harnessing **comprehensive national power** and coordinate operations effectively.

Challenges in codifying NSS in India

- **Lack of Political Will**: Factors like lack of political consensus on national security issues, fear of accountability, 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.

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** among others.
- **Hooda Committee:** It was set up in **2018** to suggest comprehensive **National Security Strategy** to address evolving security challenges and enhance India's defense capabilities. **It suggested the following tenets to a draft NSS:**
  - **Assuming our Rightful Place in Global Affairs**: Playing a significant Global role.
  - **Achieving a Secure Neighbourhood**: Cooperation and stability in the neighbourhood.
  - **Peaceful Resolution of Internal Conflicts**: Integrating North East, combating terrorism, etc.
  - **Protecting our People**: Economic security, Cyber threats, Climate change, etc.
  - **Strengthening our Capabilities**: Maritime borders, space, strategic communications, etc.

Conclusion

NSS can spell out clear-cut ends, ways and means, while relying on delegation, synergy and operational freedom. At cutting-edge level, it will foster initiative, innovation and improvisation. **Two versions of the document** can be released to mitigate the confidentiality issues**: Public version** for external stakeholders and adversaries, signaling our intentions and methodologies and **classified version** for security agencies to act upon. 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.

4.3. JOINT DOCTRINE FOR CYBERSPACE OPERATIONS

Why in the news?

Chief of Defence Staff (CDS) released India's first Joint Doctrine for Cyberspace Operations.



More on the news

- The **Joint Doctrine for Cyberspace Operations (JDCO)** lays **emphasis on understanding military aspects of cyberspace operations.**
- The move highlights how Cyberspace has emerged as crucial domain in modern warfare, in addition to traditional domains of Land, Sea, and Air.

About Cyber Space

- Cyberspace refers to the **global volume of entities** (such as Information and communication technology (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 Cyberspace Operations.
- **Promotes Jointness and Integration** of three services (Army, Navy and Air Force), apre-requisite to the creation of functional integrated theatre commands.
- **Competing globally**, as counties like China have developed significant cyberwarfare capabilities, including cyberweapons to degrade or destroy adversaries' military assets and strategic networks.
- **Preventing hostile actions in cyberspace**, which can impact nation's economy, cohesion, political decision-making, and ability to defend itself.

Other Measures taken for Strengthening cyberspace capabilities in India

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

Conclusion

The doctrine is poised to shape future military strategies and operations, reinforcing the integral role of cyberspace in national defence.

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** created within Ministry of Defence 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.
  - **Assign inter-Services prioritisation** to capital acquisition proposals based on the anticipated budget.
  - **Function as the Military Adviser** to the Nuclear Command Authority.
- CDS **do not exercise any military command**, including over the three Service Chiefs.

4.4. ABOUT AIRCRAFT CARRIER

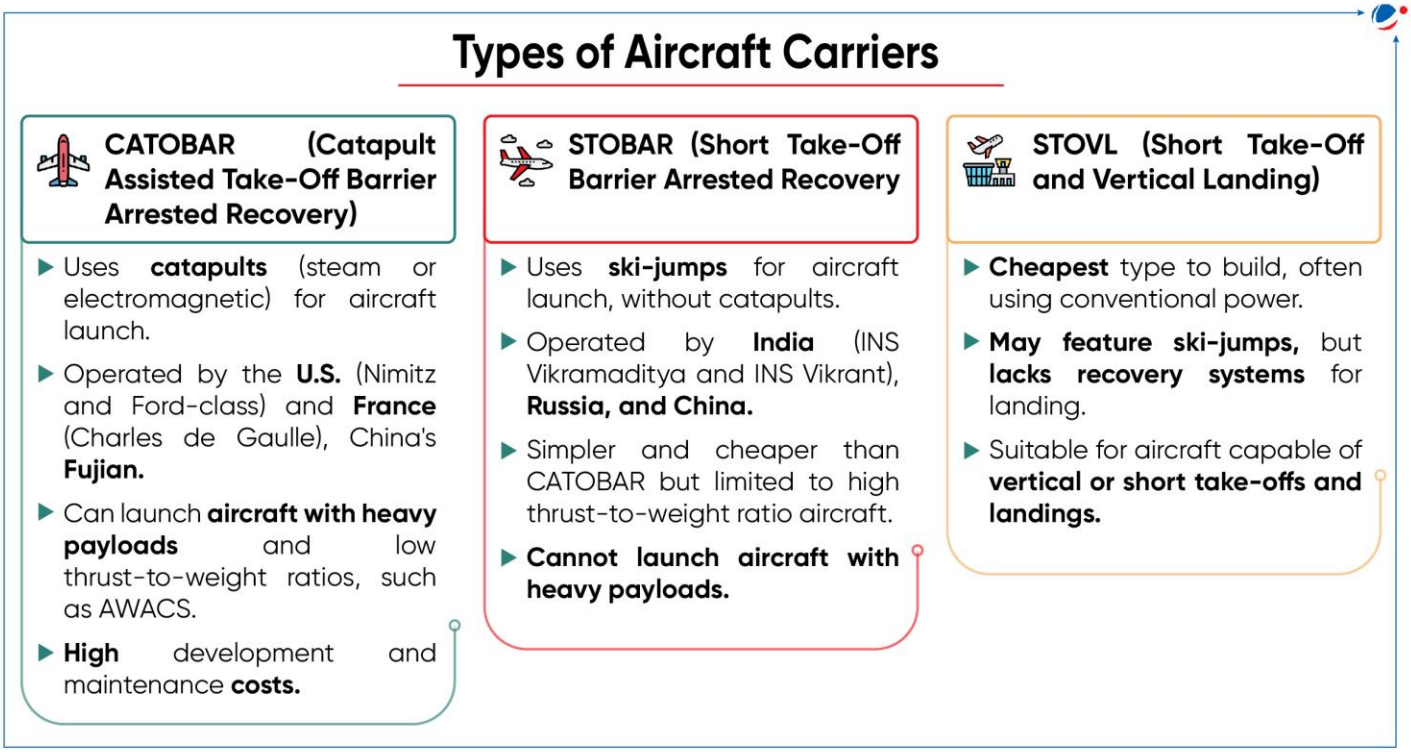
Why in news?

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.

More on News

- 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)** envisaged a requirement of **three aircraft carriers**, with two to be operational (East and West coast) and one in refit at any time.
- This requirement was reaffirmed in the **Maritime Capability Perspective Plan (2012-27)** and **Parliamentary Standing Committee on Defence report (2022-23).**

- 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 Vikramditya** 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.



Why India needs a third aircraft carrier?

- **Enhancing Blue Water Navy Capabilities**: Indian Navy is considered to be a **Blue Water Force** and 3rd aircraft carrier would further reinforce this capability of India.
    - Such capability is important amid India's bid **to be a net security provider** and **maintain favorable balance of power in the Indian Ocean region** where it faces China**.**
- **Continuous Operational readiness:** Three carriers ensure that at least two are always operational, providing coverage for both India's eastern and western seaboards.

Know the term

- Navies are classified in terms of colours.
    - **Brown Water Force:** A navy whose operations are restricted close to the shore, where the water is muddy.
    - **Green Water Force:** A navy that can go farther out.
    - **Blue Water Force:** Navy that can go into the vast, deep oceans of the world.

- **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:** In peacetime, they aircraft carrier act as providers of Humanitarian Assistance and Disaster relief (HADR), complementing the roles of amphibious and other air and sealift mechanisms.

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.

Aircraft carrier verses Submarines

- India's **first Chief of Defence Staff** considered aircraft carriers **expensive and unnecessary**, arguing that the **Indian military** was **"not an expeditionary force"** and did not need to deploy carriers in distant locations.
  - Moreover, there are concerns about the **vulnerability of aircraft carriers to sea-launched and shore-based missiles**, which underscores the **preference for submarines**.
    - ✓ Submarines, with their stealth capabilities and defensive armament, are less r**eliant on a protective screen of battleship**s compared to aircraft carriers that operate prominently on the surface.
- However, **both aircraft carriers and submarines** are essential components of a **balanced naval strategy.**
  - **Both have complementary roles:** submarines focusing on stealth and offensive capabilities, while aircraft carriers offer versatility and comprehensive mission support.

4.5. FORENSIC SCIENCE

Why in the News?

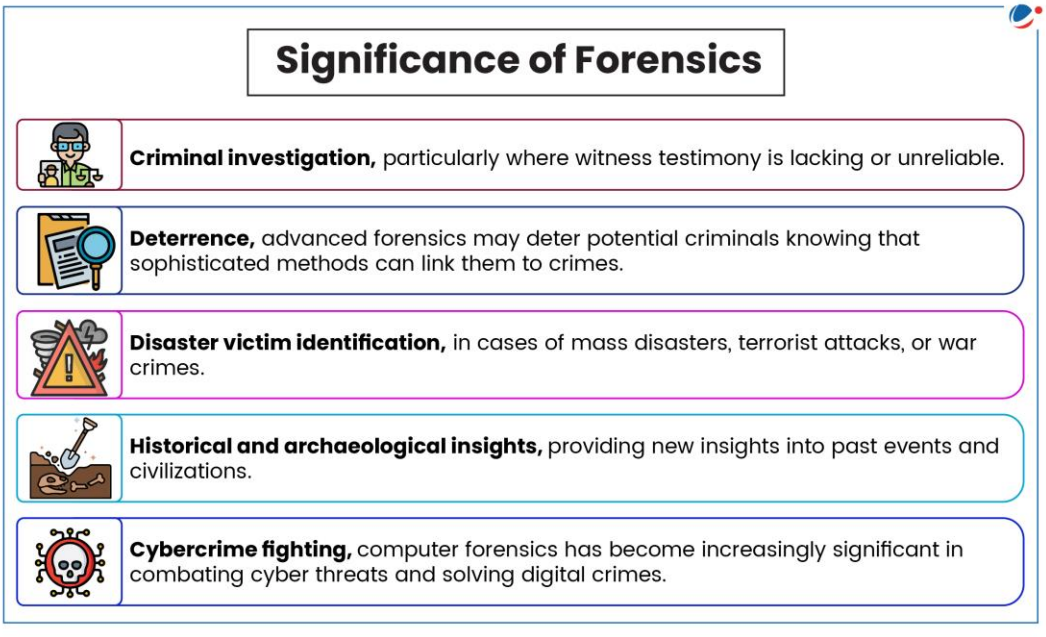
Recently, Union Cabinet approved a Central Sector Scheme '**National Forensic Infrastructure Enhancement Scheme**' (NFIES) for the period from **2024-25 to 2028-29**.

More on News

- The scheme was approved in the context of expected **increase in the workload of forensic science laboratories** as **Bharatiya Sakshya Adhiniyam, 2023 mandates forensic investigation for offences involving punishment of 7 years or more**.
- **Component**s approved under NFIES include:
  - Establishment of **Campuses of National Forensic Sciences University** (NFSU).
  - Establishment of **Central Forensic Science Laboratories**.
  - Enhancement of existing infrastructure of **NFSU-Delhi**.
- **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: Limited number of forensic laboratories** and they are often **under-resourced and overburdened**, leading to significant backlogs in case processing.
  - **e.g.,** ~40% shortage of staff in forensic labs across India. (BPRD)
- **Budget: Inadequate budgetary allocations** for modernizing state police forces, including forensic capabilities.

- **Quality and standardization:** Lack of standardized procedures and protocols across different forensic laboratories, result 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 interagency 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 for effective investigations.
        - ✓ Strengthen **Forensic Medico Legal Services** with adequate training facilities at the State/Central level for the experts doing medico legal work.
    - **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**. Later, Forensic Sciences could be introduced as subjects at the school level.
- **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**: Encourage collaborations between enforcement agencies and private forensic labs to expand capabilities and reduce backlogs.
    - **International collaborations:** Strengthen ties with international forensic institutions for knowledge exchange and transfer of technology in digital forensics and emerging fields.

4.6. FINANCIAL ACTION TASK FORCE (FATF)

Why in the News?

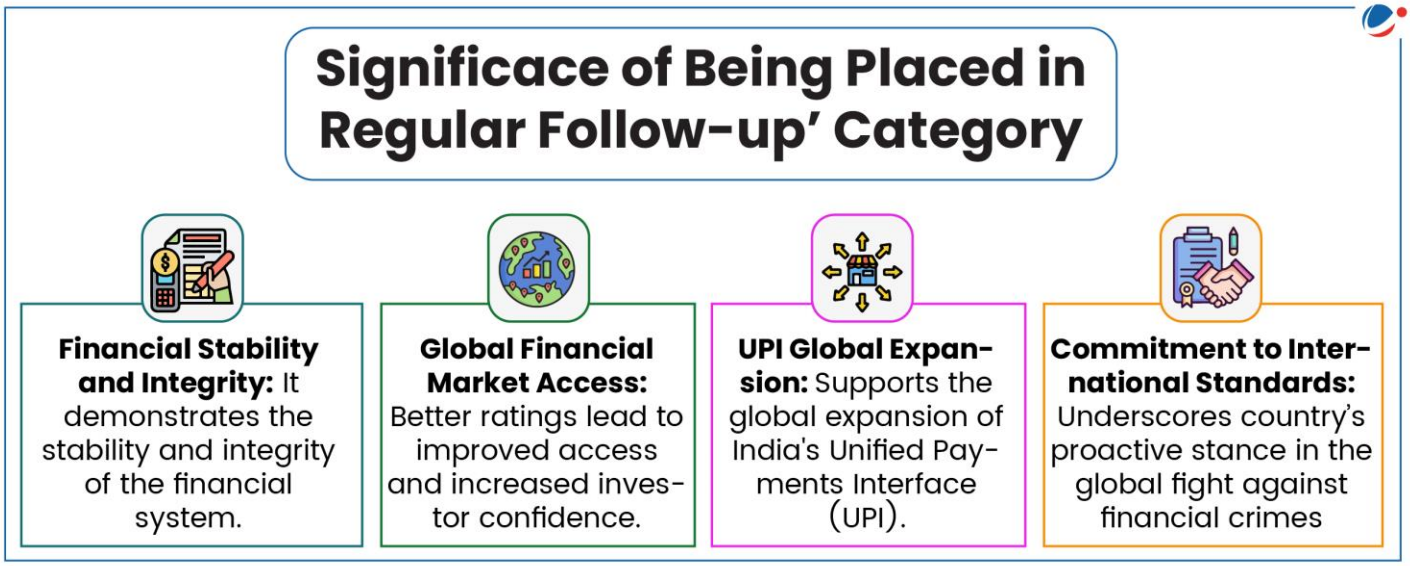
The Financial Action Task Force (FATF) plenary held in Singapore adopted 'Mutual Evaluation Report (MER) of India'.

More on News

- 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 and **stringent regulations on cash transactions** which have **significantly increased financial inclusion and digital transactions**, making transactions more traceable.

What is MER 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.**
- **MER has two main components:**
    - **Effectiveness rating**
    - **Technical Compliance assessment**
- **Categorization of countries in MER**
    - **Regular follow-up:** The **top most category**.
        - ✓ **Only 24** including **India, UK, Italy, France, and Russia** (members of G20) are in this category.
    - **Enhanced follow-up:** These are **countries with significant deficiencies**.
        - ✓ Includes 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.



Financial Action Task Force (FATF)

- **Genesis:** It was established in 1989, by a Group of Seven (G-7) Summit held in Paris.
- **Membership:** 38 member countries including Russia whose membership is currently suspended **(India is a member since 2010).**
- **FATF Style Regional Bodies:** These are **9 regional bodies** established for the purpose of **disseminating the International standards** on combating money laundering, financing of terrorism, & proliferation.
- **Key Role:**
  - **Integrity of the international financial system**: It is international watchdog to c**ombat money laundering, terrorist financing, and other related threats** to international financial system
    - ✓ It sets **the standards** for countries and regulated entities (both financial and non-financial).
  - **Financial inclusion:** Supporting financial inclusion became a priority for the FATF in the late 2000s.
    - ✓ **Bringing more people into the formal financial system** where transactions can be more easily monitored.
    - ✓ FATF has also launched **'project on unintended consequences'** which includes a focus on financial exclusion.
- **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):** Countries that are actively working with the FATF to address strategic deficiencies in their regimes.
    - ✓ These are countries that have **committed to resolve the identified strategic deficiencies within agreed timeframes** and are subject to increased monitoring.
  - **Black List (High-Risk Jurisdictions subject to a Call for Action):** Countries or jurisdictions with **serious strategic deficiencies**.
    - ✓ For such countries, the FATF calls on all members and urges all jurisdictions to **apply enhanced due diligence, and in the most serious cases,** countries are called upon to **apply counter-measures to protect the international financial system.**

What makes functioning of FATF less effective?

- **Perceived lack of objectivity:** FATF makes decisions by consensus, and **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**: There is no recognition of difference between jurisdictions in the grey list that lack the necessary technical or administrative capacity to FATF recommendations and jurisdictions that may have the capacity but would be unwilling in intent.
  - 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:** FATF relies upon assurances without actually considering actual performance. For example, Pakistan was removed from its grey list as it implemented FATF recommendations in technical terms.
    - However, there still exist lack of action against terrorism and terrorist financing emanating from territories under its control.
- **Marginalisation of Global South voices:** For many countries in the Global South, it is challenging to justify putting sufficient resources into the fight against money laundering.
    - As a result many countries in Africa, for example, appear to be regularly placed on and off the grey list.
- **Emerging source of terror financing:** The rise of cryptocurrencies and other virtual assets have provided terrorists with new avenues to move funds anonymously and internationally.

Way forward for making FATF more effective

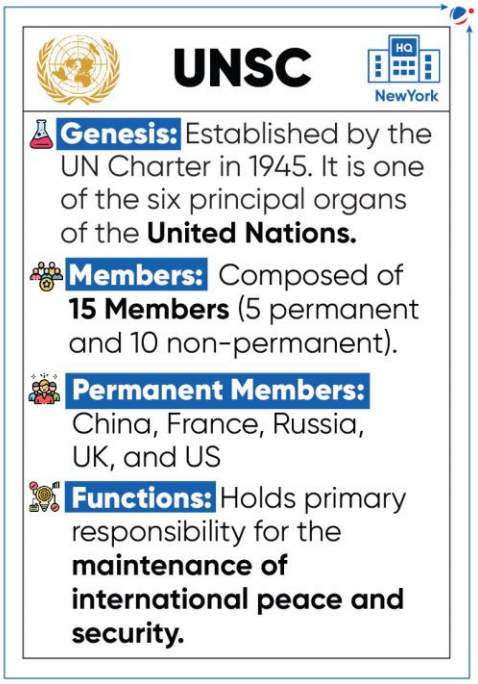
- **Categorisation within grey list**: Categorisation of countries in grey list based on their willingness to compliance can ensure effective tackling of terror financing and money laundering.
- **Enhance transparency in functioning:** This can be done by formalizing the appointment at various positions and staff within the secretariat through a transparent and an open competitive system.
    - Further, steps should be taken to ensure job security and independence of the secretariat.
- **Tailored response to need of poor countries**: Countries in need should be provided with special assistance for strengthening their legal, regulatory, institutional, and financial supervisory frameworks.
- **Global cooperation:** Close cooperation and coordination with other key international organizations, including IMF, World Bank, UN, and FATF-style regional bodies can help FATF to meet its objectives.
- **Capacity building:** FATF should continuously strengthen its standards to address new risks, such as the regulation of virtual assets, which have spread as cryptocurrencies gain popularity.

4.7. NEWS IN SHORTS

4.7.1. UNITED NATIONS SECURITY COUNCIL (UNSC)

United Nations General Assembly (UNGA) elected **Denmark, Greece, Pakistan, Panama, and Somalia to UNSC.**

- Each year UNGA **elects five non-permanent members** (out of 10 in total) of UNSC for a two-year term **through a secret ballot.**



4.7.2. MULTILATERAL PEACE OPERATIONS

SIPRI published a topical backgrounder titled '**Multilateral peace operations in 2023: Developments and trends**' on important developments related to multilateral peace operations during 2023.

Key Findings on multilateral peace operations

- **Largest numbers of multilateral peace operations** (20) were conducted by the **United Nations**.
- India was the **highest contributor of military personnel for UN peacekeeping forces** in 2023.
- In 2023, **63 multilateral peace operations** were active in **37 countries**.
- **Largest deployment** of peacekeeping forces was in **Sub-Saharan Africa**.

4.7.3. PROJECT 28

INS Kiltan, one of Project 28 (P28) Anti-Submarine Warfare (ASW) Corvettes, visited Brunei as part of operational deployment.

About P28

- It was aimed at building **4 indigenous ASW corvettes or Kamorta class ships**.
- **Features of ASW corvettes:**
  - Equipped with **anti-aircraft guns, torpedo launcher** and early warning, fire control radars etc.
  - Can be deployed in **nuclear, biological and chemical warfare conditions**.
  - Utilized indigenously developed **special high strength warship grade steel type DMR 249A**.
- **Designed by:** Indian Navy's Directorate of Naval Design.
- **Built by:** Garden Reach Shipbuilders & Engineers (GRSE) in Kolkata.
- **Ships:** INS Kamorta, INS Kadmatt, INS Kiltan and INS Kavaratti.

4.7.4. NAGASTRA-1

Indian Army received First indigenous Loitering Munition **suicide drones Nagastra-1.**

About Nagastra-1

- Developed by **Solar Industries' Economics Explosives Ltd (EEL)** Nagpur.
- Can **neutralize hostile threats in 'kamikaze mode'** with **GPS-enabled precision strikes** with an accuracy of up to **2 metres.**
  - **Kamikaze** refers to members of a **Japanese air attack corps in World War II** assigned to make a suicidal crash on a target (such as a ship)
  - However, **Nagastra-1** is capable of carrying out **precision strikes on enemy camps without endangering the lives of soldiers.**
- Equipped with **day-and-night surveillance cameras.**
- Carries a 1 **kg high-explosive fragmenting warhead.**
- Unique features include **abort, recover and reuse, facilitated** by a parachute recovery mechanism.

4.7.5. RUDRAM-II

RudraM-II missile was successfully flight-tested from Su-30 MK-I.

About About RudraM-II

- Indigenously **developed solid-propelled** air-launched missile, designed for air-to-surface operations.
- Developed by the **Defence Research and Development Organisation (DRDO)**.
- In 2020, RudraM, a new-generation **anti-radiation missiles (NGARMs)** was successfully tested.
  - It is first indigenous ARM of Indian Air Force.
  - It is equipped with the **Inertial Navigation System (INS)**-Global Positioning System (GPS) navigation system and **Passive Homing Head (PHH)**.
  - **PHH** can detect, classify and engage targets over a wide band of frequencies as programmed.

4.7.6. MICROWAVE OBSCURANT CHAFF ROCKET (MOCR)

DRDO handed over the **Medium Range-Microwave Obscurant Chaff Rocket (MR-MOCR)** to the Indian Navy.

MR-MOCR

- **Developed by: DRDO's Defence Laboratory in Jodhpur.**
- **Purpose: Obscure radar signals** reduce detection.
- **Specification**:
  - **Chaff** is a passive **electronic countermeasure** consisting of electrically conducting fine fiber of resonant length to act as a **microwave dipole**.
- **Working mechanism:** The rocket, when fired, **forms a microwave obscurant cloud in space**, thus creating an effective **shield against hostile threats having Radio Frequency seekers.**

4.7.7. JAVELIN ANTI-TANK WEAPON SYSTEM

India and the US held discussions on the co-production of American javelin missiles in India, as per reports.

About Javelin anti-tank Weapon System

- World's premier **single man-portable medium-range anti-tank weapon system**.
- **Missile automatically guides** itself to the target after launch **(fire-and-forget principle),** this allows the **gunner** to take **cover** and avoid counter fire.
- Can be safely **fired from inside buildings** or bunkers.

4.7.8. EXERCISES IN NEWS

- **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:** Exercise HOPEX is a joint military exercise between **Indian Air Force (IAF) and Egyptian Air Force**.
  - **Aim** – to promote bilateral and regional cooperation.
  - IAF's Rafale fighter jets, C-17 Globemaster and IL-78 tankers are participating in the exercise.
  - **Location – Egypt.**



5. ENVIRONMENT

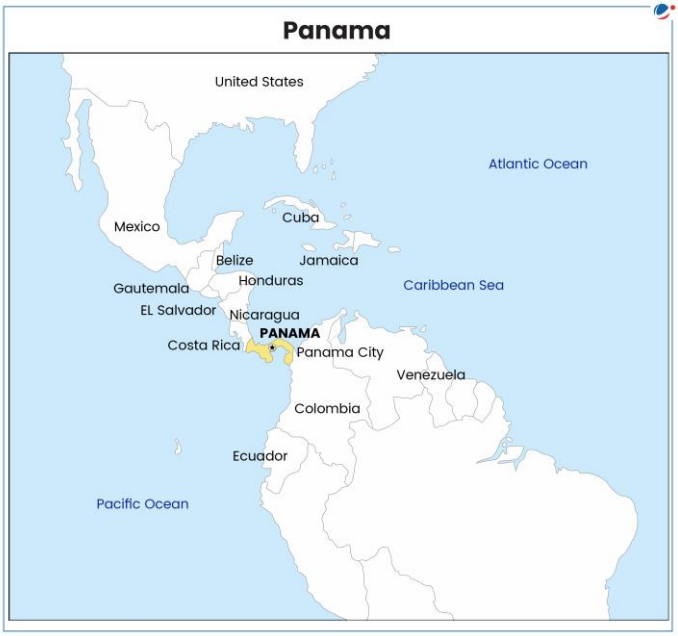
5.1. SMALL ISLAND DEVELOPING STATES (SIDS) AND CLIMATE CHANGE

Why in news?

Panama became first nation to **evacuate** island community over climate impact.

More about News

- About 300 indigenous Guna families are being relocated from the **Gardi Sugdub island to the mainland Panama** due to concerns over rising sea levels.
- Many of such **small island developing states (SIDS)** are **facing existential threats due to rising oceans.**



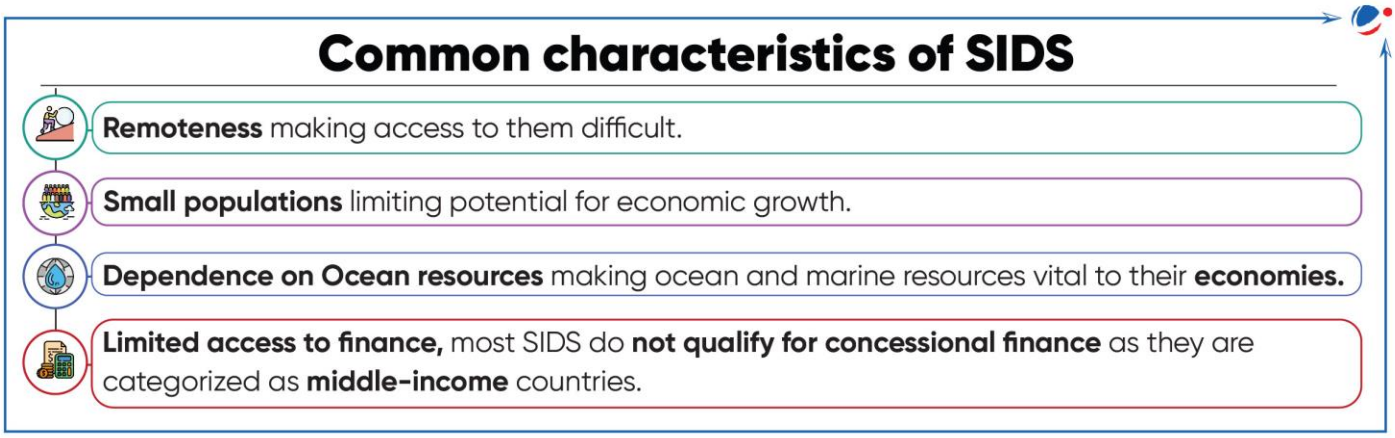
Related News

Coalition for Disaster Resilient Infrastructure (CDRI): Infrastructure for Resilient Island States (IRIS) Programme

- Recently, **CDRI** announced **$8 Million funding** through its **IRIS Programme** to support disaster resilient infrastructure in SIDS.
  - Announced at the **United Nations 4th International Conference on SIDS, in Antigua and Barbuda**
- **IRIS programme** has won the **2024 UN SIDS Partnership Award** for its contributions to the sustainable development of SIDS through innovative and impactful partnerships.
- **About IRIS Programme:**
  - **Members: CDRI** with members **Australia, the European Union, India, the United Kingdom** and SIDS representatives
  - Launched at **COP26** during the **World Leaders Summit.**
- **Infrastructure Resilience Accelerator Fund (IRAF)** (**2022**): A **US$50 Million Trust Fund** to support global action on Disaster Resilience of Infrastructure Systems.
  - Established with the support of **UNDP and UNDRR**, with special focus on **developing** countries and **SIDS**.
  - **IRAF supports the IRIS Programme**.
- **CDRI was launched by the Indian PM** during the United Nations Climate Action Summit in 2019.
  - **Secretariat**: New Delhi, India
  - **Objective**: To promote the resilience of infrastructure systems to respond to climate and disaster risks, thereby ensuring sustainable development.

About Small Island Developing States (SIDS)

- SIDS are a group of small island countries and territories that **share similar sustainable development challenges** and face similar social, economic and environmental **vulnerabilities**.
  - **Not all SIDS are islands**. Belize, Guyana and Suriname are also included because of their common characteristics.
  - **Ex of SIDS**: Maldives, Seychelles, Marshall Islands, Solomon Islands, Suriname, Mauritius, Papua New Guinea, Vanuatu, Guyana, Singapore etc.
- The three geographical regions in which SIDS are located are: the **Caribbean, the Pacific, and the Atlantic, Indian Ocean and South China Sea (AIS).**
- SIDS were recognized as a **special case both for their environment and development** at the 1992 United Nations Conference on Environment and Development.



How is climate change affecting SIDS?

Despite their **minimal historical greenhouse gas emissions**, SIDS face some of the **most severe impacts** of climate change in form of **loss and damage** due to Extreme weather events, Sea level rise, Ocean Acidification, High temperatures, Climate variability etc.

- **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**: Fear of loss of connection to cultural roots, traditional livelihood and way of living.
- **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 access to economic prowess and technological advances** to tackle climate change.
  - Despite being disproportionately affected by climate change, they had access to a mere US$1.5 billion out of the US$100 billion pledged in 2019.
  - The aggregate population of all SIDS, living across more than 1,000 islands, is **less than 1% of the world's population**.
- **Adverse impact on health**: Due to **heat waves** and increased outbreaks of **vector-borne diseases.**
- **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.
- **Agriculture and food security**: Affected by heat stress, changes in soil moisture and evapotranspiration, and changes in extreme weather events, such as tropical cyclones, floods and droughts.

Way forward

- **Enhancing adaptive capacities**: **Integration** of appropriate **risk reduction strategies** with other **sectoral policy initiatives** in areas such as sustainable development planning, disaster prevention and management, integrated coastal management, and health care planning.
- **Improve data collection and technical capacity** through climate **change impact and vulnerability assessments** for efficient designing and planning of adaptation policies and strategies.
- **International Financing**: Due to **high costs** of adaptation and mitigation, international **assistance** is vital for **research** into traditional, natural and innovative forms of adaptation.
  - **Bridgetown Initiative (2022)**: To address the immediate needs of countries facing debt distress, proposes a SDG Stimulus package to invest in SDGs, while stressing the need for reform of the international financial architecture.

- **Nature-based solutions**: Tapping traditional knowledge and innovations for using natural resources and processes to reduce impact of climate change.
  - **E.g**. Blue Carbon projects, restoring degraded ecosystems etc.
- **Promote renewable energy**: Increased use of **wind, solar and geothermal** power as well as **ocean thermal and tidal** energy conversion to reduce reliance on fossil fuels.
  - E.g. **SIDS Lighthouses Initiative**- target of 10GW renewable energy installed capacity in all SIDS by 2030.

Global measures

- **The Alliance of Small Island States (AOSIS)**: It is an intergovernmental organization which plays an **integral role in carrying out advocacy for small island states** and influencing international environmental policy.
- **Global Conference on the Sustainable Development of Small Island Developing States (1994) (Barbados Programme of Action)**: Addresses particular vulnerability of SIDS to climate change, climate variability and sea-level rise featured prominently.
- **UNDP initiatives**
  - **Climate Promise Initiative**: helping SIDS to prepare enhanced Nationally Determined Contributions (NDCs).
  - **Progressive Platforms Initiative** empowers SIDS by building diplomatic, legal and technical capacity for improved climate negotiations.
- **Small Island Developing States Accelerated Modalities of Action (SAMOA) Pathway**: It aims to address the unique challenges faced by SIDS and to support their development
- **2023 UN Resolution on climate justice:** Aims to secure a legal opinion from the international court of justice (ICJ) on the **"Obligations of States in respect of Climate Change".**
- **International Tribunal for the Law of the Sea (ITLOS) advisory opinion** concerning the specific **obligations** of the Parties to the UNCLOS on **climate change mitigation**.

5.2. INDIAN HIMALAYAN REGION (IHR)

Why in the News?

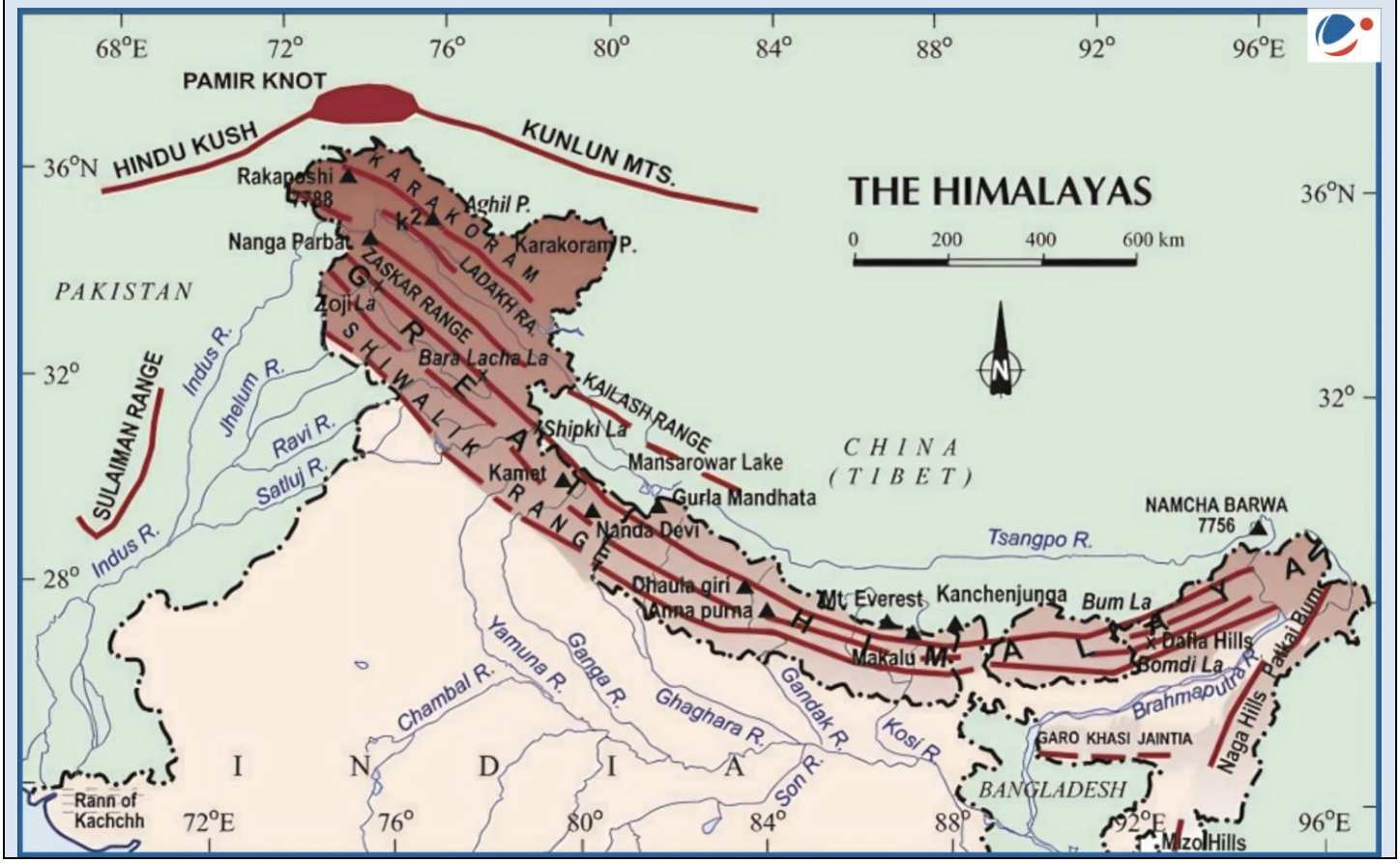
In view of some of the recent judgments of the Supreme Court, the new fundamental right to be free from climate change impact necessitates a sustainable development model for the **Indian Himalayan Region (IHR).**

More on the News

- **In MK Ranjitsinh vs. Union of India case (2024),** Supreme Court recognized the right to be free from the adverse effects of climate change under Articles 14 and 21 of the Indian Constitution.
- **In Ashok Kumar Raghav vs Union of India case (2023),** Supreme Court asked the central government and the petitioner to suggest a way forward so as to enable the Court to pass directions on the **carrying capacity** of the Himalayan States and towns for sustainable development.
  - **Carrying capacity** is the maximum population size that an ecosystem can sustain without getting degraded.
- In **State of Telangana vs Mohd. Abdul Qasim case,** the Court had said that the need of the hour is to adopt an ecocentric view of the environment (where nature is at the core).
  - Aspirations for growth and development in the Indian Himalayan Region need to be aligned with science and the rights of people and nature.

About Indian Himalayan Region (IHR)

- Himalayas are **young fold mountains that are tectonically active** and formed as a result of **massive collision between Eurasia and the northward-drifting Indian plate** about 50 million years ago.
- IHR is spread across **13 Indian States/Union Territories** stretching across **2500 km.**
- It occupies **18% of the India's total geographical area** and **50%** of the country's forest cover and biodiversity.
  - It is **biodiversity hotspot** for several plant and animal species.



Importance of IHR

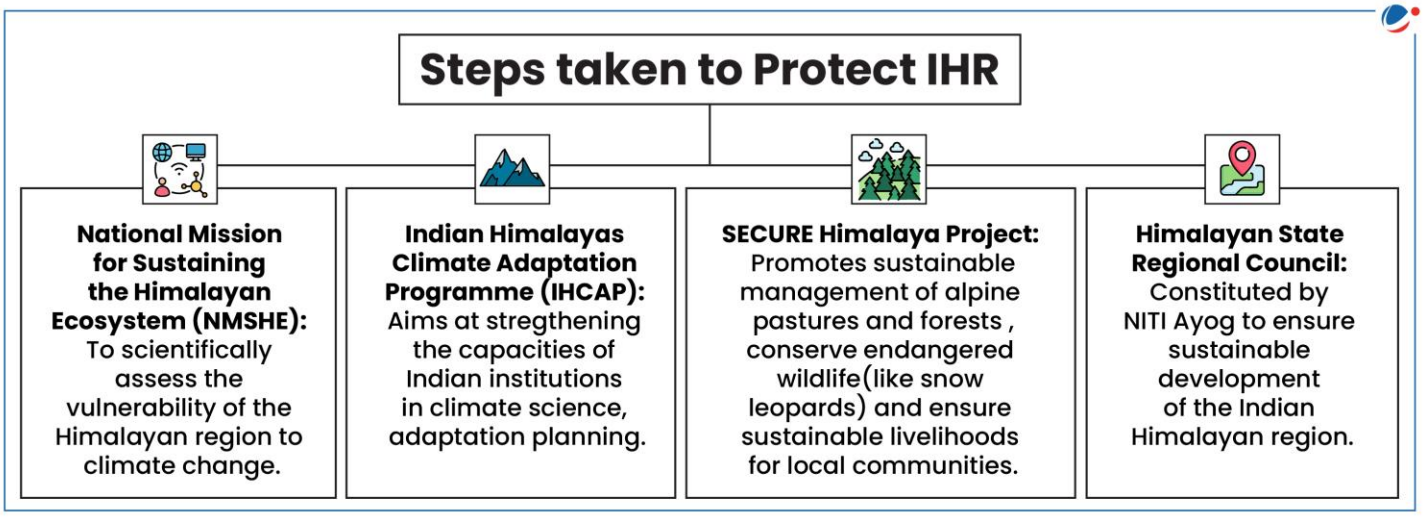
- **Drainage and Water Resources:** The region is known as a 'water tower of the earth'.
  - The glaciers in the Himalaya feed **majority of rivers** (like Ganga, Yamuna, Indus, and Brahmaputra) supporting livelihood for **about 1.4 billion people** whose very survival depends on glacial fed rivers.
- **Ecosystem Services:** It is the source of many ecosystem goods, such as food, medicine and genetic resources, and services like Carbon Sequestration, water regulation etc.
- **Regulating the climate:** By preventing frigid, dry arctic winds blowing south into the subcontinent**.**
  - It also forms a **barrier for the monsoon winds,** keeping them from traveling northwards, and causing rainfall in the south of the Himalaya.
- **Tourism:** The high-altitude lakes, mountain peaks and sacred natural sites attract tourists and have a vast potential of **eco-tourism**, **adventure tourism** and **religious tourism** (like Amarnath, Badrinath etc).

Challenges associated with IHR

- **Unsustainable development:** Deforestation due to agriculture, obstruction of natural flow of water due to construction of various mega **hydel Power Projects** (like Tehri Dam), **mining and blasting of mountains** (for e.g., Char Dham Project) etc. increased incidents of disaster.
  - **For e.g.**, in 2023, Sinking of Joshimath in Uttarakhand, floods and landslides in Himachal Pradesh, a glacial lake outburst in Sikkim, Silkyara-Barkot tunnel in Uttarkashi etc.
- **Rising Tourism:** IHR records about **100 million tourists every year** and the number are **expected to increase to 240 million by 2025**, putting huge pressure on resources.

- As per NITI Aayog, Tourism **contributes more than 10% of the Gross State Domestic Product (GSDP) in many states** such as Uttarakhand, West Bengal, Tripura, Assam, etc.

- **Impact of Climate Change**: ISRO satellite imagery has revealed that glaciers across the Indian Himalayan region have been **melting at alarming rates,** leading to the significant expansion of glacial lakes.
  - This increases the threat of glacial lake outburst floods multifold.
- **Water Crisis:** According to estimates, out of **4 million** springs in the Himalayas, at least **33%** are drying up and more than **50%** have witnessed decline in water discharge.
  - **For e.g.,** The water problems of **Shimla** and other hill towns in India are a direct result of **drying of spring.**
- **Flaw in Environment Clearance System:** Despite all levels of government being acutely aware of the special needs of the IHR, the region's vulnerabilities and fragility **have not been considered separately.**



Way-forward

- **Integrated development:** Establish a **"Himalayan Authority"** to coordinate integrated and holistic development of the Himalayan States, ensure synergy, provide strategic guidance, and monitoring SDGs fulfillment.
- **Sustainable Tourism:** Need Business plans for **"Smart Mountain Tourism Destinations"** on the lines of Smart Cities, introduce **'Green Cess'** (Payment for Environmental Services) based on eco-certification, etc.
- **Improve Water Security:** Building on best practices, (**e.g., Dhara Vikas in Sikkim** and others) for revival of springs where water quantity and quality has deteriorated.
- **Capacity building:** Research needs to be strengthened is in **blending** traditional knowledge on resource use and management with **modern scientific approaches.**
- **Improve Clearance System:** Indian Himalayan Region **needs its own** Environment Impact Assessment (EIA).
  - EIA is a **tool** to identify the environmental, social, and economic impacts of a project before it is implemented.

To know more about the Unregulated Tourism in the Himalayan Region, refer to Article 3 5.2. Unregulated Tourism In The Indian Himalayan Region (IHR) in August 2023 Monthly Current Affairs Magazine.

5.3. GREAT NICOBAR ISLAND

Why in the News?

NITI Ayog prepared a Draft Report on Social Impact Assessment (SIA) Study for Greenfield International Airport – Great Nicobar.

More about the News

- It is a part of proposed "Holistic Development of Great Nicobar Island (GNI) in Andaman and Nicobar Islands" project.
- **Key-findings of the report**
  - **Positive Impact**
    - ✓ Increase in economic, employment and business opportunities.
    - ✓ Land value will increase once the area gets developed.

- **Negative Impact**
  - ✓ Loss of productive land for agriculture and own land for dwelling units.
  - ✓ More influx of outside population and loss of privacy.

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:** It is located in the 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**.**
  - **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.**
- **Socio-Economics Characteristics:**
  - **Important Tribes:** Mongoloid (Shompen, Nicobarese).
  - **The settlers and mainlanders**, which number over 8 000, live along the southeast coast of the island, practising agriculture, horticulture and fishing.

About the "Holistic Development of Great Nicobar Island (GNI) in Andaman and Nicobar(A&N) Islands" Project

- The project is proposed by **A & N Administration** under the guidance of Govt. of India and NITI Aayog.
- The project was 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**).
- As a part of Integrated Development, **the following projects are proposed:**

International Container Transshipment Terminal (ICTT)	• **Location:** At Galathea Bay on the International Trade Route, in proximity with existing transhipment terminals like Singapore, Klang and Colombo. • **Natural depth** of 20m. • **Proposed Handling Capacity:** 14.2 million Twenty-foot Equivalent Unit (TEU).
Green Field International Airport	• **Location:** Shastri Nagar and Gandhi Nagar villages of Campbell Bay taluk of Nicobar district. • **Handling capacity**: 4000 Passengers in Peak Hour
Township and Area Development	• The broad category of land uses proposed in the concept master plan are **Residential, Commercial Mixed use, Institutional, eco-tourism, coastal tourism, logistics etc**.
Power Plant	• It is crucial, since GNI gets most of its electricity from **diesel generators.** • **Aim** is to provide good quality, reliable electrical energy without interruptions.

	• **Broad Power Demand**:450 Mega Volt Ampere (MVA) ○ Additional **45 MVA** from solar power will be included in total power generation. • **Power Generation Resources:** Diesel Generating power plant, Gas Power Plant, Solar Power plant.

Need for Project and Its Importance

- **Strategic Location:** Indira Point is about 25-40 km from the major **international sea route** which carries about **20-25% of global sea trade** and **35% of world oil supplies.**
  - This strategic location presents immense opportunities to further strengthen India's trading position in the world by **developing an ICTT.**
  - Currently, nearly **75%** of India's transhipped cargo is handled at ports outside India. Colombo, Singapore and Klang handle more than **85% of this cargo.**
- **Counter foreign power consolidation:** As with respect to military expansion and port creation, foreign powers have increased its activities in the **Indian Ocean Region (IOR)**. For instance, China's String of Pearls to encircle India.
- **Improving Connectivity:** At present there is very **limited connectivity** of the GNI with the Indian mainland and other global cities. The prime modes of travel are **shipping and helicopter.**
  - Thus, need for setting up of a **large Greenfield airport** with a much greater capacity than the existing one (INS Baaz Indian Naval Air Station).
- **Promoting sustainable tourism:** To attract high-end tourists interested in tropical forests, adventure tourism, beach tourism, water sports as scuba diving etc.
  - The **Green Airport Project** will put A&N on the global tourist destinations map due to proximity with upcoming Senang City, the Phuket Island and Langkawi Island etc.

Concerns related to the project

- **Environmental concerns:**
  - Loss of top soil in the construction areas.
  - Sewage waste generation at power plant site pollute the adjacent water bodies,
  - Mangroves on the eastern flank will be affected due to port construction.
  - Artificial illumination on the beach can affect the sea turtle nesting and hatchlings.
- **Threat to fauna:** ICTT which is expected to be developed at Galathea Bay, one of the world's largest nesting sites for the **leatherback turtle.**
  - Both the leatherback turtle and the Nicobar megapode, species listed under Schedule I of the Wildlife (Protection) Act, 1972, face critical threats from this development.
- **Social:** In 2022, the Tribal Council of Great Nicobar and Little Nicobar withdrawn its **No-Objection certificate (NOC)** for the project due to the administration's lack of transparency and the hasty consent process from tribal communities.
  - A portion of the land identified as "uninhabited" in the NITI Aayog plan is ancestral territory for the **Great Nicobarese people.**
- **Health:** The **Shompen,** who have had limited contact with the outside world, remain highly vulnerable to **infectious diseases**.
  - The proposed transshipment terminal overlaps with Shompen community areas, posing risks to their health and survival.
- **Natural Disaster Vulnerability:** A&N are situated in a **high-risk seismic zone,** raising fears that the development could lead to catastrophic environmental consequences.

Way forward

Mitigation Measures Suggested in Environmental Impact Assessment (EIA) report:

- The planning will be in accordance with landscape planning concepts to **75ecogniz major landscape changes.**
- **During the breading seasons of leather back turtles** i.e. between November to February construction activities on the offshore to be **halted.**
- **Sodium vapor lights** should be used for lightings, as sea turtles are less affected by it.
- Implement Integrated **Solid waste management system** has been planned in GNI development
- Strict measures will be adopted 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.

5.4. UNDERGROUND COAL GASIFICATION (UCG)

Why in the News?

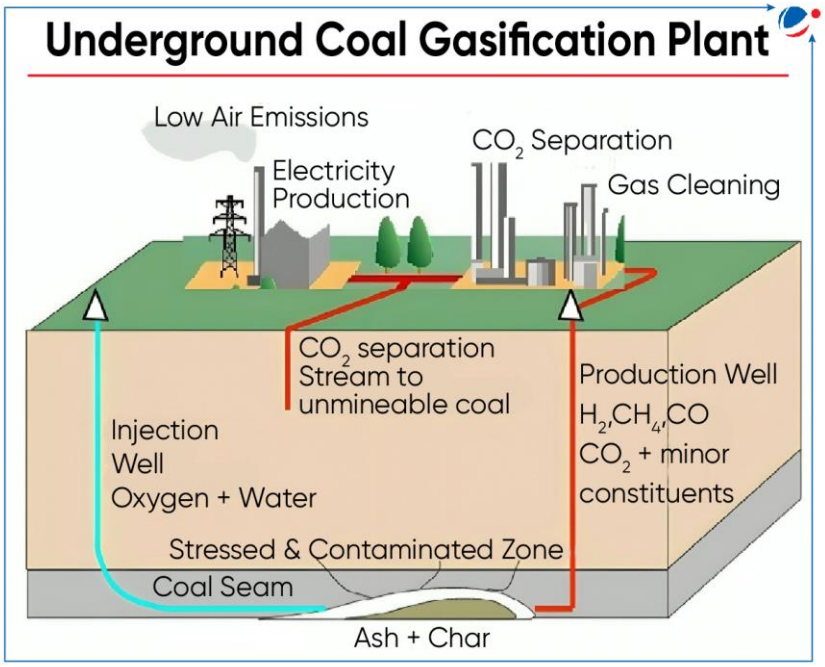
Ministry of Coal has launched a pioneering Underground Coal Gasification pilot project in Jharkhand's Jamtara District.

More about News

- In 2015, a dedicated **policy framework for development of UCG in coal and lignite bearing areas** in India was approved by Ministry of Coal.
  - In alignment with this policy, Coal India selected the Kasta coal block of Jamtara District to implement UCG technology tailored to Indian geo-mining conditions.

Underground coal gasification (UCG)

- UCG is an energy manufacturing process whereby coal is gasified or chemically converted into a synthesis gas (syngas) in its original coal seam.
  - UCG gas is **similar to surface coal gasification gas**, typically a mixture of methane (CH4), carbon dioxide (CO2), hydrogen (H2) and carbon monoxide (CO).
- UCG is the **in-situ combustion** of the coal seam to produce usable gas.
  - The process is initiated by **injecting steam and air/oxygen** into the seam and igniting it, requiring temperatures over **1000°C**.
  - The resulting products vary based on coal type, temperature, pressure, and whether air or oxygen is used for combustion.



Products of UCG

- **Electricity:** The hot syngas from UCG can be used to make steam to drive a steam turbine that generates electricity or it can be combusted to produce steam to drive an electric turbine.
- **Chemical Feedstock:** Syngas can be used as chemical feedstock (after its H2 to CO ratio is suitably balanced) to produce methanol, hydrogen, ammonia and other chemical products.
- **Production of Hydrogen:** Coal is the obvious source for hydrogen which is potentially an important near zero carbon energy carrier of the future.
  - UCG as a hydrogen generator coupled with a solid oxide fuel cell (SOFC) to generate electrical power directly has been studied by Indian experts.

Benefits of UCG

- **Access to unmineable coal:** UCG opens up the prospect of accessing trillions of tonnes of otherwise unmineable coal.
- **Reduced capital expenditure:** In a UCG commercial development, several expensive process units and components that are needed in a coal mining and surface gasification complex are eliminated, including coal mining, transportation, storage etc.
- **Energy Density**: Compared to typical coal bed methane extraction, UCG needs less than 3% of the land area needed for CBM to produce the same amount of gas energy.

- **Other benefits**
  - Reduce dependence on imports
  - No environmental impacts traditionally associated with coal mining and handling
  - UCG has unique potential in recovering heating value from high ash coal.

Government Initiatives for Coal Gasification

- **National Coal Gasification Mission:** Aims to achieve coal gasification and liquefaction of 100 MT of coal by 2030.
- **Scheme for promotion of Coal/Lignite Gasification:** A financial assistance scheme to promote Coal/Lignite Gasification Projects by Government PSUs and the Private Sector, with an allocation of ₹ 8500 crores for incentives towards coal gasification projects.
- **Joint venture agreement (JVA):** Government promoting project using coal gasification through JVA such as CIL and BHEL for setting up an ammonium nitrate plant through coal gasification (SCG).

Concerns associated with UCG

- **Induced Subsidence:** The void created by UCG may cause significant deformation both in the remaining coal and surrounding rocks.
- **Contamination of Groundwater:** During UCG various chemicals form in the coal seam including phenols, benzene, carbon dioxide, etc. There's a risk these substances could migrate beyond the gasification area and potentially contaminate nearby groundwater sources**.**
- **Lack of proven Technology:** Lack of technology for conversion of India's coal to syngas.
  - High technology cost affects Syngas & downstream products costs & Project viability.
- **Unsteady-state process:** UCG is inherently an unsteady process since a number of parameters, such as the growth of the cavity, inherent variation in the properties of the coal along the seam, quantity of water influx, ash layer build-up, affect the rates of the homogeneous and heterogeneous reactions occurring therein.

Conclusion

Underground Coal gasification offers vast potential to transform coal into valuable products. The government's schemes and incentives aim to attract public and private sector investments, fostering innovation and sustainable development of the coal sector in India.

5.5. OFFSHORE WIND ENERGY

Why in news?

Cabinet recently approved **Viability Gap Funding (VGF) scheme for implementation of Offshore Wind Energy Projects**.

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**.
- **Significance**:
  - Help in 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**.

About Viability Gap Funding

- **Viability Gap Funding (VGF)** aims at supporting infrastructure projects that are **economically justified but fall marginally short of financial viability**.
- Cabinet Committee on Economic Affairs (CCEA) in **2005** approved the **Viability Gap Funding (VGF) Scheme (Scheme for Financial Support to PPPs in Infrastructure)** as a **Central Sector Scheme**.
- The scheme is **administered by** the **Department of Economic Affairs, Ministry of Finance**
- Support under this scheme is available **only** for infrastructure **projects** where **private** sector **sponsors** are selected through a process of **competitive bidding**.

About Offshore Wind Energy

- **Offshore wind power** 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 has a **coastline of about 7600 km**, surrounded by water on three sides and has good prospects of harnessing offshore wind energy.
    - India's **gross wind power potential** of **695.50 GW** at 120 meter and **1163.9 GW** at 150 meter above ground level.



Comparison of Offshore and Onshore wind energy projects

Offshore Wind Energy Projects	Onshore Wind Energy Projects
Offshore wind power refers to wind farms built on shallow bodies of **water**, usually in the **ocean**.	Onshore wind power refers to wind turbines constructed and situated on **land**.
Pros: • **Generates more energy**: Offshore turbines generate 1MW more energy than onshore turbines **due to larger turbines**. • **Efficiency**: winds at sea are **stronger** and blow in the **same direction more often** than winds on land. • **Less intrusive**: have **fewer environmental impacts** as they don't affect how towns use their land or create noise pollution. • **Land acquisition issue is absent**.	**Pros**: • **Cost-effective**: cheaper compared to offshore with **lower infrastructure and maintenance costs**. • **Quicker** and cheaper installation • Boosts local economy due to land utilization. • **Lower transmission losses**: There is **less voltage drop** between the wind turbine and the consumer due to less distance. • Proven **technology** and **reduced wear and tear** (low erosion due to less moisture)
Cons: • Lack **dependency and predictability**. • **Transmission and distribution process** is tedious, time-taking and needs more infrastructure. • **High maintenance costs** due to **corrosive** effect of moisture of seawater and wear and tear from **waves**.	**Cons**: • Can cause **discomfort to locals** due to noise pollution. • **Reduced efficiency** due to unpredictable **wind speeds and direction**. • **Land availability and landscape** considerations limit onshore wind farms.

Way Forward

- **Wind Resource Assessment**: Wind being an intermittent and site-specific resource of energy, extensive WRA is essential for the selection of potential sites.
- **Maritime Spatial Planning** with expert opinion and demonstration projects can help ensuring the viability of projects.
- **Feed-in tariff (FiT):** FiT is a price-driven policy for promoting RE expansion where the government offers a guaranteed purchasing price for electricity produced from RE sources for fixed periods of time.
    - Discoms can adopt FiT regulations and make offshore wind power procurement mandatory.

Government Initiatives

- **"National Offshore Wind Energy Policy – 2015"**: The policy provides for 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 for the development of Offshore Wind Energy in India.
- **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.

Other related renewable energy mechanisms

- **Wind-Solar Hybrid Policy:** Promotion of extensive grid-connected wind-solar PV hybrid systems for efficiently utilization of transmission infrastructure and land.

- Addresses the **intermittency challenge** of one renewable source, achieving **better grid stability through hybridization.**
- **Ocean Energy**: India is estimated to have a potential of around **54 GW** of ocean energy.
- **Tidal energy**: energy produced from the movement of ocean tides.
  - Estimated **potential** in India: **12.5 GW**
- **Ocean Thermal Energy Conversion (OTEC)** is a technology for generating renewable energy that uses the **temperature differential** between the **deep cold and relatively warmer surface waters of the ocean** to generate baseload electricity.
- **Other technologies**: Ocean Salt Gradient Energy, Ocean Wave Energy and Ocean Current Energy

5.6. NEWS IN SHORTS

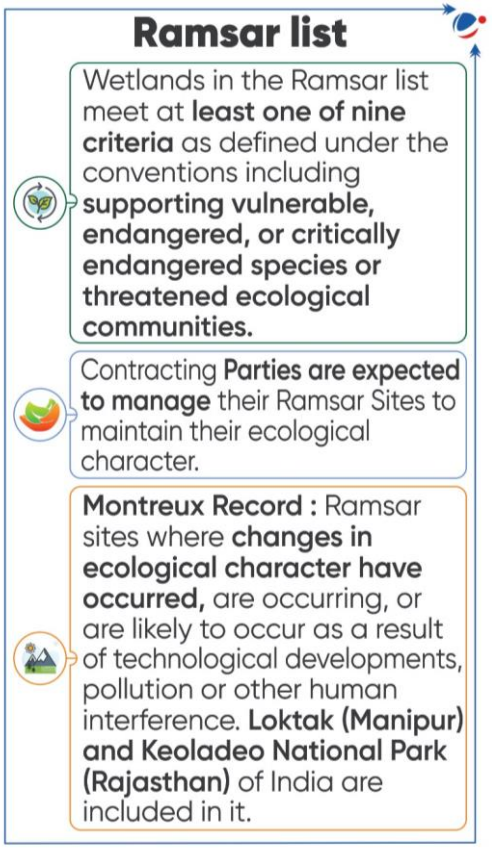
5.6.1. NEW RAMSAR SITES

Nagi and Nakti bird sanctuaries, both located in Bihar's Jamui district, are now eecognized under the Ramsar Convention taking total Ramsar sites in India to **82.**

- Both sanctuaries 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.

Ramsar Convention

- An **intergovernmental treaty** for the **conservation and wise use of wetlands** and their resources.
- Adopted at **Ramsar (Irani) in 1971** and came into force in **1975.**
- India became a party in **1982** (Maximum Ramsar sites are in **Tamil Nadu** followed by **Uttar Pradesh).**
- **'List of wetlands of international importance'** or the **Ramsar List** contains wetlands which hold **significant value for humanity as a whole.**



5.6.2. BONN CLIMATE CHANGE CONFERENCE CONCLUDED

During Conference, progress was made toward **adaptation indicators** and better functioning **international carbon market under Article 6 of the Paris Climate Deal.**

- 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.

New Collective Quantified Goal

- It was 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** which was 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** while addressing key shortcomings in current climate financing mechanism.

Mitigation Work Programme

- It was 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).

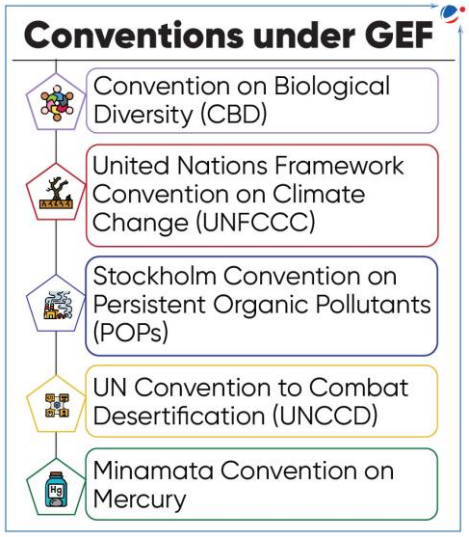
5.6.3. 67TH GLOBAL ENVIRONMENT FACILITY (GEF) COUNCIL MEETING

67th GEF Council approved $736.4 million funding.

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

- 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 aims to catalyze urban system transformation.
- Also includes 2 **Indian Projects**-
  - Enhancing the 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 the population of migratory species along the **Central Asian Flyway in India**.
    - ✓ These projects are implemented by the **UNDP** along with **Indian Ministry of Environment, Forest, and Climate Change acting** as the executive agency.





5.6.4. 30TH ANNIVERSARY OF UNCCD

30th anniversary of the United Nations Convention to Combat Desertification (UNCCD).

- UNCCD is 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).**

About UNCCD

- Established in 1994, UNCCD is the **sole legally binding international agreement** linking environment and development to sustainable land management.

- **Members:** 196 countries and the European Union.
- **Objectives**
  - **To protect and restore land** and ensure a safer, just, and more sustainable future.
  - It's committed to a **bottom-up approach**, encouraging the **participation of local people** in combating desertification.
- **Report:** Global Land Outlook.



Issue of Land Degradation and Desertification

- Land degradation is the **deterioration or loss of the productive capacity** of the soils for present and future.
- Land degradation affects up to **40% of the world's land area,** resulting in the loss of 100 million hectares of healthy land each year.
- In India, **32% of its land is under degradation** and **25% undergoing desertification.**

5.6.5. MONTREAL PROTOCOL

According to a study, Montreal Protocol has been effective in reducing emissions of Ozone-Depleting Substances (ODS).

Key highlights of study

- I**mpact of Hydrochlorofluorocarbons (HCFCs) on Earth's energy balance** and **globally averaged chlorine content of ODS in troposphere has decreased since 2021**, five years earlier (2026) than expected.
  - **HCFCs** are compounds containing **carbon, hydrogen, chlorine** and **fluorine**.
- **HCFC-22,** the most abundant HCFC, has **declined significantly.** Its Global Warming Potential (GWP) is thousands of times more than carbon dioxide (CO2).
  - HCFC-22 is used as a **refrigerant in air conditioners,** cold storage, retail food refrigeration, etc.
- **Minor decline** were observed in **HCFC-141b, second most abundant HCFC**.
  - **HCFC-141b** is used as a **blowing agent in production of rigid polyurethane foams**.
  - **India has achieved complete phase-out of HCFC-141b** under ODS (Regulation and Control) Amendment Rules, 2014.
    - ✓ This is **in line with India's commitment under Montreal Protocol** for Substances that Deplete Ozone Layer.

Montreal Protocol

- Signed in 1987, it is a **global treaty** to **eliminate production** and **use of ODS**.
- Implemented under **Vienna Convention (adopted in 1985).**
- **Kigali Amendment** to **Montreal Protocol** was **adopted in 2016** (and entered into force in 2019) to phase-**down production** and **consumption** of **Hydrofluorocarbons (HFCs).**
  - HFCs are **non-ODS alternative to CFCs and HCFCs**. HFC's global-warming potential (GWP) is thousands of times more than CO_2.

Ozone and Ozone-Depleting Substances (ODS)

- ODS are **human-made chemicals** containing **chlorine and bromine** (like Chlorofluorocarbons (CFCs), HCFC).
- They can reach stratosphere where they undergo catalytic reactions, further leading to destruction of ozone.
- Stratospheric ozone **(good Ozone) are found at 10-40 KM** above Earth's surface, and protects Earth from **UV radiation of Sun.**
- **Ozone** formed in **Troposphere is harmful** and is called **'bad ozone'**.

5.6.6. ANTARCTIC TREATY

46th Antarctic Treaty Consultative Meeting (ATCM) and 26th Committee on Environmental Protection (CEP) concluded

These were hosted by the **National Centre for Polar and Ocean Research, Ministry of Earth Sciences**, Government of India.

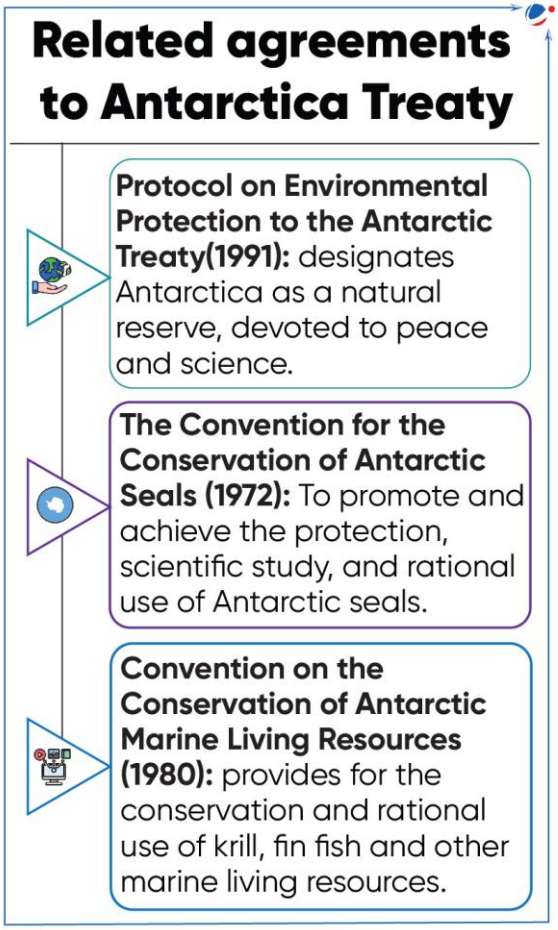
- The CEP advises the ATCM on **environmental protection and conservation in Antarctica.**
- Measures, Decisions and Resolutions, adopted at the ATCM, **give effect to the principles of the Antarctic Treaty.**

About Antarctic Treaty

- **Genesis:** Signed in Washington, in **1959** by **12 countries** & **entered into force in 1961**.
- **Members:** 57 out of which 29 are consultative parties (participate in the decision-making).
  - **India has been a Consultative Party** since 1983.
- **Applicability:** The area south of 60° South latitude.
- **Key provisions**
  - Antarctica shall be used for **peaceful purposes only.**
  - **Facilitate international scientific cooperation in Antarctica.**
  - **Prohibits nuclear explosions, radioactive waste disposal, and military deployments** in Antarctica.

India's initiatives for Antarctica

- India's first Antarctic research station was **Dakshin Gangotri (**983). India currently operates two research stations- **Maitri** (1989) and **Bharati** (2012).
  - **In ATCM- 46** India announced a plan to set up an **Antarctic research station, Maitri-II.**
- In 2022, India enacted the **Antarctic Act**, reaffirming its commitment to the Antarctic Treaty.



5.6.7. COLLECTIVE INTELLIGENCE (CI) INITIATIVES

Recently, 'Untapped Collective Intelligence for Climate Action report' was released **by the UNDP.**

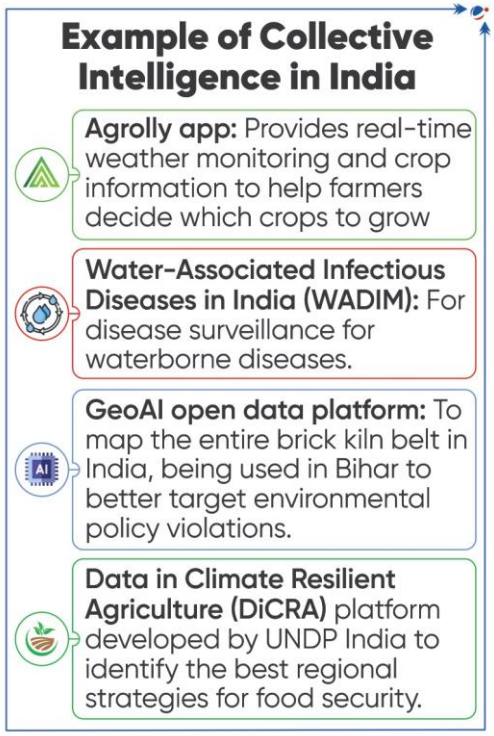
- The report explores the potential of **Collective Intelligence (CI) initiatives** in climate adaptation and mitigation.

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.

Potential of CI in Climate Action:

- **It can bridge:**
  - **Data gap:** Mobilising citizens to generate **real-time localized data,** and bringing together data sets to uncover new insight.
  - **Doing gap:** Getting **more people involved** in taking climate action, and helping people monitor the follow through of institutions.
  - **Diversity gap:** Bringing a wider range of people, including Indigenous communities and perspectives into climate processes and data collection.
- **It can decrease:**
  - **Distance Gap:** CI initiatives foster a **two-way exchange** between scientists and local communities, **enhancing scientific understanding and public knowledge**, as well as **creating mutual trust.**
  - **Decision-making Gap:** Closing gaps between opposing views and interests (like (Climate vs. growth) to speed up required climate action.



5.6.8. UNESCO RELEASES STATE OF THE OCEAN REPORT (2024)

The report, structured around the **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

- **Warming:** Ocean is now 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 Ocean and Southern Oceans.**
- **Rising Seal level rise:** Mostly due to **accelerated ice mass loss** from the Greenland and West Antarctica ice sheets, and to a lesser degree from accelerated ocean warming.
- **Acidification:** Ocean absorbs around 25% of annual anthropogenic CO2. This process reduces seawater pH (ocean acidification).
  - ocean acidification would **increase by more than 100% by the end of the century**
- **Deoxygenation:** Ocean oxygen content is decreasing, resulting in worsening hypoxia.
  - However, it is **unclear** whether deoxygenation is **accelerating in response to ocean heat content increase.**
- **Coastal blue carbon ecosystems:** Mangroves, seagrasses and tidal marshes provide **refuge against a warmer, more acidic ocean,** and are an **important store of carbon.**
  - However, their protection is not guaranteed and **20–35% have been lost since 1970.**



5.6.9. CARBON PRICING

State and Trends of Carbon Pricing 2024 Report is released by the World Bank report.

Key finding of the report

- **Carbon Pricing (CP) revenues** in 2023 exceeded **USD 100 billion for the first time.**
- There are **75 global CP instruments in operation**, covering around **24% of global greenhouse gas emissions.**
  - **Brazil, India, and Türkiye** have made notable progress towards CP implementation.
- **China and India** are **largest host countries** in terms of **issuances of Carbon Credits.**

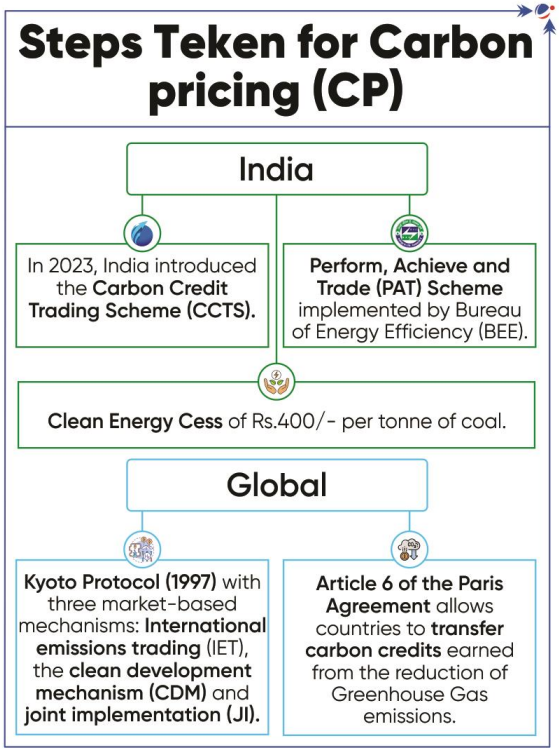
Carbon pricing (CP) is an instrument that attaches **a cost to greenhouse gas emissions**, typically through CO2 pricing mechanisms.

Main types of CP

- **An emissions trading system (ETS):** It is a system where emitters can trade emission units to meet their emission targets.
  - **Types of ETSs are:** Cap-and-trade systems and Baseline-and-credit systems
- **Carbon tax:** It directly sets a price per unit of greenhouse gas emissions or carbon content.

Benefits of CP

- **Place the burden** of emissions damage on polluters.
- **Spur investment** and innovation in clean technology.
- **Facilitate Paris Agreement** emissions pathways for below 2°C/1.5°C warming.



5.6.10. WATER CREDIT

Packaged water maker Bisleri proposes water credits akin to carbon credits.

- Bisleri has partnered with **TERI School of Advanced Studies** to conduct a study and will share its findings with central government to **develop a framework for water credits** for beverages industry.

Water Credit

- A **market-based mechanism** similar to carbon credits, which incentivises water conservation and quality improvement.
  - **Carbon credits** are generated by projects that have **reduced or avoided or removed carbon emissions**.
  - **Each credit represents one less tonne of carbon dioxide**, or another greenhouse gas equivalent, (CO_2e) in atmosphere.
- Individuals and entities can earn **tradable credits** by adopting water-saving measures.
  - These credits can then be **sold to others needing to offset their water usage or improve their water management practices.**

Significance of Water Credits

- **Addressing water stress** and help in achieving **SDG6 (Clean Water and Sanitation).**
  - In India, 11 out 15 major river basins will be **water-stressed** by 2025. (Council on Energy, Environment, and Water (CEEW))
- Promote water-saving measures and help **enhance water use efficiency** in agriculture, which is the **largest extractor of groundwater**.
- Promote and foster investment in **sustainable water management practices**.

Challenges in implementing water credit system

- Unlike carbon emissions, water savings **require localized approach**, factoring in rainfall and consumption at a watershed level.
- **Spatial limitation for transactions** as they are confined to **hydrological boundaries**.
- **Preventing** wealthier entities from dominating the market.

Potential approach towards water credit system

- A **regulatory body** must be in place to facilitate and successfully maintain free market conditions.
- Adopt **multiplayer approach**. For example, industries can buy water credits from water-rich municipalities, thus helping them mitigate fund crunch.
- Adopt **global best practices** to lay a roadmap for water trading.
  - For instance, water is traded on markets in **Murray-Darling basin in Australia**, which helped farmers make more productive use of water.

5.6.11. NASA'S MISSION PREFIRE

NASA Launches Small Climate Satellite **to measure heat lost from Earth's poles**

NASA has launched one of the two climate satellites under **PREFIRE (Polar Radiant Energy in the Far-InfraRed Experiment) mission.**

- The PREFIRE Mission consists of two **shoebox-size cube satellites, or CubeSats.**
- The mission will measure how much heat the Arctic and Antarctica radiate into space and how this influences the planet's climate.
- It will help **scientists better understand the heat budget of the planet**.

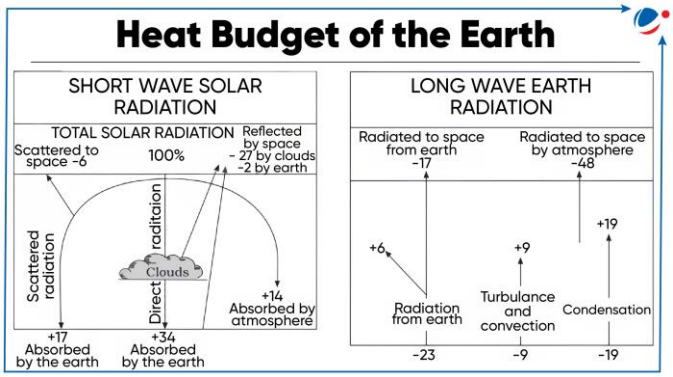
Heat Budget of the Earth

- It is the **balance between the amount of heat incoming to Earth from the Sun and the amount of heat outgoing from Earth into space.**

- **Factors responsible for the disturbance of heat budget** are Green House Gases emissions, reduction in thickness of the ozone layer, melting of glaciers etc.

Impact of imbalance of Heat budget

- **Heat gets accumulated in Earth's components** like the atmosphere, land, etc which is fuelling global warming.
- Melting of ice causes a **decrease in Earth's white surface area,** leading to less solar energy to be reflected **(lower albedo)**.
  - Albedo is the reflectivity of solar radiation from a surface.
- **Ocean absorbs excessive heat** affecting the Oceanic Circulation like Atlantic Meridional Overturning Circulation.



5.6.12. SUSTAINABLE DEVELOPMENT REPORT 2024

UN Sustainable Development Solutions Network (SDSN) released Sustainable Development Report 2024

Published by SDSN since 2016, report **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, through education, research, policy analysis, and global cooperation.

Key Highlights of Report

- **On average, only 16% of the SDG targets are on track** to be met globally by 2030.
  - 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.
  - **Finland is ranked first**, followed by Sweden and Denmark.
  - **India is ranked 109th** out of 166 countries, 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):** It ranks countries based on their engagement with the UN System.
  - **Barbados ranks highest, India at 139th place** while USA ranks last.

Recommendations by UNSDSN

- **Sustainable Development agenda** should remain the **core of global cooperation** to 2050 and should be properly financed.
- **Strengthen UN agencies** along with **systematic monitoring** of UN-based multilateralism.
- **Enhancing multilateral governance** of technological risks and ensure **universal access to vital technologies and R&D capacities**.
- **Establish UN Parliamentary Assembly** and **reform UN Security Council** through **adding India as permanent member** and adoption of procedures to override a veto.

NOTE: The **Sustainable Development Goals 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).**

5.6.13. UNESCO'S GREENING EDUCATION PARTNERSHIP

UNESCO launched two new tools – new Greening Curriculum Guidance (GCG) and new Green School Quality Standards (GSQS) – under **Greening Education Partnership**.

- **New GCG:** A practical manual providing, for the first time, a **common understanding of what climate education should consist of** and how countries can mainstream environmental topics across curricula, with detailed expected learning outcomes.
- **New GSQS**: It sets the **minimum requirements on how to create a green school** by promoting an action-oriented approach.

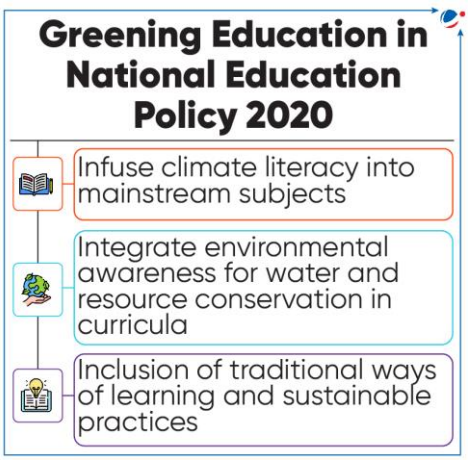
About Greening Education Partnership:

- It is a **global initiative** comprising 80 member states and supports countries to tackle the **climate crisis by harnessing the critical role of education.**

- **Objective:** To ensure all learners acquire knowledge, skills, values, attitudes and action to **tackle climate change** and **to promote sustainable development.**
- **Pillars of Green Education:**
  - **Greening Schools:** To ensure that all schools achieve green school accreditation and address climate change through their teaching, facilities and operations.
  - **Greening Curriculum:** Integrate climate education into school curricula, technical and vocational education and training, workplace skills development etc.
  - **Greening Teacher Training and Education Systems' Capacities:** Integration of climate education in building capacity of school leaders.
  - **Greening Communities:** Strengthen community resilience through community learning centres and learning cities.

Education and Climate Change

- **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** tends to be associated with a **higher probability to engage in adaptation action.**
- Increasing girls' education can mitigate climate change indirectly through its **impact on demographic growth.**



5.6.14. EU'S NATURE RESTORATION PLAN (NRP)

European Union approves **NRP**, first of its kind.

- It is a continent-wide and comprehensive law that forms part of the **EU's European Green Deal** (aims for net zero emissions of greenhouse gases by 2050).

Key Features

- **Aim:** Contains **binding** restoration targets for long-term recovery of nature in EU's land and sea areas.
  - It seeks to recover at least **20% of the EU's land and sea** areas by **2030,** and ultimately **all ecosystems in need** of **restoration** by **2050.**
- **Focus areas:** Covers the existing legislation (for wetlands, forests, grasslands, etc.), pollinating insects, forest ecosystem, etc.
- **Implementation:** Through **National Restoration Plans** of the EU countries.

5.6.15. GLOBAL SOIL PARTNERSHIP (GSP)

GSP Assembly calls for urgent action to **improve and maintain health of at least 50 percent of world's soils by 2030** at Twelfth Plenary session **(hosted by FAO).**

About Global Soil Partnership

- It was **established in 2012** by **Food and Agriculture Organization (FAO)** as a mechanism to develop a strong interactive partnership and enhanced collaboration and synergy of efforts between all stakeholders.
- It aims to **position soils on Global Agenda**, **promote inclusive policies and soil governance** as well as sustainable soil management.

5.6.16. 50TH YEAR OF CROCODILE CONSERVATION PROJECT

India launched its **Crocodile Conservation Project** 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).

Crocodiles

- Crocodiles are largest surviving species of the **vertebrate class Reptilia**.
- **Habitat:** Except for one saltwater species, crocodiles live **mainly in freshwater swamps, lakes and rivers**.
- **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.

Species	Description	Natural Habitat
Estuarine or saltwater crocodile (*Crocodylus porosus*) 	• **Largest living reptile** on earth. • **IUCN: Least Concern** • **Schedule I of Wildlife Protection Act, 1972 (WPA)** • **CITES: Appendix I**	• Found in **only three locations:** Bhitarkanika, Sundarbans and Andaman and Nicobar Islands.
Mugger or marsh crocodile (*Crocodylus palustris*) 	• Broad snouts, dig burrows or holes for nesting purposes. • **IUCN: Vulnerable** • **Schedule I of WPA** • **CITES: Appendix I**	• It is present in **15 of India's states** including much of the Ganga River drainage.
Gharial (*Gavialis gangeticus*) 	• 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	• **Inhabit freshwater rivers:** Chambal, Girwa, Ghagra, Son and Gandak.

Bhitarkanika National Park

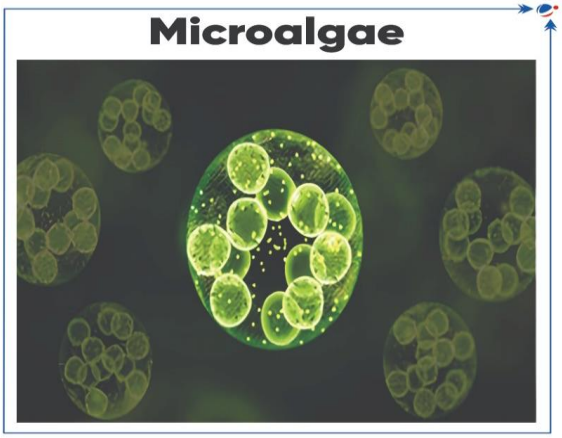
- Located in Odisha, it is **India's second largest mangrove ecosystem** after the Sunderbans.
- It is a **Ramsar site**.
- It is essentially a network of **creeks and canals** which are inundated with waters from rivers **Brahmani, Baitarani, Dhamra and Patasala**.
- Home to **largest congregation of Saltwater Crocodile** along with water monitor lizard, pythons, hyenas etc.

5.6.17. MICROALGAE

CSIR-IICT scientists highlighted microalgae potential as a **protein supplement.**

About Microalgae

- 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:** These are rich in nutrients and biologically active substances, such as proteins, vitamins, etc.
  - **Carbon cycle:** They absorb carbon dioxide and produce oxygen through photosynthesis.
  - **Food Chain:** Phytoplankton, which forms the base of the food chain, includes microalgae.



5.6.18. IBERIAN LYNX (LYNX PARDINUS)

According to IUCN, **conservation status** of Iberian lynx has **improved from Endangered to Vulnerable**, reflecting significant **increase in its population**.

About Iberian lynx

- **Habitat**: Medium-sized **wild cat species** native to **Iberian Peninsula in southwestern Europe**, including Portugal and Spain.
- **Appearance**: Weighs about half as much as Eurasian species, with long legs, short tail with a black tip, tufted ears and relatively small head.
- **Characteristics**: Solitary hunter; nocturnal or crepuscular; may temporarily become diurnal during winter; live in small, isolated meta-populations; **European Rabbit** accounts for **80-99%** of its diet.
- **Threats:** Decreasing food base, Poaching, habitat loss etc.
- **Conservation status:** Appendix I of CITES.

5.6.19. PENCH TIGER RESERVE

Advanced Artificial Intelligence (AI) system for early detection of forest fires has been launched at Pench Tiger Reserve.

About Pench Tiger Reserve

- **Location:** Spread across states of Maharashtra and Madhya Pradesh in lower southern reaches of Satpura hills.

- **Background:** Status of National Park in 1975, and Tiger Reserve in 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.
- It also finds mention in **Ain-i-Akbari** and it is the original setting of **Rudyard Kipling's most famous work, The Jungle Book**.

5.6.20. BHUVAN PANCHAYAT AND NDEM 5.0

Union Minister of State for Science and Technology to launch two Geoportals – **Bhuvan Panchayat 4.0** and **National Database for Emergency Management (NDEM 5.0)**.

- **National level geospatial databases** for these two portals are created by **ISRO.**

About Bhuvan Panchayat 4.0

- It is an online **geospatial data and services dissemination platform**.
- **Objective**: Integrate and use space-based information in governance and research initiatives for spatial planning at Gram Panchayat level.

About NDEM 5.0

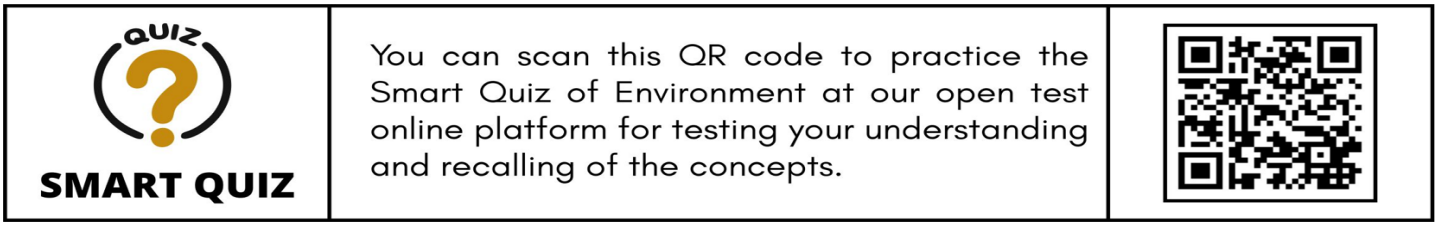
- It provides a **comprehensive geospatial database** for entire country for situational assessment and effective **decision-making during disasters/ emergency situations.**

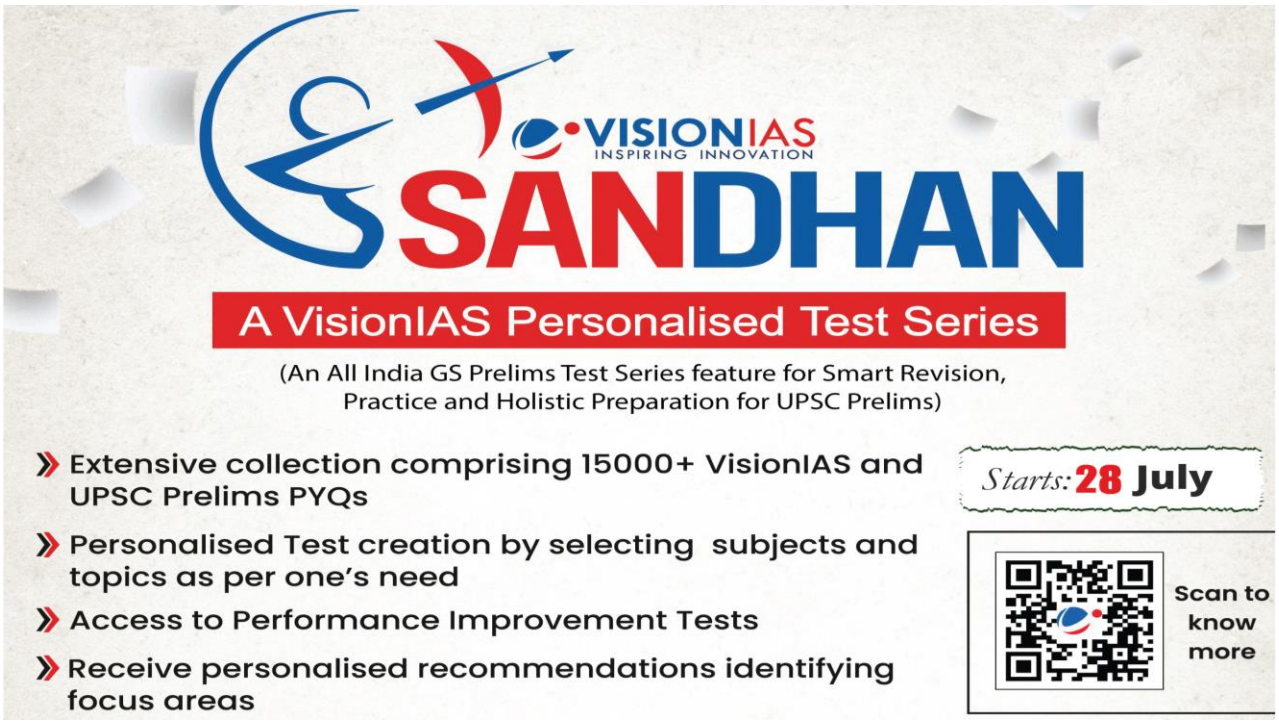
5.6.21. HEAT DOME

Cities across southern and western states in the USA are facing heat waves due to a weather phenomenon known as Heat Dome.

About Heat Dome

- It is a weather phenomenon where a **ridge of high pressure gets stuck in the atmosphere.**
- **It 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.**





6. SOCIAL ISSUES

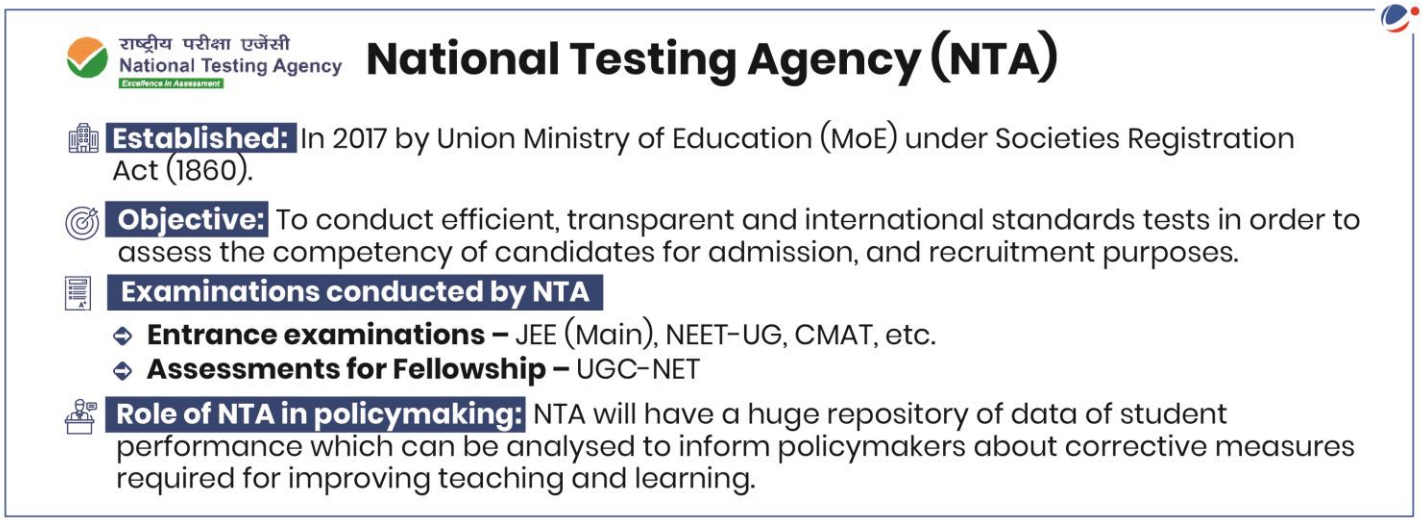
6.1. FAILING PUBLIC EXAMINATION SYSTEMS

Why in the News?

Recent controversy surrounding NEET UG and UGC NET examinations conducted by **National Testing Agency (NTA)** raised serious concerns surrounding failure of public examinations among students and academic circles.

More on News

- Controversy began over an **alleged paper leak case during the conduct of the NEET UG exam** on May 5, 2024, and a consequent **outrage over "inflation of marks"** of 1,563 students who were compensated for loss of time.
- Later, on June 19, Union Education Ministry, ordered the **cancellation of the UGC-NET 2024** following inputs that the **exam's integrity may have been compromised**.
- In this backdrop, Union Education Ministry also constituted a **high-level committee of experts** led by former ISRO Chairman **Dr. K Radhakrishnan** to reform NTA.



Reasons for Failing Examination Systems in India

- **Systemic:** Shift to a **single national-level exam**, such as NEET for medical admissions, which doesn't account for local educational contexts, raises **concerns about equitable assessment**.
  - **Political influence** in examination conducting agencies through appointments to key positions, lack of autonomy, etc., result in **compromised decision-making and potential manipulation** of exam processes.
  - **Policy instability** including frequent changes in exam patterns or eligibility criteria which creates confusion and stress for students. **E.g.,** Introduction and subsequent removal of upper age limits for NEET.
  - There have been **cases of high-level corruption in exam boards**, including allegations of bribery for leaking papers or manipulating results. **E.g., Vyapam scam in Madhya Pradesh**.
- **Cultural:** In some parts of India, there's a degree of social acceptance of cheating in exams, often viewed as a way to overcome systemic disadvantages. **E.g.,** Incidents of mass cheating reported from Bihar.
  - **High-stakes exams are often seen as life-changing events**, leading some to justify cheating as a means to an end with active participation of Parents and relatives.
- **Technological:** Advancements in technology such as use of Bluetooth devices and Smartwatches, have made sophisticated cheating methods more accessible.
  - **Inadequate cyber security measures** including lack of **effective encryption or secure transmission** methods for digital question papers exposes digital copies of question papers to unauthorized access.

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 disruptions, exacerbating existing social disparities.
- **Mental health issues** among students and parents as uncertainty and rescheduling can cause significant anxiety.
- **Shift in social values** as repeated scandals may normalize cheating, affecting societal ethics.

- **Economic: Direct financial losses** due to conduct of re-examinations incur significant costs for the government and examination-conducting bodies.
  - **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.
  - 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.
  - Mishandling and failure of public examinations can affect the **public's perception of government efficiency**.
- **Institutional: Deterioration of professional standards** due to failure of examinations to properly assess candidates resulting in less qualified individuals entering the professional fields.
  - **Perpetuation of cycle of mediocrity:** When incompetent professionals become future educators or evaluators, they perpetuate cycle of poor 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.

Public Examination (Prevention of Unfair Means) Act, 2024

- **Objective:** To bring greater transparency, fairness and credibility to the public examination systems and to reassure the youth that their sincere and genuine efforts will be fairly rewarded and their future is safe.
- **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 but which may extend to five years and with fine up to ten lakh rupees.
    - ✓ **For service provider or any person/ group committing organized crime**: Imposition of a fine up to ₹1 crore, imprisonment of 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**.
- In pursuance of the Act, Union Ministry of Personnel, Public Grievances and Pensions has notified **Public Examination (Prevention of Unfair Means) Rules, 2024**. **Key provisions of the rules include:**
  - **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.**

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.

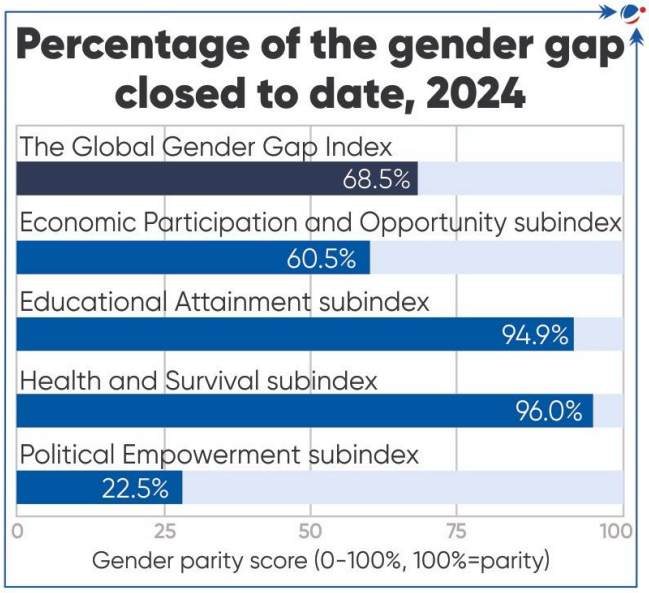
- **Institutional reforms:** Establish independent statutory body for overseeing public examinations to reduce political interference in examination boards and testing agencies.
- **Decentralization and customization:** Allow more state-level input in national exams and introduce adaptive testing to address regional disparities and better assess individuals.

6.2. NEWS IN SHORTS

6.2.1. GLOBAL GENDER GAP REPORT 2024

The report is released by **World Economic Forum (WEF).**

- It 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.**



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.**
  - Saw **small declines in Educational Attainment and Political Empowerment** while Economic Participation and Opportunity slightly improved.
  - Shares of **women are high in primary, secondary and tertiary education enrolments.**

Recommendation

- 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.***

6.2.2. UNICEF RELEASES "CHILD NUTRITION REPORT, 2024"

The report reveals severe child food poverty (CFP), defined as children's **inability to access and consume a nutritious and diverse diet in early childhood** (first five years of life), globally.

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 r**eplacing 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.**

Recommendations

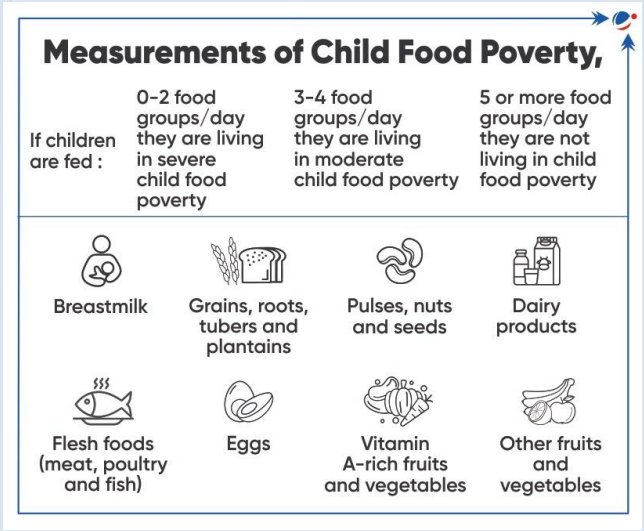
- **Strengthen data systems** to assess the severity of CFP.
- **Transform food systems** to make nutritious foods accessible, affordable and desirable option for feeding young children.
- **Leverage health systems** to deliver **essential nutrition services,** including **counselling** on child feeding.

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).

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.**



6.2.3. CHILD LABOUR

- **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.**

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 in India.
- **Child labour mostly persists in** agriculture, household industries, roadside dabas, 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.



6.2.4. GLOBAL FOOD POLICY REPORT 2024

The report, released by International Food Policy Research Institute (IFPRI), is themed around 'food systems for healthy diets and nutrition'.

- **Key findings**
  - **Climate change and biodiversity loss** can have complex and interconnected effects on **diets, affecting food availability, diversity etc.**
  - More than **two billion people**, many of them in Africa and South Asia, cannot afford a healthy diet.
  - **Around 38 percent of the Indian population** ate unhealthy foods

- As a result of poor diet, **16.6% Indians suffer from malnutrition (2021)**.

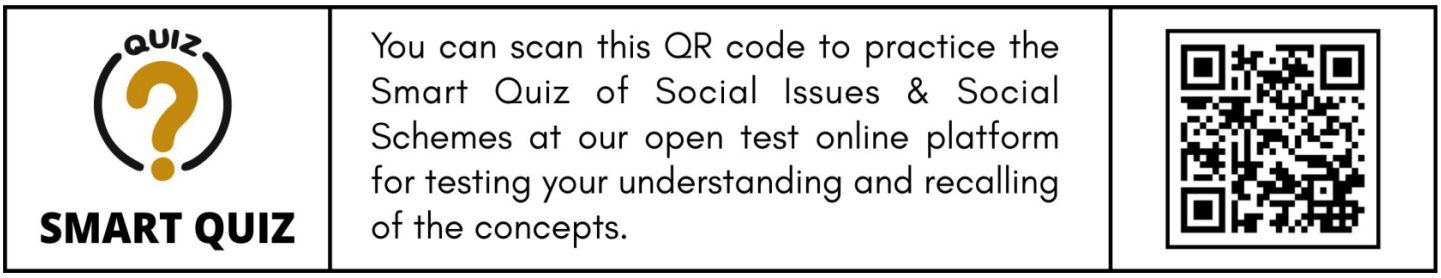
- **About IFPRI: Established in 1975,** it is a research center of the **Consortium of International Agricultural Research Centers.**

6.2.5. MIGRATION AND DEVELOPMENT BRIEF 2024

The brief was released by the **World Bank.**

Key highlights

- **Remittance**
  - Remittance **flows to low- and middle-income countries (LMICs)** reached to **$656 billion.**
  - **Top five recipient countries: India ($120 billion),** followed by Mexico, China, Philippines, and Pakistan.
- **Migration**
  - **Top destinations Countries:** US, Germany, Saudi Arabia, Russia, and UK.
  - **Largest origin countries:** (18.7 million emigrants) followed by Ukraine, China, Mexico and Venezuela.
  - **Largest migration corridor:** Mexico to US.





7. SCIENCE AND TECHNOLOGY

7.1. QUANTUM SCIENCE AND TECHNOLOGY

Why in the News?

UN designated 2025 to be **International Year of Quantum Science and Technology.**

More about the News

- Year 2025 was chosen as it recognizes 100 years since the initial development of quantum mechanics.
  - German physicist **Werner Heisenberg** published a famous paper which led to the discovery of phenomena called **quantum mechanics**.
- It is a global initiative that aims to **strengthen national capacities** in the basic sciences and science education.
- Also, it highlights the **contribution** of **quantum science** to our increased knowledge and understanding of the physical universe, as well as the critical role of quantum science and technology in developing sustainable solutions.

About Quantum mechanics and its key applications

Quantum mechanics 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).

Do you know

> In physics, a **quantum is the smallest possible discrete unit of any physical property.** It usually refers to properties of atomic or subatomic particles, such as electrons, neutrinos and photons.

- **Quantum Computing & Simulations:** Uses qubits (typically subatomic particles) as I basic unit of information instead of binary bits.
  - **In Health care & well-being,** Quantum photonics is advancing medical imaging and diagnosis and Quantum chemistry is supporting development of new vaccines and drugs.
  - **Quantum computing** along with Artificial Intelligence (AI) can **process vast amounts of data** and perform complex calculations rapidly.
  - **Optimisation in Logistics and Supply Chain** by effectively solving complex optimisation problems, such as route planning and inventory management.
- **Quantum Communications:** It 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 individual particles such as photons and electrons as highly sensitive sensors in current technologies related to measurements of forces, gravitation, electric fields etc.
- **Quantum Material & Devices:** Design and synthesis of quantum materials such as superconductors, novel semiconductor structures, and topological materials for the fabrication of quantum devices.
  - Quantum engineering is leading to more energy-efficient and affordable **solar cells** and **low-emission LED light sources** and improving accuracy of long-term climate models.

India's Initiatives in the field of Quantum Technology

- **National Quantum Mission (2023):** Aims to seed, nurture, and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology.
- **Quantum Enabled Science & Technology (QuEST):** A research program to build quantum capabilities.
- **Quantum Computing Applications Lab** (**QCAL**): To accelerate quantum computing-led research and development and enable new scientific discoveries.
- **Other initiatives:**
  - **National Mission on Quantum Technologies & Applications (NMQTA).**
  - **Qsim – Quantum Computer Simulator Toolkit.**
  - **Quantum Frontier mission** of Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC).
  - Setting up of **dedicated labs and centres** at a military engineering institute at Mhow, Madhya Pradesh.

To know more about National Quantum Mission, kindly refer to article 7.3 National Quantum Mission of January 2024 edition of the Monthly Current Affairs Magazine.

Challenges in development and adoption of Quantum Technology in India

- **Regulation**: There is a need for standards and protocols for hardware, software, and communication interfaces.
  - Developing these standards will be essential for ensuring compatibility and interoperability between different quantum computing platforms.
  - Establishing clear ownership and **licensing frameworks for quantum-related intellectual property.**
- **Availability of Infrastructure:** Building and maintaining sophisticated labs, specialized equipment, and high-performance computing facilities require significant resources and continuous upgradation.
- **Scalability**: Scaling up quantum computers to hundreds or thousands of qubits while maintaining high levels of coherence and low error rates remains a major challenge.
- **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.
  - **Developing reliable error correction techniques** is therefore essential for building practical quantum computers.
- **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 Research & Development in India** remained about 0.64 % of GDP which is very low.
    - ✓ Also, India's **private sector** lags behind advanced nations in R&D investment, **contributing less than 40% compared to over 70% in developed countries**.

Way Forward

- **Attract private investment**: Implement tax breaks, grants, and public-private partnerships to incentivize private companies to invest in quantum research and development.
- **Promote regional infrastructure development**: Allocate resources to develop quantum research infrastructure in various regions across India, fostering broader participation and talent distribution.
- **Establish a dedicated regulatory body**: Create a central regulatory body focused on quantum technologies, responsible for drafting and implementing relevant regulations.
- **Facilitate technology transfer:** Develop mechanisms to bridge the gap between academic research and commercialization, allowing private companies to access and utilize cutting-edge quantum technologies.
- **IPR Regime:** Establish transparent and efficient frameworks for ownership, licensing, and technology transfer of **quantum-related intellectual property**.

Related News

India's first Quantum Diamond Microchip Imager

- It will be developed by Tata Consultancy Services (TCS) in partnership with IIT-Bombay.
- This Project aligns with India's **National Quantum Mission (NQM)**, launched in 2023 and implemented by the **Department of Science & Technology (DST).**
- **NQM** aims to position the nation as a global **Quantum Technology (QT)** leader.
  - **QT** is a class of technology that works by using the principles of **quantum mechanic**s (the physics of sub-atomic particles).
- **About Quantum Diamond Microchip Imager**
- An **advanced sensing tool** for semiconductor chip imaging.
- Uses the **defects** in a diamond's structure, known as **Nitrogen-Vacancy (NV) centers,** for detecting **anomalies** in semiconductor chips.
  - Reduces **chip failures** and improve the **energy efficiency** of **electronic devices**.
  - Also, it will promote development of the semiconductor industry in country.
- Microchip **Imager** will facilitate **Second quantum revolution.**
  - The **Second Quantum Revolution** refers to a **contemporary wave of advancements** and breakthroughs in the field of QT (for e.g. quantum computing).
  - Successor of the **first quantum revolution** (in early 20th century).

- In **first quantum revolution**, discovery of **quantum mechanics** and its **properties** has been done. It enabled inventions such as the laser, transistor etc.

- **About Semiconductor Chips**
  - An essential component of all modern **electronic devices.**
  - Act as the **brain of device**s across industries such as communications, computing, healthcare, military systems etc.
  - Made from pure elements, typically **silicon or germanium**, or compounds such as **gallium arsenide**.

Scan the QR code to know more about **Quantum Technology.**

Weekly Focus #69: Quantum Technology in India: Exploring the possibilities ahead

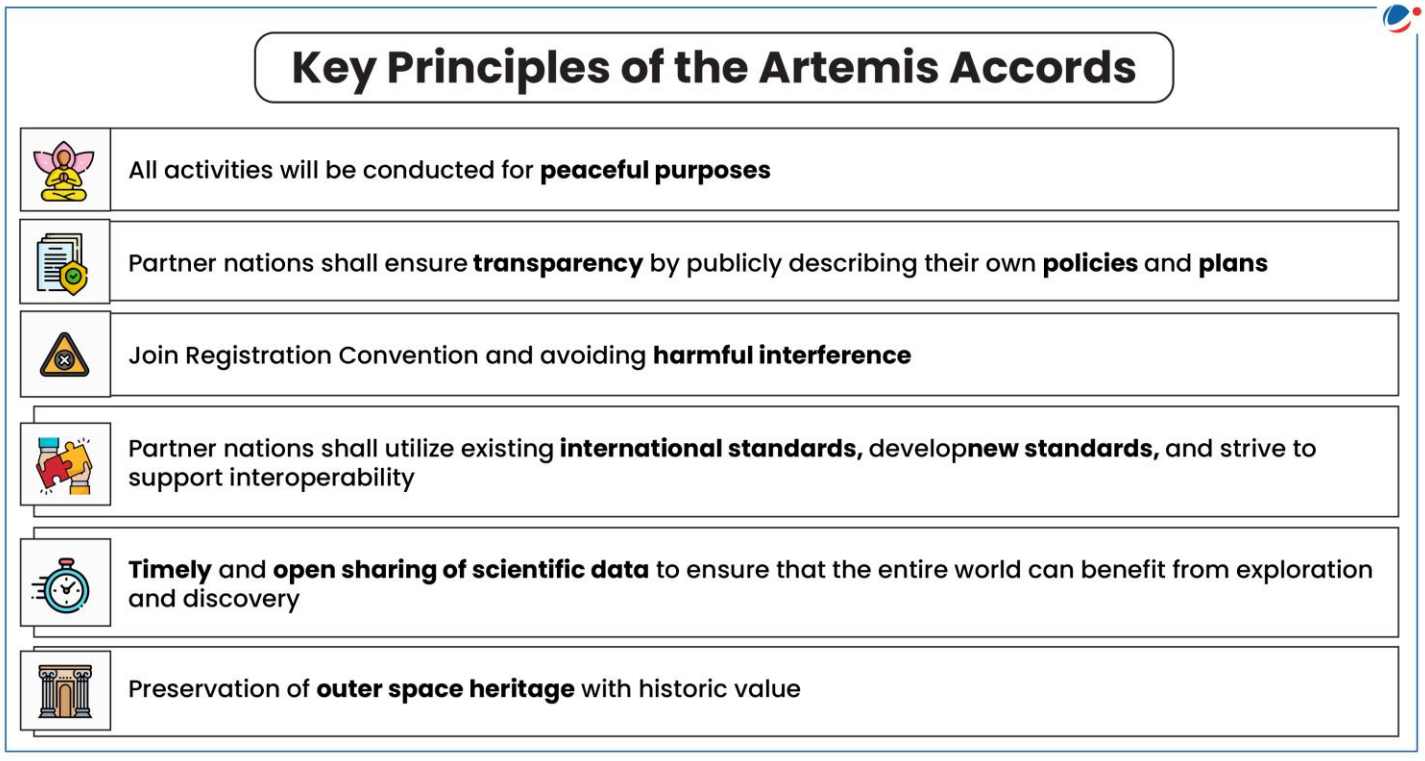
7.2. OUTER SPACE GOVERNANCE

Why in the News?

Armenia has joined as the 43rd signatory nation to NASA's Artemis Accords for lunar exploration.

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 including the Registration Convention, the Rescue and Return Agreement.
- **Objective:** It sets common **non-binding principles** to govern civil exploration and use of outer space, the moon, Mars, comets, and asteroids, for peaceful purposes.
  - Aims to promote Peaceful, sustainable, and transparent cooperation in space.
- **India is also a signatory** to this Accord.



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 for the benefit of all humanity.
  - The 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, Including the Moon and Other Celestial Bodies.
  - **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.**



Need for Reform in Outer Space Governance

- **Space debris:** It is a challenge that will be compounded by the large number of satellites being launched into low Earth orbit. According to ESA estimates, there are **130 million space debris objects** from greater than 1 mm to 1 cm.
  - There is not at present an 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, or a mechanism to support its future implementation.
  - Space mining will be one of the major focus areas of commercial space activity in the coming decades.
- **Space traffic coordination:** At present, national and regional entities coordinate space traffic with different sets of standards, best practices, definitions, languages, and modes of interoperability.
  - This relative lack of coordination widens the gap for countries with less space capacity, making it harder for them to operate their limited space assets in an increasingly complex environment.
- **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.
  - A major challenge in space security is the dual-use nature of many capabilities. Any satellite capable of maneuvering can destroy other satellites.
- **Increase in the number of satellite launches:** There has been an exponential increase in satellite launches over the past decade, driven by both government and private sector participation.
  - For instance, number of satellites have been increasing at 30% on average every year (As of 2020).

What role can India play in improving Outer Space Governance?

- **Promoting better Implementation of Existing Framework:** India is a party to major international agreements, and it can act as a role model vis-à-vis adherence to these agreements.
  - Also, it can help in capacity building of other developing countries in adhering to international agreements.
- **Creating Space Doman Awareness (SDA):** Fostering trust and cooperation among countries with space capabilities, thereby ensuring responsible and secure activities in space.
  - For instance, India collaborates with various space-faring nations such as the United States, Russia, France, and others through partnerships in satellite launches, technology exchanges, and joint research initiatives.

To know more about India's Space Situational Awareness, kindly refer to Article 7.4. Space Situational Awareness in May 2024 edition of VisionIAS Current Affairs Magazine.

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:** The UN recommends the negotiation and development of a new treaty 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:** Develop an effective framework for the coordination of space situational awareness, space object maneuvers, and space objects and events.
- **Space resource activities:** Develop an effective framework for sustainable exploration, exploitation, and utilization of the Moon and other celestial bodies.
  - This framework could include binding and non-legally binding aspects and should build upon the five United Nations treaties on outer space.
- **Inclusiveness:** Member States to consider how to facilitate the participation of commercial actors, civil society representatives, and other relevant actors in the work of outer space-related intergovernmental processes.

7.3. TRANS-FAT ELIMINATION

Why in the News?

World Health Organisation (WHO) has published the **fifth milestone report** on **progress** towards **global trans-fat** elimination, covering the period from 2018–2023.

Key Finding of the report

- A total of **53 countries had best practices and policies in place** for tackling industrial trans-fat in food (As of 2023).
- These policies have vastly improved the food environment for 3.7 billion people, or **46% (it was only 6% in 2018) of the world's population.**
- Report also highlighted that **WHO's ambitious target** to fully eliminate trans-fat from the global food supply by the end of 2023 has **not been fully met.**

Different Kinds of Fat

Fatty acids, which are the **building blocks of fat, are long chains of carbon and hydrogen atoms.** Essential fatty acids are those needed by **the human body that can only be obtained through food.** Some fats are harmful, however.



UNSATURATED FATS

The so-called **"good" fats** can be found in nuts, avocados and other vegetables. The **molecular structure** of unsaturated fat causes it to be lower in calories than other fats.



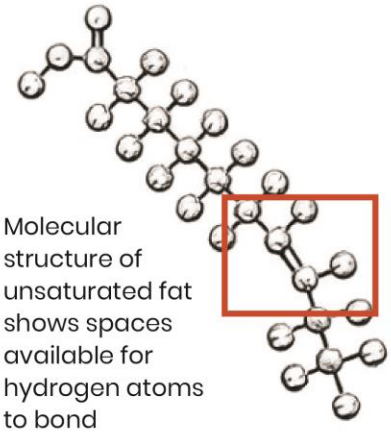
SATURATED FATS

These fats are found mostly in **animal products.** It is recom-mended that people reduce their,consumption of saturated fats in order to stay healty.

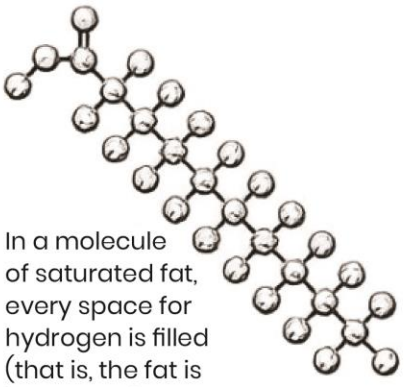


TRANS FATS

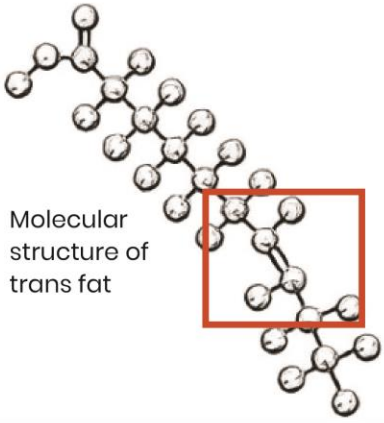
Trans fats are **unsaturated (good) fats** which have been partially saturated with hydrogen to extend their shelf life. Unfortunately, these trans fats are found to elevate **"bad" cholesterol and should be avoided.**



Molecular structure of unsaturated fat shows spaces available for hydrogen atoms to bond



In a molecule of saturated fat, every space for hydrogen is filled (that is, the fat is "saturated" with hydrogen



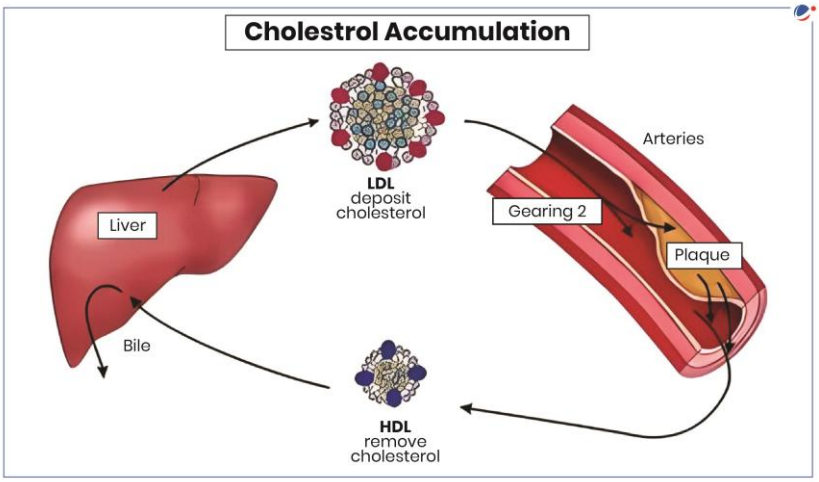
Molecular structure of trans fat

NOTE: Kindly note the difference in molecular structure of unsaturated and Trans Fat.

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**: On the basis of sources they are can be Natural or Artificial.
  - **Natural:** Also called ruminant trans fats, as they are present in small quantities in meat and dairy products. These are not generally considered harmful.
  - **Artificial:** Also called **industrial produced trans fat** as they are formed in an industrial process that adds **hydrogen** to **vegetable oil**, converting the liquid into a solid and resulting in partially hydrogenated oil (PHO).
    - ✓ On average, **trans fat concentrations in PHO is 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.
  - They have been also **linked to inflammation, overweight/obesity, high blood pressure, diabetes and some types of cancers.**



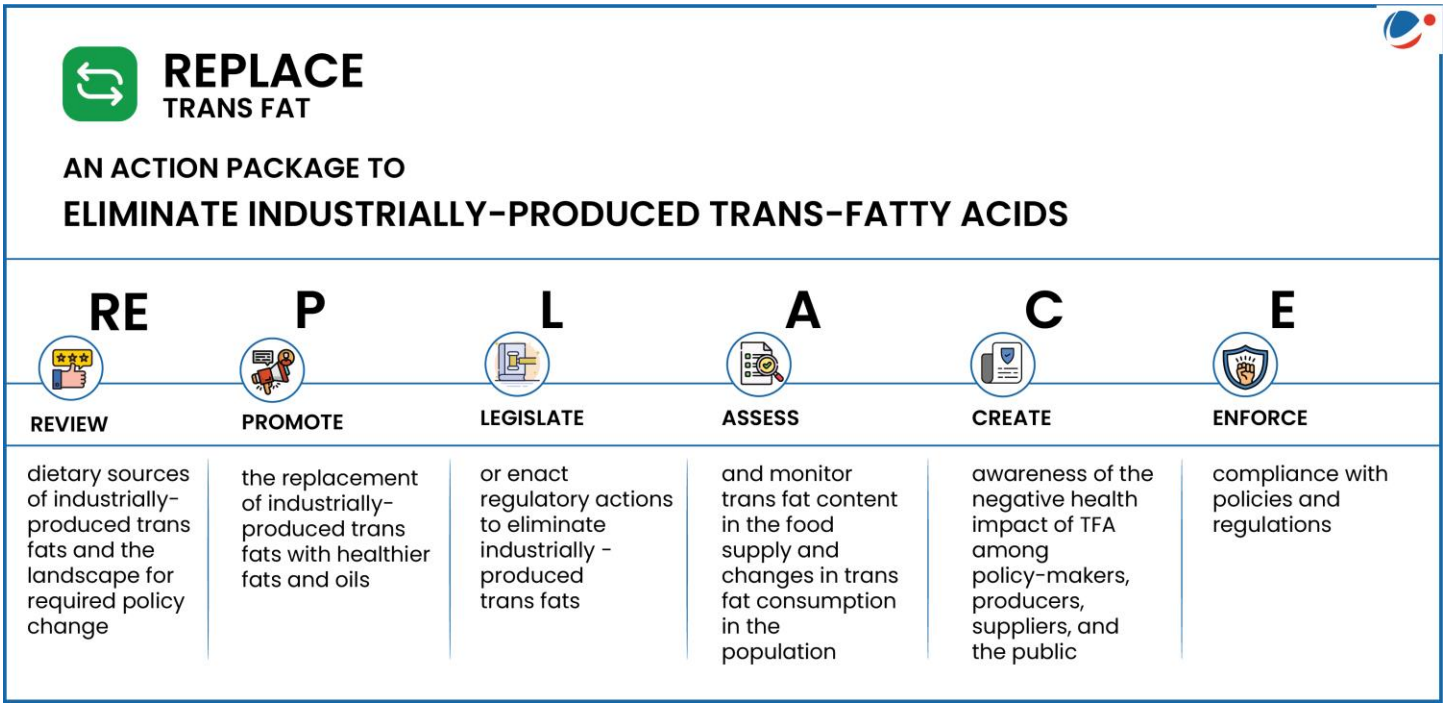
Steps taken to regulate Trans fat

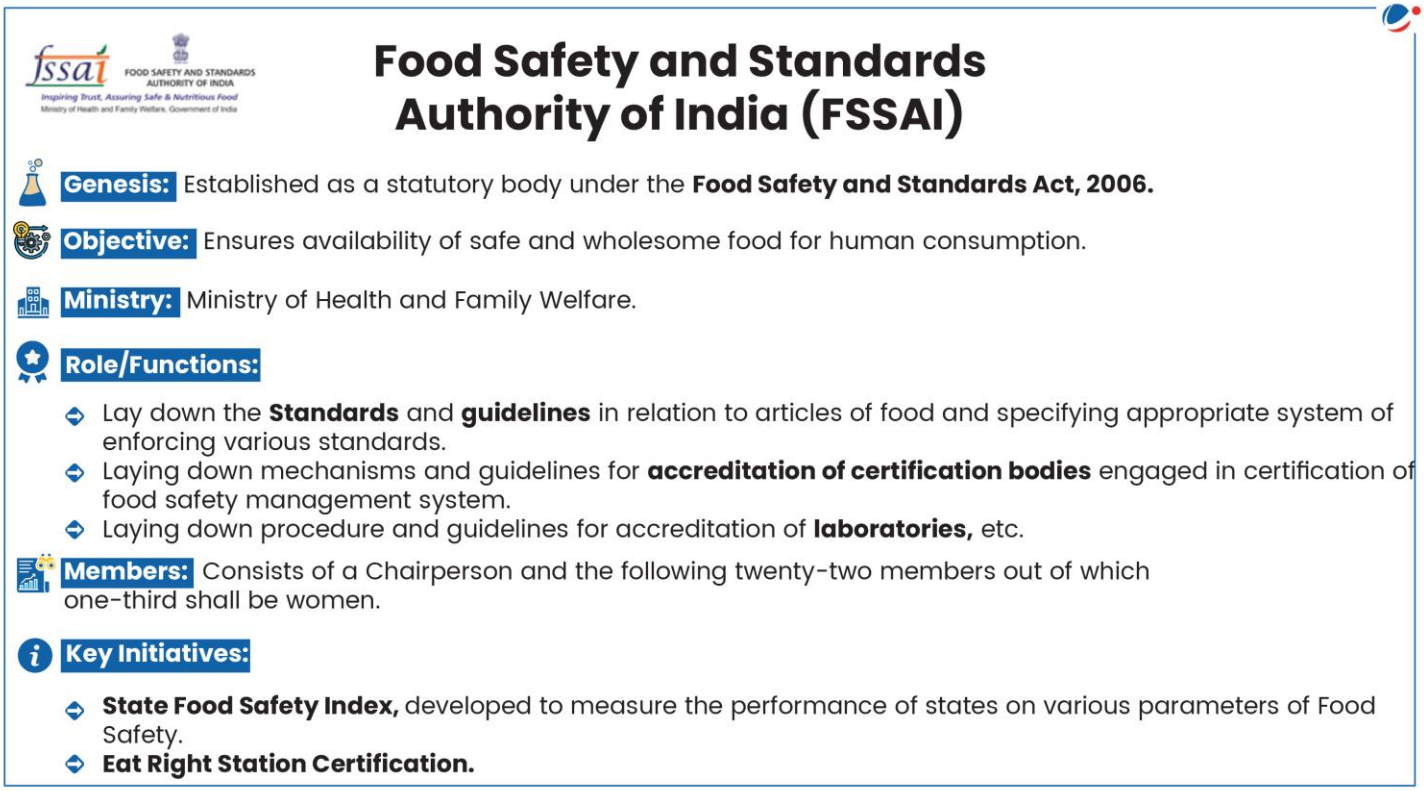
India

- Initiative taken by the **Food Safety and Standards Authority of India (FSSAI)**
  - Trans fat free logo – **Voluntary labelling to promote TFA-free products**
  - **Heart Attack Rewind** – Mass media campaign to eliminate industrially produced trans fats
  - **Eat Right India Movement**
  - In 2021, the amount of TFA in oils and fats was capped at 3% for 2021 and 2% by 2022 (through an amendment to the **Food Safety and Standards (Prohibition and Restriction on Sales) Regulations 2011**)
- **Revised Dietary guidelines** by the Indian Council of Medical Research (National Institute of Nutrition)

Global

- **REPLACE action framework by WHO (2018)**: Provides a strategic approach to eliminating industrially produced trans fat from national food supplies.
  - WHO also calls for best-practice policies in countries that together account for at least 90% of the total global TFA burden and at least 70% of the total TFA burden within each region by the end of 2025.
- **WHO Validation Programme** for Trans Fat Elimination to further drive policy progress.





Challenges in Eliminating Trans fat

- **High demand in Food Industry**: It is extensively used in the food industry due to their **long shelf life** and desirable texture they impart to food products.
  - Also, Trans fat are cheaper in comparison to its alternatives.
- **Poor enforcement of policies**: Many countries have not yet adopted a best-practices elimination policy.
  - Regulating use of trans fat is a key challenge as many unregistered firms are using them in different ways.
  - Also, many developing countries have limited infrastructure and human resource for monitoring the implementation of these policies.
- **Consumer preferences:** Growing inclination towards processed food is a looming challenge towards governments as well as health regulators.

Way Forward

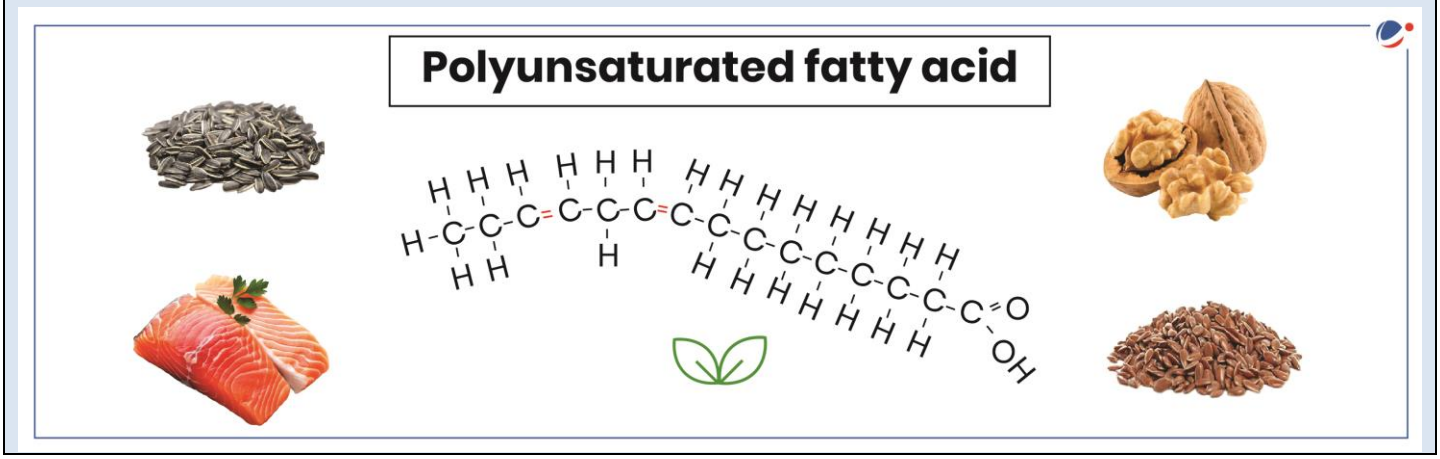
The report recommends following ways to eliminate Trans fat:

- **Policies/Framework**: All countries shall **enact best practice policies**, especially those with the highest estimated remaining burden of disease attributable to trans fat intake.
  - All countries must **strengthen** their **mechanisms to monitor** and **enforce the policies** so that they become eligible for the **WHO Validation Certificate**.
  - Sub-regional bodies must pass **mandatory trans fat elimination policies.**
- **Enforcing Regulations**: Food manufacturers with a high proportion of fats and oils 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, soybean, peanut etc.
- **Awareness and nudge:** Educating consumers regarding the ills of trans fat and associated foods. At the same time, creating policies which nudge the consumer away from processed food. E.g., warnings and images used in cigarette packets.

Related News

Omega-3 Fatty Acids

- In a study, it has been found that regular use of **fish oil supplements** might be a risk factor for atrial fibrillation (an irregular and often very rapid heart rhythm) and stroke among the general population.
  - However, study also suggested that fish oil could help in managing disease progression in those already diagnosed with cardiovascular conditions.
- Fish oil is rich in two important **omega-3 fatty acids** called **eicosapentaenoic acid (EPA)** and **docosahexaenoic acid (DHA)**.
- **About Omega-3 Fatty Acids**
  - These are **polyunsaturated fats**.
    - ✓ Polyunsaturated fats are fat molecules that have more than one unsaturated carbon bond in the molecule.
  - Apart from **EPA and DHA,** ALA (alpha-linolenic acid), another Omega-3 Fatty Acid is obtained from plants.
    - ✓ These are **essential fats**.
      - **Essential fats** are fats that the human body is **unable to make on its own**. They must be obtained through different sources.
  - **Key Sources**: Nuts and seeds (such as flaxseed) Plant oils (such as flaxseed oil,), seafood etc.
  - **Benefits**:
    - ✓ **Reducing inflammation** in the body (which is linked to many chronic diseases).
    - ✓ Significantly **lower blood triglyceride (a type of fat (lipid)) levels.**
      - Extra calories, alcohol and sugar in your body turn into triglycerides.
    - ✓ **Lower blood pressure**, reduces the risk of heart attack, and prevents arrhythmias.
    - ✓ **Vital for brain health and cognitive function**.



7.4. NEGLECTED TROPICAL DISEASES (NTDS)

Why in the News?

World Health Organization has recently published report titled **Global report on Neglected Tropical Diseases 2024.**

Do you know

> Chad became 51st country to eliminate at least one NTDs by eliminating **sleeping sickness (Gambiense human African trypanosomiasis)**

More about the report

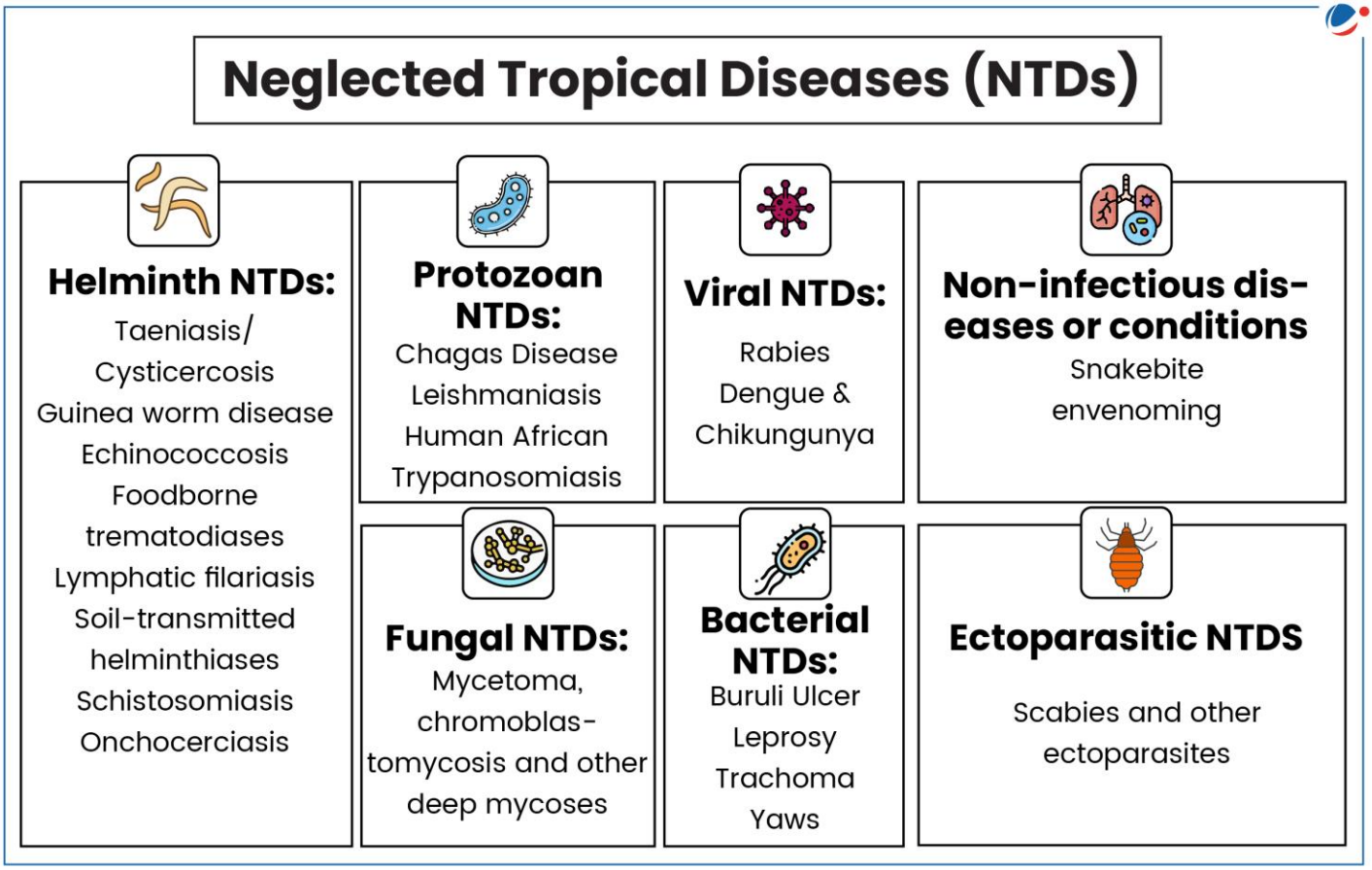
- The report offers an update to WHO member states and international partners on the advancements achieved in 2023 towards the implementation of the **Road map for neglected tropical diseases 2021–2030.**
- **Major Progress against road map indicators highlighted in report**
  - **Reduce the percentage of people requiring interventions against NTDs by 90% by 2030**.
    - ✓ In 2022, 1.62 billion people required interventions against NTDs, a **26% decrease from 2010.**
  - **Reduction in vector-borne NTDs related deaths by 75% by 2030.**
    - ✓ The number of deaths related to vector borne diseases **increased by 22% in 2022** compared with 2016.

- **100 % access** to at least **basic water supply, sanitation and hygiene** in areas endemic for neglected tropical diseases by **2030**.
  - ✓ In NTD endemic countries, **85.8%** have access to water/sanitation/hygiene overall, but only **63% of those requiring NTD interventions.**

- **Finding related to India**
  - **About 40% of people requiring interventions against NTDs in India, which is highest in the world**
  - **WHO certified India as free of Guinea Worm disease (2000) and Yaws (2016).**

Neglected Tropical Diseases (NTDs)

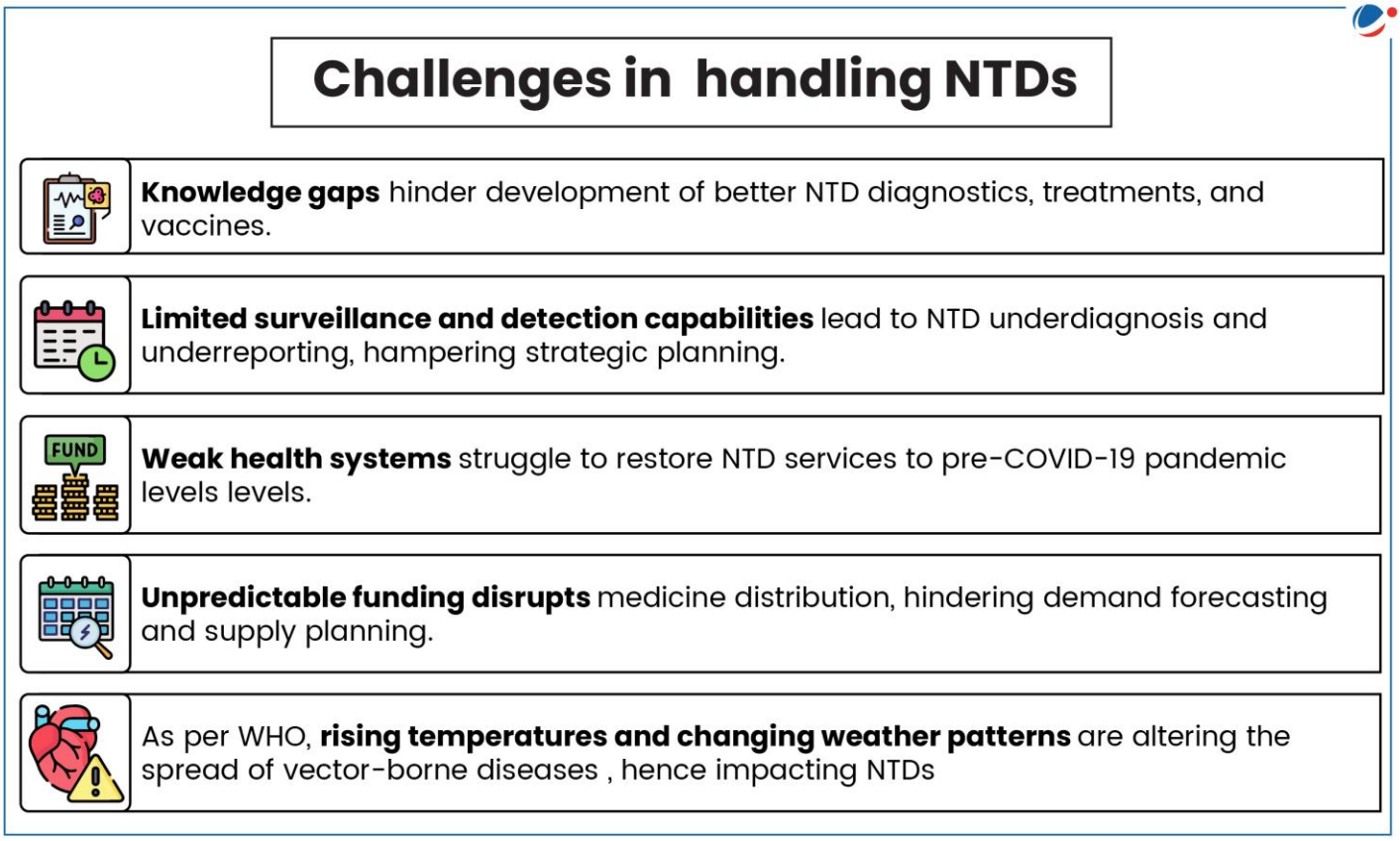
- NTDs are a diverse group of **conditions** mainly prevalent in tropical areas.
- They are caused by a variety of pathogens including **viruses, bacteria, parasites, fungi and toxins**.
- Called **Neglected** because they are almost absent from the global health agenda, Low global funding and associated with stigma and social exclusion.
  - NTDs have historically ranked very low and almost absent from the global health policy agenda – only to gain recognition in 2015 with the Sustainable Development Goals (SDG target 3.3).
- **India** has the world's largest **absolute burden of at least 10 major NTDs**- hookworm, dengue, lymphatic filariasis, leprosy, kala-azar and rabies, ascariasis, trichuriasis, trachoma and cysticercosis.



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.
  - NTDs disproportionately affect poorer nations, with 80% of the disease burden concentrated in low- and middle-income countries.
- **Socioeconomic Impact:** WHO estimates that eliminating NTDs by 2030 would save affected individuals over **$342 billion in healthcare costs and productivity losses.**

- **Indicator of Universal Health Coverage:** NTD interventions are often at the frontline of public health and are considered important steps on the path towards achieving universal health coverage by 2030.
- **Affecting Gender Equality:** NTDs can 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, increasing HIV risk and causing organ damage.
- **NTD control yields high returns:** An NTD investment case for ending NTDs published in 2017 estimated that preventive chemotherapy treatments yield $25 in benefits per $1 invested.



Steps Taken

- **Global**
    - **Global NTD Annual Reporting Form (GNARF):** Standardized document used by countries participating in the Global NTD Programme, introduced by WHO in 2023.
    - **Global vector control response 2017–2030 (GVCR):** Provides a new strategy to strengthen vector control worldwide through increased capacity, improved surveillance, better coordination and integrated action across sectors and diseases.
    - **Others: Kigali declaration on NTDs** (2022); Strengthening NTD structures and cross-sectoral collaboration; Public–Private Partnerships, etc.
- **India**
    - **National Vector Borne Diseases Control Programme (NVBDCP):** For prevention and control of vector borne diseases namely Malaria, Japanese Encephalitis, Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis.
    - **Others: Vector-control measures s**uch as **Indoor Residual Spraying rounds; Wage compensation schemes by** State and central governments to Kala-Azar patients, etc.

Way forward

- **Key recommendations given by 'Global report on neglected tropical diseases 2024'**
    - **Accelerate programmatic action(Pillar 1):** Reduce incidence, prevalence, morbidity, disability, and death

- **Intensify cross-cutting approaches (Pillar 2):** By Integrating interventions, mainstream services, and coordinate action on programmes.
- **Change operating models and culture (Pillar 3):** Increase country ownership and align stakeholders' roles to meet 2030 targets.

- **Integrating NTDs into the Broader Global Health Landscape**: Repositioning NTDs within the global health agenda by building links with other global programmes (e.g. health emergencies), crosscutting approaches (e.g. One Health), emerging global priorities (e.g. climate change).
- **Strengthen Regional Partnerships:** Help to handle NTDs effectively such as South-East Asia Region bears the highest burden of dog-mediated human rabies in the world, this can be effectively eliminated with regional cooperation.
- **Holistic multi-sectoral actions:** Need a comprehensive approach that includes veterinary public health, improved water and sanitation, expanded vaccine access, food safety measures, vector control, and effective communication strategies to eliminated NTDs.
- **Filling normative and operational gaps:** To ensure that strategic approaches are constantly refined to meet the challenges faced by programmes.
- **Increasing Funding:** Maintaining and expanding the partner/donor community, by nurturing existing relationships and creating new ones.

7.5. NEWS IN SHORTS

7.5.1. NEW CRISPR/CAS9 GENE-EDITING PLATFORM

SafeEXO-Cas, **exosome-based platform** has been developed by Scientists at Columbia University.

- **Exosomes** are naturally occurring vesicles (small cellular containers) that have the potential to be manipulated to become promising drug delivery vehicles for on-demand **in vitro** and **in vivo gene editing.**
- It significantly enhances the delivery of **CRISPR/Cas9** genome editing components to specific cells.
- It will also facilitate development of the **precision medicine** and will improve cancer treatment.
  - **Precision medicine** (aka personalized medicine) involves disease prevention and treatment that takes into account differences in people's genes, environments, and lifestyles.

About CRISPR/Cas9 Technology

- Clustered Regularly Interspaced Short Palindromic Repeats Associated protein 9 (CRISPR-Cas9) is a type of genome editing technology.
  - It is 105ecogniz to **change genetic code** or edit **Deoxyribonucleic acid (DNA)** at **particular locations**.
- **Working**:
  - Works as **cut and paste mechanism on DNA Strands**. Genetic codes that need to be changed are identified.
  - **Cas9 protein** is used as a **pair of molecular scissors to cut off a part from strand,** allowing modifications to the genome.

Applications of CRISPR: Edit genes in human embryo; Change **genetic codes of crops** to improve crop resilience; treating diseases like sickle cell disease etc.

7.5.2. DEEPTECH STARTUPS IN INDIA

India's Deeptech Dawn: Forging Ahead' Report released by NASSCOM.

Report highlights the different attributes of DeepTech startups.

Key findings

- Despite having the **3rd largest** pool of DeepTech startups, 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 (2023-2019)**.
  - In 2023, witnessed 77% decline in funding (in comparison to 2022).

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



Steps needs to be taken by Government

- Establish **co-investment programs** with venture capitalist for DeepTech startups.
- Introduce **government backed instruments**.
- 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.

7.5.3. ALPHAFOLD-3

Google DeepMind and Isomorphic Labs have developed a **new AI model, AlphaFold-3**, that can **predict structure of proteins, DNA, RNA, ligands**, etc., and how they interact.

About Alphafold-3

- It can **computationally predict the structure and interactions of all life's molecules** with unprecedented accuracy and speed.
- Given an input list of molecules (proteins, DNA, etc.), it **generates their joint 3D structure**, revealing how they all fit together.

It **can model chemical modifications** to the molecules which control the healthy functioning of cells, that when disrupted can lead to disease.

7.5.4. NUCLEAR TECHNOLOGIES FOR FOOD SAFETY

According to the FAO, nuclear technologies are important tools for food safety.

- Role of Nuclear technologies has been highlighted at the **International Symposium on Food Safety and Control**, held in Vienna, Austria.
- Event was organized by the **Food and Agriculture Organization (FAO)** and the **International Atomic Energy Agency (IAEA)**.

Nuclear technologies offer solutions to combat hunger, reduce malnutrition, enhance environmental sustainability etc.

- Also, technologies are complimentary to the **One Health approach.**
  - **One Health** is an integrated, unifying approach that aims to sustainably balance and optimize the health of **people, animals** and **ecosystems.**

Role of Nuclear Technologies in Food system

- **Animal health: Polymerase Chain Reaction (PCR) tests,** a molecular nuclear technique, will rapidly detect diseases.
- **Soil and water management: Radioactive nuclides** left behind after nuclear events can help scientists determine the **health of soil** and **rate of erosion**.
- **Insect pest management**: Nuclear based **Sterile Insect Technique (SIT)** to manage pest.
  - Technique involves **mass-rearing the insects** then sterilizing them through **ionizing radiation** before releasing them.
- **Food safety and control: Food irradiation** (the application of ionizing radiation to food) improves the safety and **extends the shelf life** of foods by reducing or eliminating microorganisms and insects.
- **Plant Breeding and Genetics:** Desired Genetic changes can be done by irradiation.



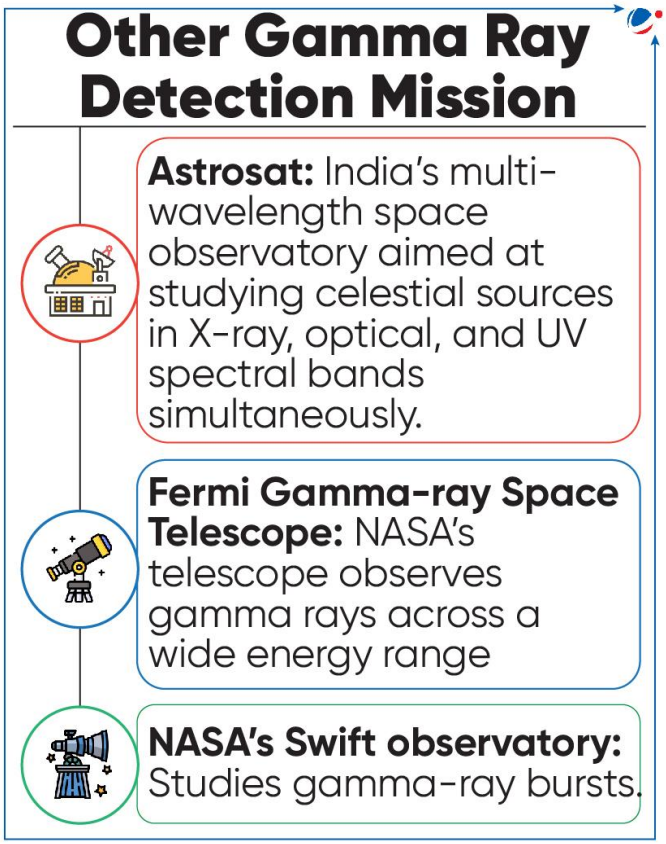
7.5.5. DAKSHA PROJECT

IIT Bombay leading the Daksha project

- It is leading in close collaboration with the **Physical Research Laboratory (PRL), Tata Institute of Fundamental Research (TIFR), Raman Research Institute (RRI)**, etc.

About the Daksha project

- It is 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.**
    - Will localize 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.**



7.5.6. TRISHNA: INDO-FRENCH THERMAL IMAGING MISSION

TRISHNA (Thermal Infra-Red Imaging Satellite for High-resolution Natural Resource Assessment) mission is a collaborative endeavor between ISRO and CNES (French Space Agency) to monitor surface temperature and water management at **regional to global scale**.

About TRISHNA Mission

- **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**: Provided by CNES, features a four-channel long-wave infrared imaging sensor.
  - **Visible – Near Infra-Red – Short Wave Infra-Red (VNIR-SWIR) payload:** Developed by ISRO, includes seven spectral bands designed for detailed mapping of surface reflectance.
- 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.

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.

7.5.7. EARTHCARE MISSION

Recently launched Earth Cloud Aerosol And Radiation Explorer (EarthCARE Mission) is a joint venture between the **European Space Agency (ESA)** and the **Japan Aerospace Exploration Agency (JAXA).**

- **Objective:** Provide a holistic view of complex interplay between **clouds**, **aerosols** and **radiation**, yielding new insight into **Earth's radiation balance** against the backdrop of the **climate crisis**.
- **Orbit Type:** Sun-synchronous
- **On-board Instruments:** Atmospheric Lidar, cloud profiling radar, multispectral imager (MSI), and broad-band radiometer.

Relationship between Clouds, Aerosol and Earth's Radiation Balance

- **Clouds:** Along with aerosols, clouds play key role in Earth's Heat Budget.
  - They can either **cool** or **warm** the Earth's surface by reflecting **incoming sunlight** or **trapping outgoing infrared** radiation.
  - The extent of clouds' warming or cooling effect on Earth depends on their shape, location, altitude, water content, and particle size.
- **Aerosols:** These are tiny particles such as **dust** and **pollutants** suspended in atmosphere.
  - Directly they **reflect** and **absorb solar radiation** and **trap** outgoing radiation.
  - And, indirectly they act as **nuclei for cloud formation**, which has a more substantial impact on the climate.
  - Human activities like industrialization, agriculture, etc. significantly **alter atmospheric aerosol concentrations**, impacting regional climate patterns.

7.5.8. SYMBIOTIC SYSTEM

NASA's Hubble Space Telescope observed the symbiotic system HM Sagittae (HM Sge) in Milky Way Galaxy.

About Symbiotic System:

- It is a type of **binary star system** that consists of a **white dwarf and a red giant**.
  - **White dwarf** is what stars become after they have exhausted their nuclear fuel.
  - **Red giant** is a dying star in the final stages of stellar evolution.
- Here, the **cooler red giant** loses material which flows onto the **hotter compact white dwarf star**.
  - The stolen material forms an **accretion disk** swirling around the white dwarf.

7.5.9. AMENDMENTS TO INTERNATIONAL HEALTH REGULATIONS (IHR)

The 77th annual **World Health Assembly (WHA)** meeting recently concluded with an agreement on a crucial set of amendments to the **IHR, 2005.**

- Also, decided to extend the mandate of the **Intergovernmental Negotiating Body** (established in 2021) to finish its work to negotiate a **Pandemic Agreement** within a year.

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

Key Amendments

- **Defining the Pandemic emergency** as a **communicable disease** that has a "wide geographical spread" or a high risk of one, and has exceeded or can exceed the ability of national health systems to respond.
- Establishing a **Coordinating Financial Mechanism** to address the needs and priorities of developing countries.
- Establish a **States Parties Committee** for effective IHR implementation.
- Create **National IHR Authorities** to improve coordination among countries.

7.5.10. WHO LAUNCHES ITS FIRST INVESTMENT ROUND

Investment Round has been launched at the **77th World Health Assembly (WHA).**

- **WHA** is a decision-making body of **World Health Organisation (WHO).** The theme of the Assembly is **All for Health, Health for All.**
- **Health for all** as a concept was evolved in the **Alma-Ata Declaration (1978)** of WHO to promote **Primary Health Care**.

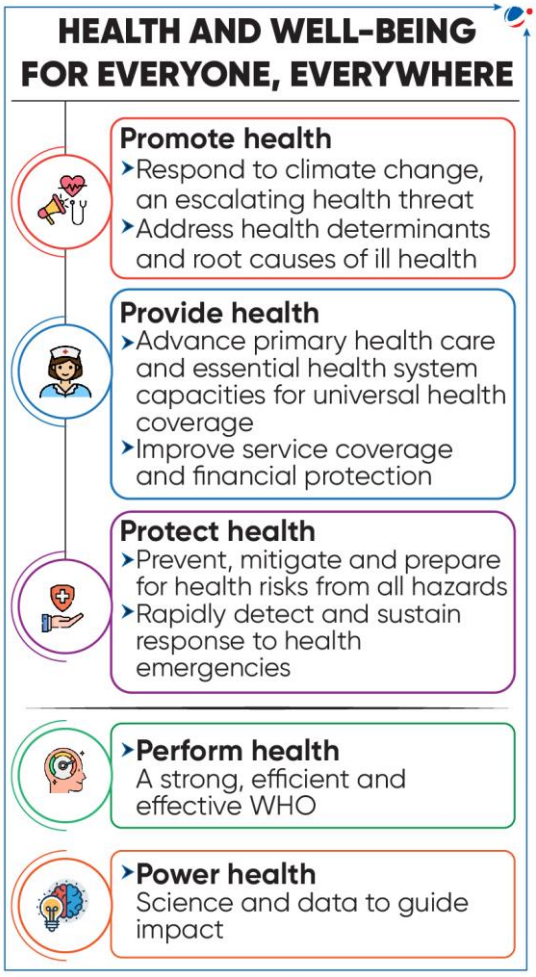
The Investment Round aims to mobilize resources for **WHO's core work for the next 4 years (2025-2028)** (refer image).

- Under it, **$ 7 Bn** will be **mobilized** to support the countries so that they can respond to health challenges.

Funding of WHO

- WHO receives funding from **two main sources-**
  - **Assessed contributions:** Due that **countries pay** to be a member of the Organization.
    - ✓ These are a **percentage of a country's GDP** as agreed by the UN General Assembly and **approved every two years.**
  - **Voluntary contributions: Comes from Members or from other partners**. Major source of **total funding.**
    - ✓ It is **further categorized** into Core voluntary contributions, Specified voluntary contributions etc.

Challenges in funding of WHO: Assessed contributions cover **less than 20% of the total budget**, Withdrawal of funding (E.g. Temporary suspension of funding by US) etc.



7.5.11. BIOPHARMACEUTICAL ALLIANCE

India, South Korea, the US, Japan, and European Union launched Biopharmaceutical Alliance in response to the drug supply shortages experienced during the COVID-19 pandemic.

- The announcement was made at the **inaugural meeting of the Biopharmaceutical Alliance** during the **Bio International Convention 2024**.

Significance

- Build a **reliable, sustainable, and resilient supply chain** in pharmaceuticals as production of essential raw materials and ingredients is concentrated in a few countries.
- **Coordinate bio policies, regulations, and R&D** support measures with the member countries.

7.5.12. RECOMBINANT PROTEINS

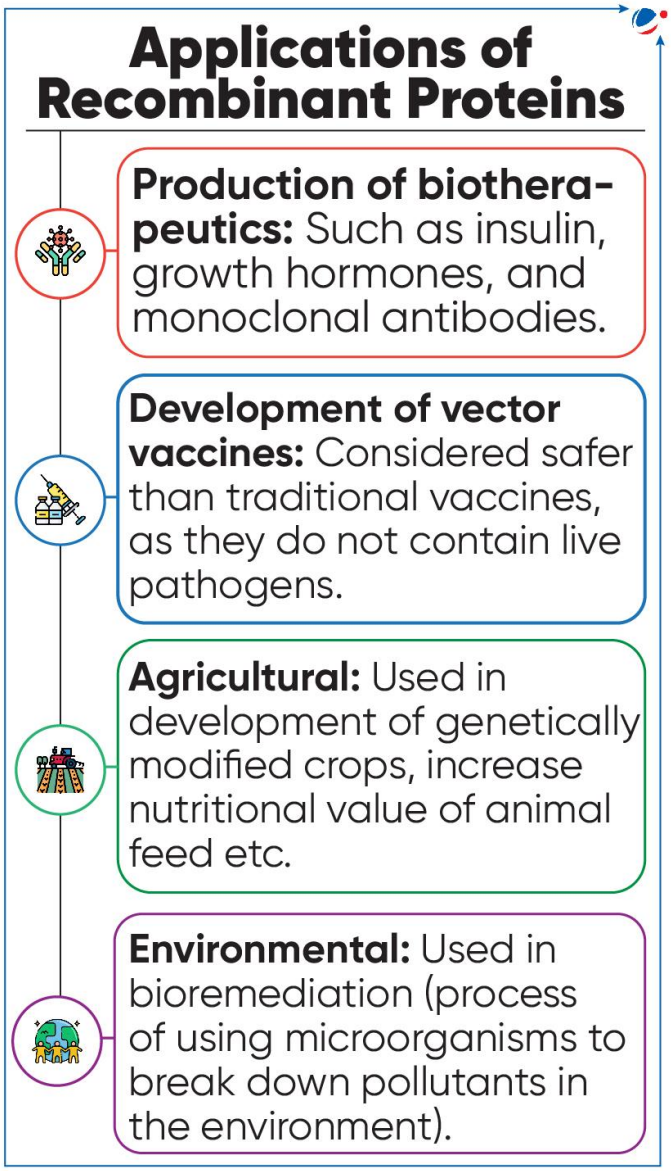
Researchers at Indian Institute of Science (IISc) have developed a **new process for production of recombinant proteins**.

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 **mono-sodium 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.



7.5.13. JUMPING GENES

New plant species (*Stellaria mcclintockiae*) from Kerala has been named after **Barbara McClintock** who won the Nobel Prize for her discovery of **Jumping Genes.**

About Jumping genes

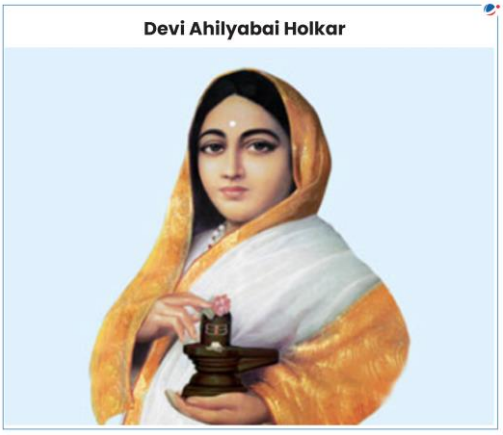
- **Jumping genes, aka transposable elements**, are DNA sequences that can move or "jump" from one location to another within the genome, causing nearby genes to become active or inactive.
- They can **replicate themselves and insert copies at new locations.**
- Their movement can **cause genetic mutations and contribute to genome evolution.**

QUIZ **SMART QUIZ**	You can scan this QR code to practice the Smart Quiz of Science & Technology at our open test online platform for testing your understanding and recalling of the concepts.	



8. CULTURE

8.1. DEVI AHILYABAI HOLKAR



Why in the News?

Recently, the 300th birth anniversary of Malwa queen Devi Ahilyabai Holkar was celebrated on May 31, 2024.

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** (her adopted son) as the commander of her army.
  - She established **Maheshwar** in Madhya Pradesh **as the seat of the Holkar dynasty.**

Key Contributions:

- **Temple Reconstruction:** The famous **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).
    - ✓ It was raided by **Mahmud Ghazni** (1024), and attacked by **Delhi Sultant** (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:** A well-organized tax system existed. **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.

8.2. NALANDA UNIVERSITY

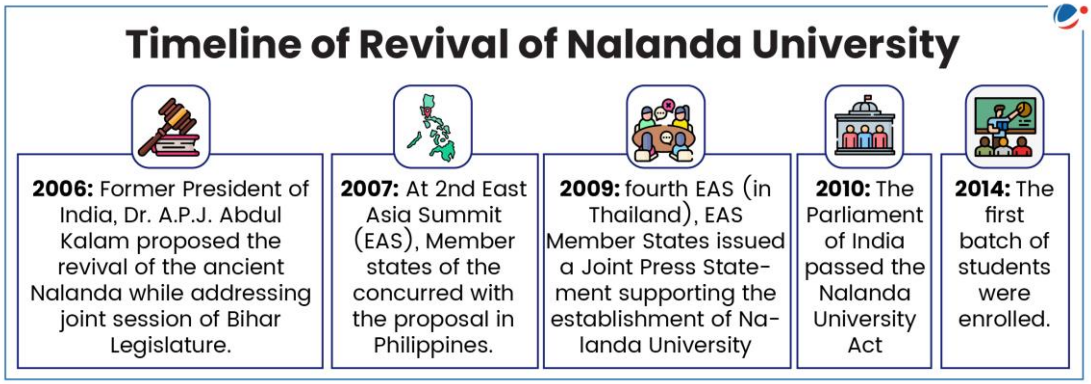
Why in the News?

Recently, the **Prime Minister inaugurated the new campus of Nalanda University in Rajgir (Bihar),** which is envisaged as a center for inter-civilizational dialogue.

About Nalanda University

- Modern **Nalanda University** is a **'Net Zero Green Campus'** featuring over 100 acres of water bodies known as Kamal Sagar ponds, an on-grid solar plant, and advanced water treatment facilities.
- It is located near the **ancient Nalanda ruins.**
  - **Bakhtiyar Khalji,** a Turkish general serving under Qutbuddin Aibak, **destroyed ancient Nalanda University it in 1205 AD.**
  - In the in the early 19th century, the site was discovered and reported by **Sir Francis Buchanan**.
  - in 20th Century, subsequently **systematic excavations** were done by **Archaeological Survey of India** (ASI) which **reignited interest in its revival.**
- The project **involves 17 participating countries**, including Australia, China, Singapore, and Vietnam.

About Ancient Nalanda University

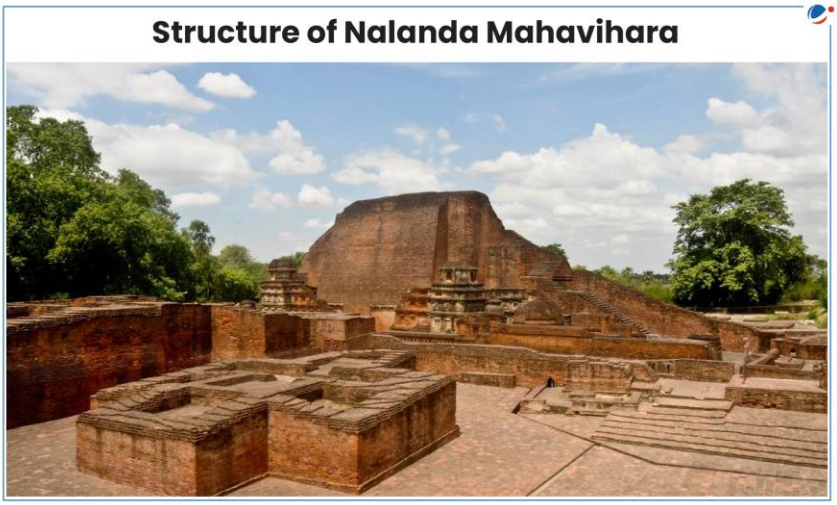


- **Oldest residential university in the world**: Nalanda was founded by **Kumargupta I** of the **Gupta dynasty** in **5th century CE.**
- **Patrons:** It was patronized by various rulers including **King Harshavardhana of Kannauj** (7th century CE), **Pala rulers** (8th – 12th century CE).
  - It is said that **King Asoka gave offerings to the Chaitya of Sariputra** at Nalanda and erected a temple there.
- **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**
  - **Aryabhatta:** The renowned mathematician and inventor of zero, **studied and taught at Nalanda.**
  - **Nagarjun**a: A Mahayana philosopher
  - **Dinnaga:** Founder of the school of Logic
  - **Dharmpala:** 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:**
  - Nalanda had attracted 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.
    - ✓ Xuan Zang also **carried back many hundred scriptures** which were later **translated into Chinese.**
- **Recognition:** The ruins of Nalanda were declared as a **UN World Heritage Site in 2016.**

Academic Excellence and Curriculum of Nalanda

- University **attracted scholars** from different parts of **world.**
- Admission to the university was **strictly by merit rigorous oral entry examination conducted by trained gatekeepers** who rejected those who did not pass.
- However, **no degree was granted** nor was a specific period of study required.
- There were **schools of study** in which students received explanations by discourse, and there were also **schools of debate**.
- It earned the title of **'Medieval School of Discussion and Logic'.**

- **Vedas**, all **three Buddhist doctrines** (Theravada, Mahayana, and Vajrayana), fine arts, medicine, mathematics, astronomy, politics, and the art of war were taught.
- The university's library, poetically named **"Dharma Gunj" or "Mountain of Truth,"** housed over nine million books across nine floors.



Architectural Features of Nalanda

- **Excavation Discoveries:** Numerous stupas, monasteries, hostels, staircases, meditation halls, lecture halls, and other structures.
- **Structure and Layout:**
  - Built in old **Kushan architectural style,** in a row of cells around a courtyard.
  - It had **axial planning** and **layout along north-south axis.**
  - Structural remains include **Viharas** (residential-cum-scholastic buildings) and **Chaityas** (temple-like structures).
  - Unique features include the **emergence and mainstreaming of chaityas with a quincunxial (five-fold) form,** replacing the traditionally dominant stupa and influencing regional Buddhist temples.
- **Architectural Significance**:
  - Nalanda is recognized as the **earliest planned university** in the Indian subcontinent.
  - Its art shows **thematic and iconographic assimilation** of features from major art centers of the subcontinent with local practices.
  - **Nalanda's stucco influenced Thai practices**, while its **metal art influenced** the **Malayan archipelago, Nepal, Myanmar, and Tibet through scholars.**
  - Its stucco, stone and metal art retain **iconographic features that enabled** changes in Buddhist belief system **and transition of Mahayana to Vajrayana.**



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**.
- **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**
  - Characterised by **distinctive facial features**, body forms and treatment of clothing and jewellery.
  - **Precisely executed sculptures have an ordered appearance** with little effect of crowding.
  - Sculptures are also usually not flat in relief but are depicted in **three-dimensional forms**.
  - The **back slabs of the sculptures** are detailed and the **ornamentations delicate**.
- **Metal**
  - **Time period:** The **Nalanda bronzes**, dating between **the seventh and eighth centuries t**o approximately **the twelfth** constitute a **large body of Pala Period metal sculptures**.

- **Synthesis:** Like their stone counterparts, the bronzes **initially relied heavily on Sarnath and Mathura Gupta traditions**.
- **Early Phase:** The Nalanda sculptures **initially depict Buddhist deities of the Mahayana** pantheon such as standing Buddhas, bodhisattvas such as Manjusri Kumara, Avalokiteshvara seated on a lotus and Naga-Nagarjuna.
- **Later Phases**: During the **late eleventh and twelveth centuries**, when Nalanda emerged as an important **tantric centre,** the repertoire came to be dominated by **Vajrayana deities** such as Vajrasharada (a form of Saraswati) Khasarpana, Avalokiteshvara, etc.

Conclusion

Nalanda is an icon of the Asian renaissance in the 21st century. It should be the center of civilizational dialogue and inter-faith understanding, as it once was." This vision of Nalanda as a bridge between cultures and faiths is more relevant than ever in our interconnected yet often divided world.

Other Buddhist Centres of Learning

Takshila	• Located in the **present-day Northwestern Pakistan**, discovered by Archaeologist **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	• Located near **Bhagalpur, Bihar**, it was established by the **King Dharmpala of Pala Dynasty.** • **Atisha Dipankara** (known for reviving Buddhism in Tibet) and **Vasubandhu** was a famous alumnus of Vikramshila.
Odantipuri	• 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	• Now located in **Andhra Pradesh.** • Named after **Nagarjuna,** profounder of the doctrine of **Sunyavada,** who belonged to **Mahayana Buddhism.**
Others	• **Valabhi** (Gujarat) • **Jagaddala** (now in Bangladesh)

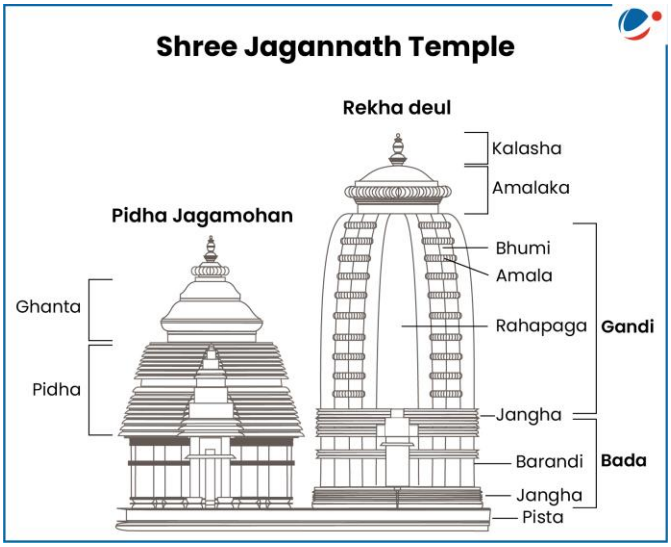
8.3. NEWS IN SHORTS

8.3.1. SHREE JAGANNATH TEMPLE

Odisha has opened all four doors **Shree Jagannath Temple** for devotees.

About Shree Jagannath Temple

- Located in **Puri, Odisha,** and also called as **White Pagoda**.
- **Dedicated to Lord Jagannath** (incarnation of Lord Vishnu), sister **Devi Subhadra** and elder brother **Lord Balabhadra** (holy trinity).
- Constructed by **Ganga Dynasty King Ananta Verman Chodaganga Deva.**
- One of **the four Char Dhams** (Dwarika, Badrinath & Rameswar) for pilgrimages in India.
- **Architecture style:** Kalinga Architecture.
  - It has **four component parts** consisting of Vimana or Deula (Garbhagriha), Jagamohana, Natamandapa and Bhogamandapa.
  - Architectural style of temple is a **combination of two types of temple structures**, i.e., **Rekha** and **Pidha**.



8.3.2. JYOTIRMATH OR JOSHIMATH

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.

8.3.3. SWAMI VIVEKANANDA

The Prime Minister recently visited the **Vivekananda Rock Memorial** and the **Tiruvalluvar statue** on the nearby rocks at **Kanyakumari (Tamil Nadu).**

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.**

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**
  - **Father:** Vishwanath Datta
  - **Mother:** Bhuvaneshwari Devi
- **Spiritual Guru:** Sri Ramakrishn
- **Prominent discipls**: Margaret Noble (Sister Nivedita)

Contributions and Legacy

- **Preached Vedant philosophy: Utttara Mimāṁsā** is **called Vedānta.** It incorporates **Advaita system, Viśiṣṭādvaita 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.**



8.3.4. BAVIKONDA MONASTERY

Due to budget constraints in recent years, Bavikonda maintenance and repairs at the site remain suboptimal.

- It is part of the 'Shalihundam-Thotlakonda-Bavikonda- Bojjanakonda- Amravati- Anupu in Andhra Pradesh' **Buddhist Circuit under the Swadesh Darshan Scheme.**
  - Swadesh Darshan Scheme was **launched in 2015 by the Ministry of Tourism** to develop sustainable and responsible tourism destinations in the country.

About

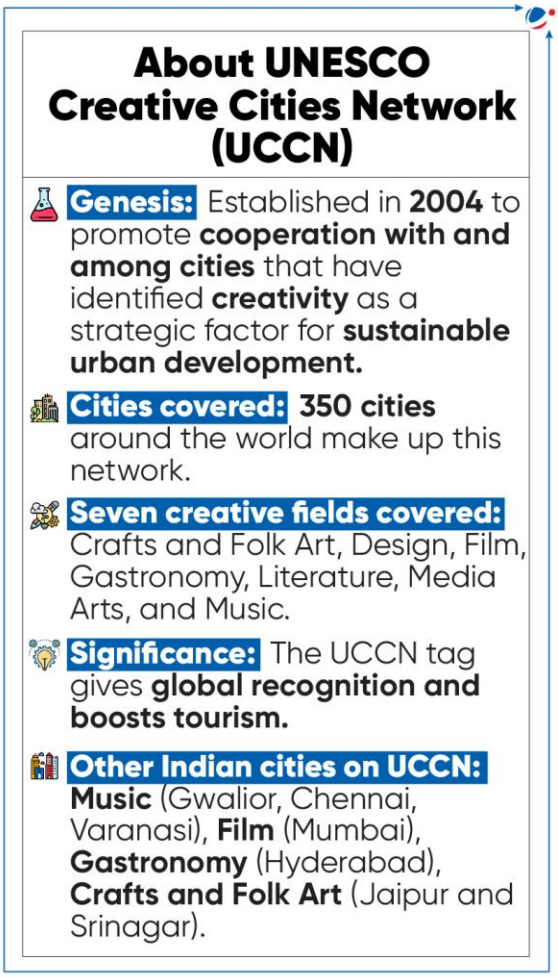
- Bavikonda is located near Visakhapatnam, Andhra Pradesh.
- The name 'Bavikonda' means a hill of wells as earlier the place **had several wells where rainwater used to be stored.**
- Bavikonda Monastery dates back to the **3rd century BCE.**
  - It has a **Theravada** (Hinayana Buddhism) **Buddhist comple**x with structures like a **Mahastupa, Acharya Vihara,** Chaitya Griha, Buddha Pada platforms, **and votive stupas.**

8.3.5. KOZHIKODE: INDIA'S FIRST 'CITY OF LITERATURE'

Kerala celebrates Kozhikode's recognition as India's first UNESCO 'City of Literature'.

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 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 librarie**s 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.

8.3.6. WORLD CRAFT CITY (WCC)

Srinagar has been recognized as a '**World Craft City'** by World Crafts Council.

- This recognition would **boost the handloom and handicraft sector, benefit tourism, foster infrastructure development,** attract greater investment and funding, etc.
- Council was founded in 1964 to empower artisans and safeguard craft heritage globally.

About WCC

- Launched **in 2014 by World Crafts Council-International**.
- Establishes a **dynamic network of craft cities** across the globe, aligning with the principles of **creative economy.**
- Recognizes role of **local authorities, craftspeople, and communities** in cultural, economic, and social development worldwide.

8.3.7. UNESCO'S PRIX VERSAILLES AWARD

'Smritivan Earthquake Memorial Museum', India's **largest memorial and museum,** 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** align 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'**.**

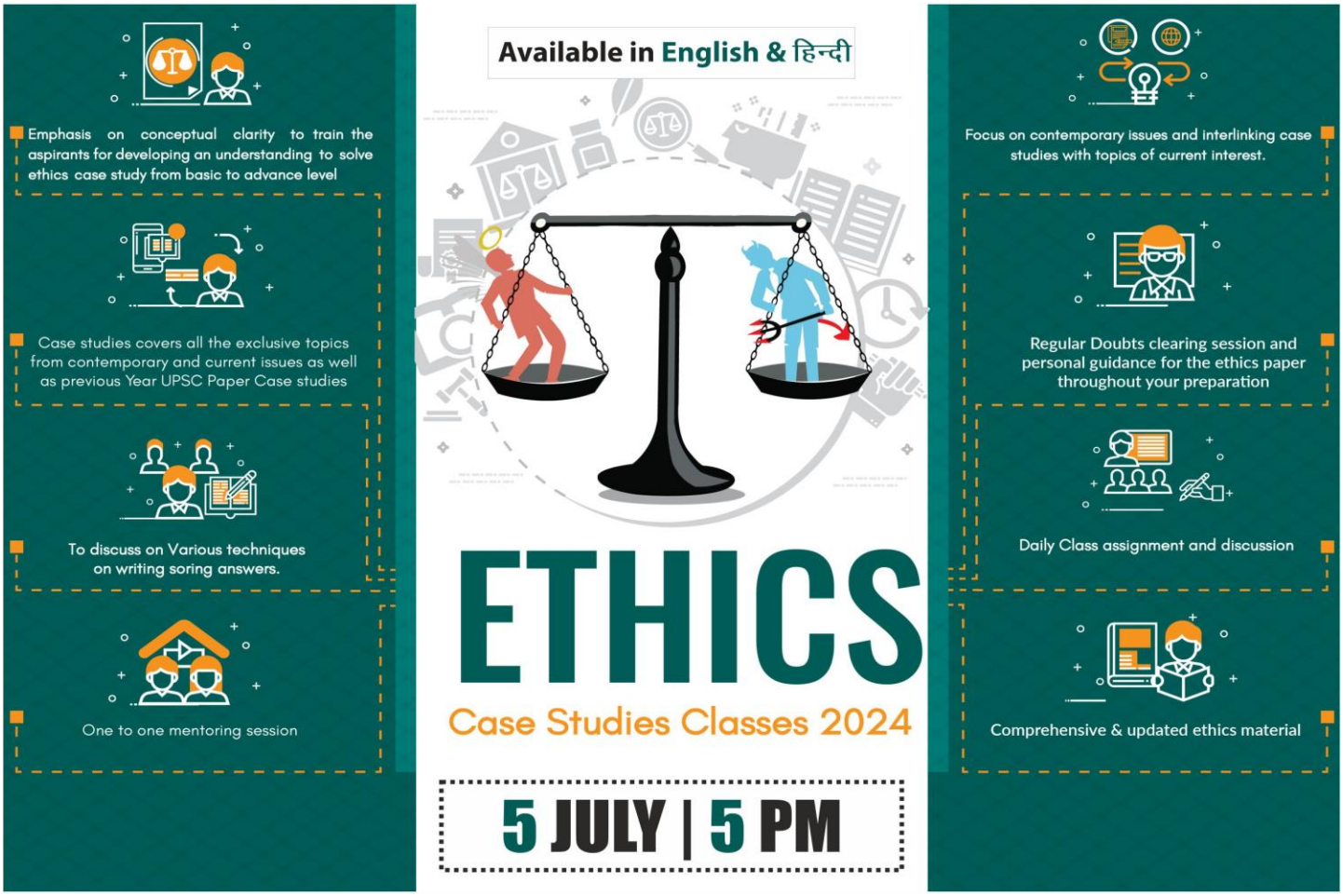
About Smritivan Earthquake Memorial Museum

- **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.

QUIZ

SMART QUIZ

You can scan this QR code to practice the Smart Quiz of Culture at our open test online platform for testing your understanding and recalling of the concepts.



9. ETHICS

9.1. ETHICS OF WHISTLEBLOWING

Introduction

Recently, Julian Assange was freed by the US Court in WikiLeaks espionage case. WikiLeaks serves as a **whistleblower platform** over the internet. From Edward Snowden to Satyendra Dubey, many whistleblowers have acted on their conscience, but have their acts always been ethical?

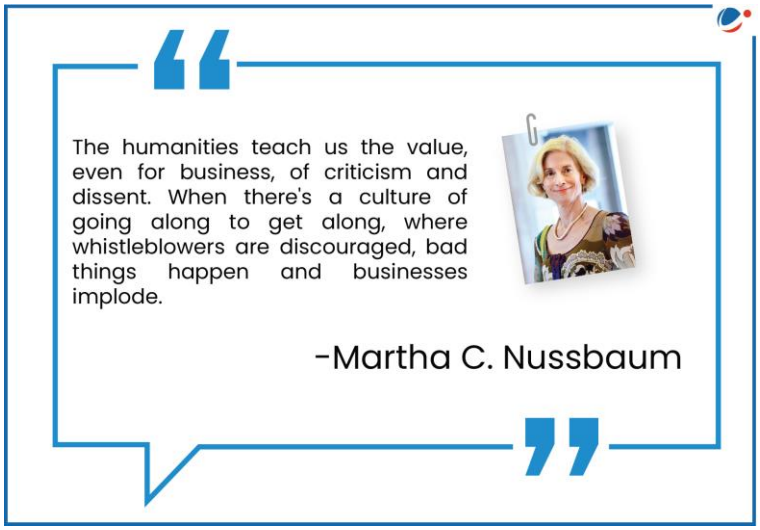
What is Whistleblowing?

- **Definition:** It is the **disclosure of information** to the public or some higher authority about any wrongdoing, which could be in the form of a fraud, corruption, etc. in a company or government.
  - Whistleblower is the person who reports/discloses the wrongdoing or the unethical act. E.g., Late Shanmugam Manjunath among others.
- **Types of Whistleblowers/ Whistleblowing-**
  - **Internal**: Reporting the misconduct, fraud, or indiscipline to senior officers of the organization such as Head of Human Resources or CEO.
  - **External**: Reporting the wrongdoings to people outside the organization such as the media, higher government officials, or police.

Stakeholders and Their Interests

Stakeholder	Interests
Whistleblower	Exposing wrongdoing or misconduct 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 Interests	Promoting transparency and accountability and supporting whistleblowers.

Ethical dilemmas involved in Whistleblowing



- **Protection of whistleblowers vs. National security:** Balance between safeguarding individuals who expose wrongdoing and ensuring government responsibility while considering threats to national security.
- **Media responsibility vs. Ethical Information handling:** The media has a moral duty to tell the people about government action while handling dangerous or sensitive information in a responsible manner.
  - **Information Ethics** concerns with moral issues arising from the creation, collection, organization, access, and use of information arising out of whistleblowing.
- **Public right to information vs. Government need for confidentiality:** Balance between citizens' right to know about government's actions and the 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 and Ensuring accountability for false or malicious reporting.

Laws to protect Whistleblowers in India

- **Whistleblowers Protection Act, 2014:** It's the primary legislation aimed at protecting whistleblowers in India. It safeguards against victimization of persons who make public interest disclosures.
- **The Companies Act, 2013 (Section 177)**: Stipulates listed companies to establish a vigil mechanism for directors and employees to report genuine concerns.
- **SEBI (Securities and Exchange Board of India) Regulations, 2015:** SEBI has mandated listed companies to frame whistleblower policies.
- **Guidelines for Corporate Governance for Insurers in India: Guidelines issued by IRDAI** advise companies regulated by it to set up a 'Whistle Blower Policy'.
- **Protected Disclosures Scheme for Private Sector and Foreign Banks**: Scheme of RBI wherein the banks are required to formulate a whistleblower policy/vigil mechanism.

Indian laws/rules to protect government secret information

- **The Official Secrets Act, 1923:** It provides the framework for **dealing with espionage, sedition, and other potential threats** to the integrity of the nation.
- **Rule 11 of Central Civil Services (Conduct) Rules, 1964:** It deals with the Communication of Official Information by the government servants.
- **Section 8(1) in The Right to Information Act, 2005:** It gives exemption from disclosure of information which would prejudicially affect the sovereignty and integrity of India.

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 participate in global initiatives to protect cross-border whistleblowers.
- **Media Protection:** 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 at the same time maintain secrecy about national security.

Case study

An honest and dedicated civil servant working in the public work department comes across the gross irregularities in the construction of road in border areas. On the further investigation, he found that there is a nexus between other officials with local contractors who use sub-standard material for the construction. On the completion of construction, road is supposed to serve the military. It would facilitate the smoother movement of troops in the time of emergency and contribute to the national security. However, complaining about the irregulars to higher authorities or exposing in the media would delay the project and he may face threat of retaliation from associated stakeholders.

On the basis of the above case study, answer the following questions:

- Identify various stakeholders and their interests involved.
- Discuss ethical issues involved in the case and discuss the options available to the civil servant with their merits and demerits.

9.2. FRAUDS IN CIVIL SERVICES EXAMINATION

Introduction

Recently, some civil servants have been alleged of faking certificates to enter into prestigious civil services. Also, cases have surfaced where aspiring Civil Servants have used ChatGPT to cheat in the examination. Such issues point to the increasing instances of fraud and dishonesty in Civil Services Examination.

Stakeholders	Role/Interests
Recruiting agencies (such as UPSC)	• Fair and open competition, loss of trust reposed by public, Constitutional obligations.
Public at large	• Credibility and transparency of selection process, Faith on 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	Aspiring Civil Servants are expected to uphold the standards of Civil Services when engaging in the examination process. These values have been codified by **All India Services (Conduct) Rules, 1968** and **PC Hota Committee** among others. These values include **Integrity, honesty, objectivity, impartiality, transparency, accountability and merit and excellence** among others.

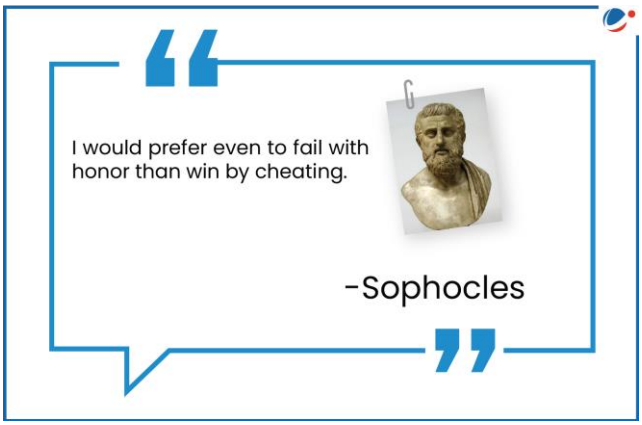
Ethical Issues Involved

- **Detrimental to Social Justice: Use of fake certificates can lead to** questioning the validity and fairness of affirmative actions, thereby hurting cause of social justice.
- **Administrative implications: Entry of unethical candidates in civil services** can lead to Corruption and dishonesty, Inefficient Bureaucracy, abuse of power and not adhering to the conduct rules.
- **Against Kant's Categorical Imperative & Deontology:** As per Immanuel Kant's categorical imperative one should only **act in accordance with rules** that could hold for everyone.
- **Violates Utilitarianism:** Under utilitarianism, morality of an action is determined solely through assessment of its consequences. Since cheating/abuse of power is detrimental to society at large, it is unethical to do so.
- **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:** Ethics was introduced in 2013 as a recruitment filter in civil services. Paper evaluates the ethical competence of candidates.
- **Public Examinations (Prevention of Unfair Means) Act, 2024:** Aims to **prevent the use of** unfair means in public examinations and bring greater transparency, fairness and credibility **to public examinations like UPSC, SSC,** etc.
- **Use of digital technologies by UPSC to deter cheating:**
  - UPSC plans to use Aadhaar-based fingerprint authentication, facial recognition.
  - CCTV surveillance using AI to check impersonation

Way forward



- **Values like honesty, integrity, truthfulness & self-dignity** should be inculcated among students from the very beginning of education, to deter such instances in future.
- **Exam Reforms:**
  - **Stringent verification processes after selection of candidates**
  - **Stringent measures rooted in ethics** to curb examination malpractices, promoting merit and fairness.
  - **Aptitude and leadership tests** may be introduced for selection to curb abuse of power during civil servant deputation **(Hota Committee).**
  - **Technologically based solutions:** New strategies need to be considered and employed to better manage the advancement of technology use for illegitimate purposes.
- **Revised Conduct Rules:** Regular review and updates of the rules can help 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.

Check your ethical aptitude

The Education Secretary of a state comes across gross irregularities in the recent State Public Service Examination. Further investigation reveals a nexus between examination officials and some candidates who used unfair means to pass the examination. This examination is crucial as it recruits candidates for various civil services in the state. Ensuring the integrity of this examination is essential for maintaining the quality and credibility of the state's administration. However, exposing this scandal to the public or higher authorities could delay the recruitment process and tarnish the image of the public service commission.

On the basis of the above case study, answer the following questions:

- Identify various stakeholders and their interests involved.
- Discuss the ethical issues involved in the case and the course of action Education Secretary should take.



10. SCHEMES IN NEWS

10.1. PRADHAN MANTRI AWAAS YOJANA

Why in the News?

Union government expanded the Pradhan Mantri Awaas Yojana and construct **3 crore additional rural and urban houses.**

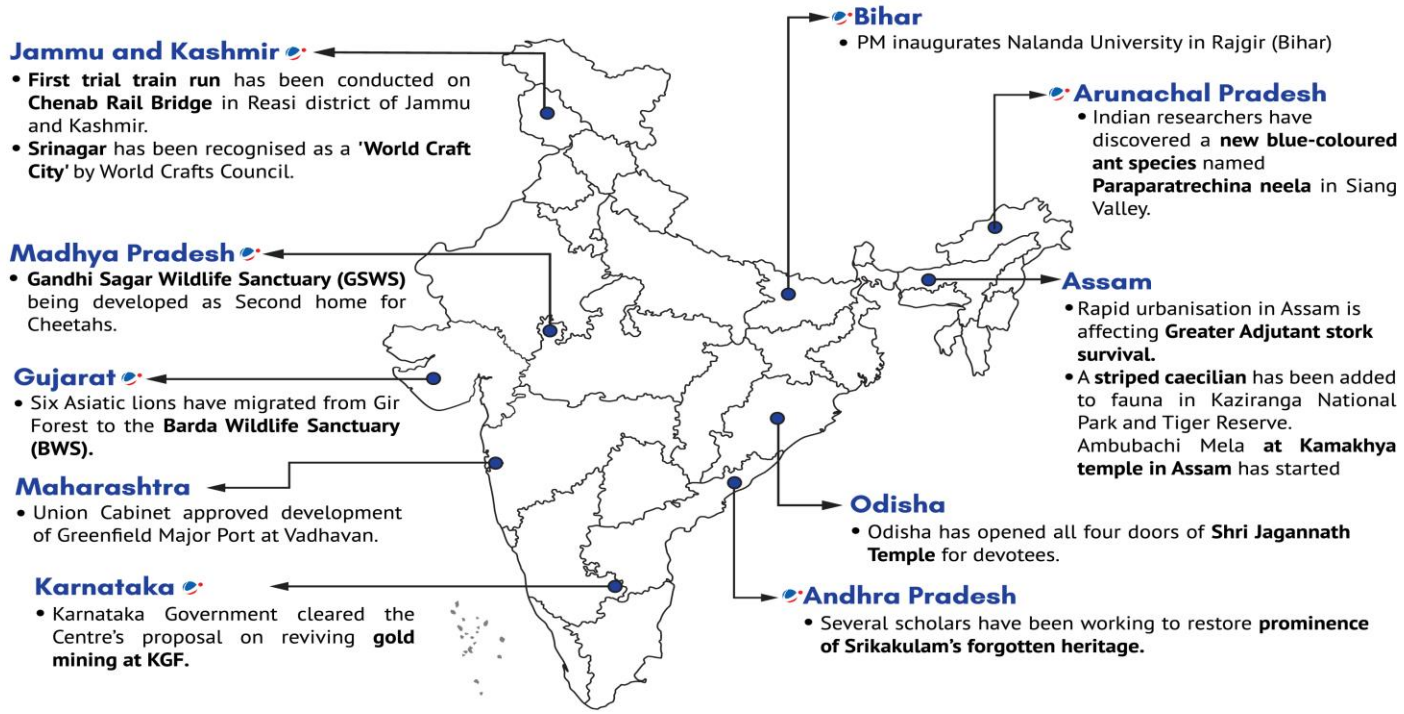
Parameters	PMAY- Urban	PMAY- Rural
Objectives	• **To address the urban housing shortage** among Economically Weaker Section (EWS)/ Lower Income Group (LIG) and Middle-Income Group (MIG) categories including the slum dwellers by ensuring a pucca house.	• Providing a **pucca house**, with basic amenities, to all houseless households and those households living in kutcha and dilapidated house by **2024**
Type	• **Centrally Sponsored Scheme** except for CLSS vertical (Central Sector).	• **Centrally Sponsored Scheme**
Nodal Ministry	• Ministry of Housing and Urban Affairs (MoHUA).	• Ministry of Rural development
Launch year	**2015**	**2016**
Beneficiaries	• **Economically Weaker Section (EWS):** Annual household income up to Rs. 3 Lakh. Eligible for all four verticals • **Low Income Group (LIG):** Annual household income from 3-6 Lakh. Eligible only under CLSS • **Middle Income Group (MIG):** Annual household income from Rs. 6-18 Lakh. Eligible only under CLSS. • The beneficiary family should not own a pucca house in his/ her name or in the name of any member of his/her family in any part of India.	• It selects beneficiaries using housing deprivation parameters in the Socio Economic and Caste Census (SECC) 2011 data and from finalized Awaas+ list subject to due verification by Gram Sabha and Appellate process thereafter • **Landless beneficiary:** State shall ensure that the beneficiary is provided land from the government land or any other land including public land (Panchayat common land, community land or land belonging to other local authorities).
Women Empowerment	• Mandating that the female head of the family be the owner or co-owner of the house.	• Mandating that the female head of the family be the owner or co-owner of the house.
Benefits Provided Under Various Schemes	• **Beneficiary Led Construction:** GoI grant @ 1.5 Lakh per house. • **Affordable Housing in Partnership**: GoI grant @ 1.5 Lakh per house • **In-Situ Slum Redevelopment:** GoI grant @ 1.0 Lakh per house • **Credit Linked Subsidy Scheme:** Benefits upto 2.67 Lakh on housing loan • States/ UTs to **ensure convergence with relevant schemes** such as Swachh Bharat Mission (U), National Urban Livelihood Mission, Solar Mission etc. in housing projects to be undertaken under this Mission.	• Unit assistance of **Rs. 1.20 lakh in plains** and **Rs.1.30 lakh** in hilly States/UTs, North Eastern States, difficult areas, and worst Left-Wing Extremism (LWE) districts. • Provision of **90/95 person days of un-skilled labour wage under MGNREGA** for construction of house, over and above the unit assistance. This amounts to **about Rs 18,000/.** • **Provision of assistance (Rs.12,000/-)** for toilets through convergence with SBM-G. • The PMAY-G households are also provided **water, LPG, and electricity connections** in convergence with other relevant schemes.
Coverage	• All Statutory towns and Notified Planning Areas covered	• All over Country

Achievements	• 83.67 lakh houses completed	• 2.62 Crore houses completed
IT Enabled Monitoring	• **PMAY-U Dashboard** and **five-staged geo-tagging** of each house/ project for monitoring the progress of construction.	• **AwaasSoft:** Bi-lingual (Hindi & English), transactional web based electronic service delivery platform to facilitate e-Governance in PMAY-G. • **AwaasApp:** A mobile application is to be used to monitor real time, evidence based progress of house construction through date and time stamped and geo-referenced photographs of the house.
Funding	• Public expenditure (**40%)** and private investment including beneficiary contribution (**60%).**	• **60:40** in Plain areas. • **90:10** for North-Eastern and 2 Hill States (Himachal Pradesh and Uttarakhand) and UT of Jammu and Kashmir. • **100%** by the central government in other UTs.
Grievance Redressal system	• To be set up at both State and City level to address the grievances in implementing the Mission from various stakeholders.	• Set up at different levels of administration viz., Gram Panchayat, Block, District and the State. • Designated officials at each level must resolve grievances or complaints **within 15 days of receipt**, ensuring prompt response to concerns.
Others	• **Affordable Rental Housing Complexes (ARHCs), sub Schemes under PMAY-Urban,** aims at providing ease of living to urban migrants/ poor to get access to dignified affordable rental housing close to their workplace. • **Global Housing Technology Challenge – India (GHTC-India)** was initiated to identify and mainstream globally best available proven construction technologies that are rapid, sustainable, green and disaster resilient.	• **Greening of PMAY-G:** Promotes green, locally-adapted housing designs using regional materials to reduce carbon footprint, enhance comfort, and contribute to a cleaner India.

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11. PLACES IN NEWS

India



Jammu and Kashmir
- **First trial train run** has been conducted on **Chenab Rail Bridge** in Reasi district of Jammu and Kashmir.
- **Srinagar** has been recognised as a **'World Craft City'** by World Crafts Council.

Bihar
- PM inaugurates Nalanda University in Rajgir (Bihar)

Arunachal Pradesh
- Indian researchers have discovered a **new blue-coloured ant species** named **Paraparatrechina neela** in Siang Valley.

Madhya Pradesh
- **Gandhi Sagar Wildlife Sanctuary (GSWS)** being developed as Second home for Cheetahs.

Assam
- Rapid urbanisation in Assam is affecting **Greater Adjutant stork survival.**
- A **striped caecilian** has been added to fauna in Kaziranga National Park and Tiger Reserve.
- Ambubachi Mela **at Kamakhya temple in Assam** has started

Gujarat
- Six Asiatic lions have migrated from Gir Forest to the **Barda Wildlife Sanctuary (BWS).**

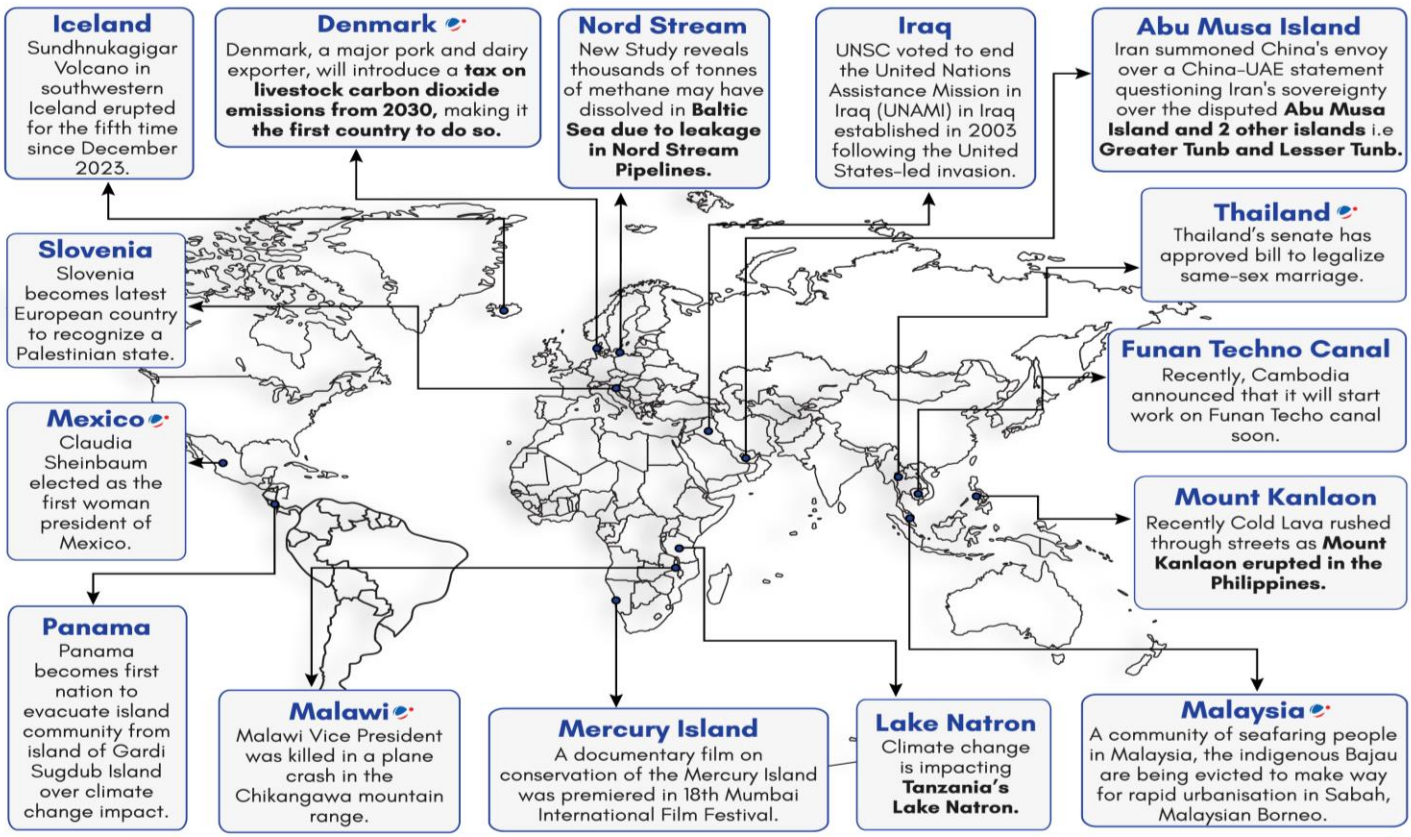
Maharashtra
- Union Cabinet approved development of Greenfield Major Port at Vadhavan.

Odisha
- Odisha has opened all four doors of **Shri Jagannath Temple** for devotees.

Karnataka
- Karnataka Government cleared the Centre's proposal on reviving **gold mining at KGF.**

Andhra Pradesh
- Several scholars have been working to restore **prominence of Srikakulam's forgotten heritage.**

World



Iceland
Sundhnukagigar Volcano in southwestern Iceland erupted for the fifth time since December 2023.

Denmark
Denmark, a major pork and dairy exporter, will introduce a **tax on livestock carbon dioxide emissions from 2030,** making it **the first country to do so.**

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

Iraq
UNSC voted to end the United Nations Assistance Mission in Iraq (UNAMI) in Iraq established in 2003 following the United States-led invasion.

Abu Musa Island
Iran summoned China's envoy over a China-UAE statement questioning Iran's sovereignty over the disputed **Abu Musa Island and 2 other islands** i.e **Greater Tunb and Lesser Tunb.**

Thailand
Thailand's senate has approved bill to legalize same-sex marriage.

Slovenia
Slovenia becomes latest European country to recognize a Palestinian state.

Funan Techno Canal
Recently, Cambodia announced that it will start work on Funan Techo canal soon.

Mexico
Claudia Sheinbaum elected as the first woman president of Mexico.

Mount Kanlaon
Recently Cold Lava rushed through streets as **Mount Kanlaon erupted in the Philippines.**

Panama
Panama becomes first nation to evacuate island community from island of Gardi Sugdub Island over climate change impact.

Malawi
Malawi Vice President was killed in a plane crash in the Chikangawa mountain range.

Mercury Island
A documentary film on conservation of the Mercury Island was premiered in 18th Mumbai International Film Festival.

Lake Natron
Climate change is impacting **Tanzania's Lake Natron.**

Malaysia
A community of seafaring people in Malaysia, the indigenous Bajau are being evicted to make way for rapid urbanisation in Sabah, Malaysian Borneo.

12. PERSONALITIES IN NEWS

Personality	About	Ethical Values exhibited by the Personality
 **Sant Kabir Das (1398–1518)**	• Prime Minister paid tribute on the birth anniversary of Sant Kabir Das **Sant Kabir Das** **Early life** • It is believed he was **born a Hindu** but was **raised by a poor Muslim weaver family.** • He was **likely initiated into the Bhakti movement by a guru,** possibly Ramananda. • He advocated **Nirguna (God as formless) path.** • **Literary work:** His verses are compiled in three traditions: **Bijak** (Kabirpanth), **Granthavali** (Dadupanth) and many other compositions are in the **Adi Granth Sahib** • **Languages: Sant bhasha** (the language of Nirguna poets); **Ulatbansi** (upside-down sayings)	**Social critique and dissent** • His work mainly consists of verses critiquing the social customs and existing values particularly caste and religious dogmatism. • His poems highlighted the role of dissent as having political and ethical value which can lead to refinement of values in social life.
 **Rana Punja Bhil**	**Rana Punja Bhil** • Rana Punja Bhil was a tribal leader belonging to the Bhil tribe. • He was a contemporary of Maharana Pratap, the 16th-century ruler of Mewar. **Key Contributions:** • He led the guerilla warfare and restricted Mughal advances in Battle of Haldighati (1576) between Maharana Pratap and Mughal emperor Akbar. • Maharana Pratap bestowed him with the title of "Rana."	**Bravery and Loyalty** • Demonstrated exceptional courage and leadership in the Battle of Haldighati, effectively resisting Mughal advances. • Showed unwavering loyalty to Maharana Pratap by standing firm against the Mughal forces.
 **Raghoji Bhangre (1805-1848)**	**The Ministry of Tribal Affairs** observes Raghoji Bhangre's martyrdom. **About Raghoji Bhangre** • He was a tribal leader born in Devgaon village of the Ahmednagar district, in present-day Maharashtra. • He was from the Koli community. He was the son of Ramji Rao Bhangre who also resisted British rule and was subsequently hanged in Cellular Jail.	**Resistance and Courage** • Showed staunch opposition to colonial oppression by leading a campaign against exploitative moneylenders and British rule, standing up for the rights of his community.

	Key contributions: • Bhangre led a campaign against exploitative moneylenders and colonial rule. • Led Koli community against the exploitative British government. • He was eventually captured in 1847 and later hanged.	• Showed staunch opposition to colonial oppression by leading a campaign against exploitative moneylenders and British rule, standing up for the rights of his community.
 **Bhagwan Birsa Munda** **(1875 - 1900)**	Freedom fighter and tribal leader Birsa Munda was remembered on his death anniversary. **About Bhagwan Birsa Munda** • He was born in the Munda tribe at Ulihatu, Khunti district of the Chotanagpur Plateau region (Jharkhand). • Also known as **'Dharti Aaba'.** **Contributions** • Started faith of Birsait and stressed the importance of prayer, staying away from alcohol, and having faith in God. • Started a movement called 'Ulgulan (The Great Tumult)' against the exploitation of tribals by local authorities. • This led to the enactment of the Chotanagpur Tenancy Act (1908) which restricted the transfer of land from tribal people to non-tribals. **Legacy** • His birth anniversary (on 15th November) is celebrated as Janjatiya Gaurav Divas.	**Justice and Resilience** • He was a visionary who played a crucial role in the liberation of his community. • He was an Indian tribal freedom fighter who showed extraordinary courage by leading the revolts of his tribesman against the Britishers and powerful landlords.
 **Narayan Malhar Jaoshi** **(1879 - 1955)**	Recently, **Narayan Malhar Joshi** was remembered on his birth anniversary. **About N.M. Joshi (Nana Saheb Joshi)** • He was a **trade unionist and freedom fighter** born in Maharashtra. **Key Contributions** • Represented India at **first International Labour Conference** in 1919. • **Associated organizations: Established Social Service League** in 1911. ▸ Co-founded **All India Trade Union Congress** in 1920 and helped establish **Bombay Textile Labour Union.** ▸ Prominent member of **Bombay Provincial Congress Committee, People's Volunteer Brigade and Servants of India Society.** • Known for his work in **Royal Commission on Labour in India** (Describing conditions of workers).	**Empowerment and Social Responsibility** • Empowered workers by providing a platform for laborers to voice their concerns and seek justice. • He aimed at improving societal conditions and supporting the working class.



Taraknath Das (15th June, 1884- 22nd December, 1958)

The birth anniversary of Shri Taraknath Das was celebrated.

About Taraknath Das

- Born in North 24 Pargana, Bengal, Shri Das was a journalist, teacher, philanthropist and revolutionary.

Contribution

- In 1903, he joined the revolutionary organisation **Anushilan Samiti** (established by Satish Chandra Bose and Praanath Mitra in Kolkata).

  Started an anti-British newspaper, **'Free Hindusthan' in the USA.**
- In 1913, he was associated with the **Ghadar Movement.**
- Implicated in the **Indo-German conspiracy case in 1917.**
- **Established Taraknath Das Foundation** in 1935, to promote educational activities, to foster cultural relations between the US and Asian countries

Global Perspective and Nationalism

- His ability to connect the Indian independence movement with international audiences.
- His unwavering commitment to India's independence and efforts to promote its cause internationally.



Rash Behari Bose (1886-1945)

Prominent revolutionary leader of India's freedom struggle Rash Behari Bose was remembered on his birth anniversary (May 25).

About Rash Behari Bose

- Born in **Bardhaman district (Bengal).**
- Was deeply inspired by the **French Revolution of 1789.**

Key Contributions

- Was an active member of **Yugantar group of revolutionaries** under leadership of Motilal Roy.
- Acted as an **effective link between revolutionaries of Punjab and United Provinces and Bengal.**
- Involved in **Delhi Conspiracy case** (bomb attack on Viceroy Lord Hardinge), 1912.
- Founded the **Indian independence League** (1942) in Tokyo.
- Played key role in **Gadar Movement** and in formation **Azad hind fauj (Indian National Army).**

Patriotism and Unity

- His deep commitment to India's independence was evident through his involvement in revolutionary activities and his pivotal role in the formation of the Azad Hind Fauj.
- He effectively bridged regional divides among revolutionaries, demonstrating his belief in unity and collaboration across different groups for the common goal of India's freedom.



Ramprasad Bismil (1897-1927)

Birth anniversary of shri **Ramprasad Bismil (1897-1927)** was celebrated recently.

Early Life

- Born in the **Shahjahanpur district** of present-day Uttar Pradesh.

Contribution

- At young age, Joined the **Arya Samaj Youth Association** and began spreading the teachings of Swami Dayanand.
- In the **Mainpuri Conspiracy (1918)**, police found Bismil among youths selling banned books.
  - He published a pamphlet titled 'Deshwasiyon ke Naam' and distributed it along with his poem **'Mainpuri ki Pratigya'.**
- In **1924**, Sanyal, Bismil, Ashfaqullah, and Chatterjee united to establish the **Hindustan Republican Association.**
- He was the mastermind behind the infamous **Kakori Conspiracy Case.**

Leadership and Conviction

- He organized the youth for strengthening the voice against alien rule and founded the organization to give shape to their struggles.
- He not only participated in a highly dangerous plot to loot the arms from the Britishers but also sacrificed his life by not yielding to extreme torture and life threats.



Sukumar Sen (1898-1963)

A biopic on the life of Sukumar Sen has been announced.

About Sukumar Sen

- **First Chief Election Commissioner** of India, served from 1950 to 1958.

Contributions

- Conducted first **two Lok Sabha elections** of India (**1952** and **1957**) simultaneously with the Legislative Assembly Elections based on **universal adult franchise.**
- Many innovative methods were introduced under his leadership to conduct free and fair elections such as **indelible ink** to avoid voter impersonation.
- Served as the Chairman of the **International Election Commission.**

Awards and Honour: Padma Bhushan

Integrity and Innovation

- Ensured the conduct of free and fair elections in India, upholding the democratic process with transparency and honesty.
- Pioneered several innovative techniques like the introduction of indelible ink to prevent voter impersonation, setting a global standard for election management.



Sucheta Kriplani (1908 - 1974)

Eminent Freedom Fighter and India's first women Chief Minister (Uttar Pradesh, 1963) Sucheta Kriplani was remembered on her birth anniversary (June 25).

About Sucheta Kriplani

- She was an **Indian politician and freedom fighter born in Ambala district of Haryana.**
- She was **one of the fifteen eminent women** that were **part of the drafting committee.**

Key Contributions

- She was a **founding member of the All India Mahila Congress,** founded in 1940.
- She participated in **Quit India Movement** and worked underground to evade arrest.
- She also participated in several **relief activities,** including the 1934 Bihar earthquake, the 1946 Noakhali pre-Partition riots, etc.
- Part of several delegations: **Parliamentary Delegation to Turkey** (1954); **International Labour Organization** (1961), **United Nations General Assembly** (1949), etc.

Resilience and Empathy

- She actively participated in the Quit India Movement and evading arrest, showing her steadfast commitment to India's independence.
- Showed deep compassion through her involvement in relief activities during the earthquake and the riots, prioritizing the welfare of those affected by disasters.



Laxman Satpathy (1916-2001)

Laxman Satpathy's birth anniversary was observed recently.

About Laxman Satpathy

- **Born in the Princely State of Sonpur** in British India (now in Odisha).

Contributions

- One of the **forefront leaders of Sonpur Prajamandal Movement.**
  - Inspired by **Gandhiji's call for non-cooperation,** he and his brother Ram Satpathy **raised their voice against the ruler of princely state of Sonpur.**
- **Launched underground activities,** which took **severe turn during Quit India movement (1942).**
- He along with other Prajamandal leaders was **instrumental in merger of Sonpur with Odisha (January, 1948).**

Patriotism and Leadership

- Displayed deep love for his country by leading the Sonpur Prajamandal Movement and actively participating in the Quit India Movement, striving for India's freedom and unity.
- Showed strong leadership in the successful merger of Sonpur with Odisha, mobilizing and inspiring his community towards achieving significant political change.

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