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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.

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# 1. POLITY AND GOVERNANCE

## 1.1. UNIFORM CIVIL CODE (UCC)

### Why in the news?

The Uttarakhand State Legislative Assembly passed the Uniform Civil Code, Uttarakhand, 2024 Bill.

### More about the news

- With this, **Uttarakhand became the first State** in the country to pass a **law on Uniform Civil Code**.
  - Also, **Assam and Gujarat are the other states working on the implementation of UCC**.
  - **Goa** is the only place in India where a **form of common civil code is in practice**, the Portuguese Civil Code of 1867.
- **Key highlights of Uttarakhand UCC**
  - **Applicability:** Applies to **all residents** of Uttarakhand **except the tribal community those protected under Part XXI of the Constitution**.
  - **Marriage and Live-in Relationships:** Mandates registration of **all live-in relationships within one month and marriages within 60 days**, applicable to all residents.
    - ✓ **Excludes the LGBTQIA+ community.**
    - ✓ **Grants legal recognition to children** from voidable marriages and live-in relationships.
    - ✓ **Criminalization of Some Marriage Practices:** Bans practices like **nikah-halala** and **triple talaq**.
    - ✓ **Prohibition of Bigamy or Polygamy:**
  - **Inheritance:** Ensures equal property rights for sons and daughters, **departing from the coparcenary system and providing equal rights in intestate succession**.

### About UCC

- A UCC provides for the formulation of **one law for the entire country, which would apply to all religious communities** in their personal matters such as marriage, divorce, inheritance, adoption, and succession.
- Currently, Indian personal law is complex, with **each religion adhering to its specific laws**.
- **Personal Laws in India:**
  - **Hindu Succession Act 1956** governs Hindus, Sikhs, Jains and Buddhists
  - **Muslim Personal Law** governs Muslims
  - **Indian Succession Act 1925** applies to Christians, Parsis, and Jews
  - **The Special Marriage Act** provides for the solemnization of interfaith marriage as well as registration by a Marriage Officer.

### Arguments for UCC

- **Constitutional Mandate (Article 44):** UCC is enshrined in the Constitution's Directive Principles, aiming to create a uniform legal framework for civil matters.
- **Promotes Secularism:** UCC ensures that civil laws are not influenced by religious beliefs, thus upholding the principle of secularism.

## Background of UCC



### Pre-Independence Period

- ▶ **Lex Loci Report (1840)** Emphasized the **importance of uniformity in codifying Indian law related to offenses, evidence, and contracts**. But recommended that **personal laws of Muslims and Hindus should not be codified**.
- ▶ **B N Rau Committee (1941)** Recommended a **codified Hindu law** which would give equal rights to women.



### Post-Independence Period

- ▶ **Special Marriage Act, 1954** Have provision for **civil marriage for people of India and all Indian nationals in foreign countries**, irrespective of religion or faith followed by either party.
- ▶ **Four major enactments on Hindu Law** Viz. Hindu Marriage Act 1955, Hindu Succession Act 1956, Hindu Minority and Guardianship Act 1956, Hindu Adoption and Maintenance Act 1956.

### Important Judgements and committees Recommending UCC

- **Shah Bano Case (1985):** SC Highlighted need for UCC, especially in maintenance matters.
- **Sarla Mudgal Case (1995):** SC Urged UCC for gender equality among religions.
- **Paulo Coutinho vs Maria Luiza Valentina Pereira (2019):** SC Highlights need for uniform laws for consistency.
- **Law Commission (2018):** No UCC needed now, amend existing laws.
- **Law Commission of India (2022):** It seeks public and religious input on UCC.

- **Fosters National Unity:** By transcending religious and community divisions, UCC promotes common citizenship and strengthens national unity.
- **Ensures Gender Justice:** UCC eliminates discriminatory practices in personal laws, promoting gender equality and women's rights.
- **Simplifies Legal Procedures:** associated with marriage, divorce, and inheritance.
- **Codify Personal Laws:** Codifying laws can establish universal principles for fairness and streamline legal processes, promoting access to justice and resolving disputes effectively.

### Arguments against UCC

- **Threatens Diversity and Religious Freedom:** Imposing a uniform code may undermine cultural and religious identities and infringe upon the right to religious freedom guaranteed under **Article 25**.
- **Lacks Consensus among Communities:** Implementation without consensus from diverse communities may lead to social unrest and resistance.
- **Raises Concerns about Federal Structure:** Some argue that UCC could encroach upon states' legislative powers, disrupting the principles of cooperative federalism **under Schedule 7 entry 5**.

### Way forward

- **Seek Consensus:** The government should engage in constructive dialogues with all stakeholders, including religious leaders and community representatives, to garner support and address concerns.
- **Ensure Political Will:** Implement UCC in a non-partisan and inclusive manner, avoiding its use as a tool for political gains.
- **Raise Awareness:** Conduct awareness campaigns to educate the public about the rationale behind UCC and its benefits, involving government, civil society, and media.
- **Adopt a gradual process:** Review existing personal laws to align UCC with principles of justice, equality, and non-discrimination, ensuring fairness for all.

## 1.2. CITIZENSHIP (AMENDMENT) RULES, 2024

### Why in the news?

Ministry of Home Affairs has amended **Citizenship Rules, 2009** and notified Citizenship (Amendment) Rules, 2024 to enforce the **Citizenship Amendment Act (CAA), 2019**.

### Background

- By exercising power under Article 11, the Parliament passed CAA-2019 and received the President's assent in December 2019. However, the MHA had not frame the rules, so the Act could not be implemented.
- The CAA aims to give citizenship to the target group of migrants even if they do not have valid travel documents as mandated in **The Citizenship Act, of 1955**.

### Citizenship Amendment Act (CAA), 2019

- The amendment provides that **illegal migrants who fulfil four conditions will not be treated as illegal migrants under the Act**. The conditions are:
  - they are **Hindus, Sikhs, Buddhists, Jains, Parsis or Christians**
  - they are from **Afghanistan, Bangladesh or Pakistan** they entered India on or before **December 31, 2014**
  - they are **not in certain tribal areas** of Assam, Meghalaya, Mizoram, or Tripura included in **the Sixth Schedule** to the Constitution, or areas under the **"Inner Line" permit**, i.e., Arunachal Pradesh, Mizoram, and Nagaland.

### Do you know?

> **Article 11 of the Indian constitution empowers Parliament** to make any provision to the **acquisition and termination of citizenship** and all other matters relating to citizenship.

### Five grounds of cancellation of OCIs

	Registration through <b>fraud</b>
	<b>Showing disaffection</b> to the Constitution
	<b>Engaging with the enemy</b> during war
	<b>Necessity in the interest of sovereignty of India</b> , security of the state or public interest, or
	If within five years of registration, the OCI has been <b>sentenced to imprisonment for two years or more</b> .



- The Central Government **exempted the said migrants from the adverse penal consequences** of the Passport (Entry into India) Act, 1920 and the Foreigners Act, 1946 and rules or orders made thereunder.
- The **period of naturalisation has been reduced from 11 years to 5 years** for the above category of migrants.
- **Five grounds for cancelling OCI registration:** The Act provides that the central government may cancel the registration of OCIs.

#### Key highlights of Citizenship (Amendment) Rules, 2024

<b>Eligibility</b>	<ul style="list-style-type: none"> <li>• To apply for citizenship by registration/naturalization one must be: <ul style="list-style-type: none"> <li>○ Person of Indian origin</li> <li>○ <b>Married</b> to an Indian citizen</li> <li>○ <b>A minor child of</b> an Indian citizen</li> <li>○ A person whose <b>parents are registered as</b> an Indian citizen</li> <li>○ Person or <b>either of his parents was a citizen of Independent India</b></li> <li>○ <b>registered as an Overseas Citizen of India Cardholder</b></li> </ul> </li> </ul>
<b>Other Qualifications for citizenship by naturalization</b>	<ul style="list-style-type: none"> <li>• Applicant will have to present an <b>affidavit verifying correctness of the statements made</b> in the application and an <b>affidavit by an Indian citizen to testify the character of the applicant.</b></li> <li>• Applicant must have <b>adequate knowledge of one of the languages listed in 8th Schedule</b> of Indian Constitution.</li> </ul>
<b>Proof of nationality</b>	<ul style="list-style-type: none"> <li>• Rules <b>relaxed the requirement</b> of documents to prove the country of origin. Applicants now can provide <b>20 different documents</b> as proof of entry into India, including visas, residential permits, census slips, driving licenses, Aadhaar cards etc.</li> </ul>
<b>Renouncing citizenship of another country</b>	<ul style="list-style-type: none"> <li>• Applicant shall have a declaration <b>saying the citizenship of his country shall stand renounced irrevocably</b> if the application for Indian citizenship is approved.</li> </ul>
<b>Authority to which application may be made</b>	<ul style="list-style-type: none"> <li>• <b>Under Section 6B of the Citizenship Act, 1955</b>, an application shall be submitted in <b>electronic form</b> to the <b>Empowered Committee (EC)</b> through the <b>District Level Committee</b> as may be <b>notified by the Central Government.</b></li> </ul>

#### Need of CAA 2019 and Rules

- **Human Rights Perspective:** The Act upholds the **principles of human rights by providing relief to persecuted** individuals and safeguarding their rights to life and liberty.
- **Strengthening National Security:** The Act is aimed at **differentiating between illegal immigrants and persecuted minorities.**
- **Relief for Partition Victims:** The Constitutions **of Pakistan, Afghanistan and Bangladesh provide for a specific state religion.** As a result, many persons belonging to Hindu, Sikh, Buddhist, Jain, Parsi and Christian communities have faced persecution on grounds of religion in those countries.

#### Concern Raised

- **Classification of countries:** Migrants from other neighbouring countries such as Sri Lanka (Buddhism is the state religion) and Myanmar (primacy to Buddhism) are not included.
- **Basis of migration:** There is no test stipulated under the CAA Rules, 2024 to prove or scrutinize if the applicant was compelled to enter India because they faced persecution or fear of persecution.
- **Potential of violation of right to equality:** The exclusion of Muslims, Jews and Atheists from CAA is said to be a violation of Article 14 and the principle of secularism of the constitution.
- **Classification based on date of entry:** CAA also offers differential treatment to migrants based on their date of entry into India, i.e., whether they entered India before or after December 31, 2014.
- **Implication on external relations:** The amendment may imply that **religious persecution of the non-minority in neighbouring countries** is one of the reasons for the amendment, potentially leading to tensions with neighbouring countries.

#### Conclusion

While the Constitutional Amendment Act aims to address the concerns of persecuted minorities, it is imperative to address the raised concerns to ensure a comprehensive and inclusive approach.

## 1.3. ONE NATION ONE ELECTION

### Why in the news?

The High-Level Committee (HLC) appointed by the Central Government has submitted a report to the President on "one nation, one election."

### More on the news

- **The committee, headed by former President Shri Ram Nath Kovind**, was established in September 2023 to examine the concept of 'one nation, one election' (ONOE).
- The committee advocated **simultaneous elections for Lok Sabha, State Legislative Assemblies, and local bodies.**

### About Simultaneous Election

- It is an idea aimed **to synchronize the Lok Sabha, State Assemblies elections, Municipalities and Panchayats** such that voters in a particular constituency vote on the same day.
  - Simultaneous elections **do not mean that voting across the country** for all elections **needs to happen on a single day.**

### Need for Simultaneous Elections:

- **Economic benefits**
  - It would reduce the financial burden on the government exchequer by **avoiding duplication of expenditure on intermittent elections.**
  - Conducting elections to all three tiers of the Government **together would avoid disruption of supply chains** and production cycles due to **migrant workers** seeking leave of absence to cast their vote.
  - Simultaneous Elections **prevent policy paralysis** due to frequent Model code of conduct.
- **Focus on governance:** Synchronising electoral calendars would **ensure the availability of more time for governance and unhindered delivery of public services to citizens.**
- **Voter Participation:** Staggered elections induce 'voters' fatigue' and present a significant challenge in ensuring their participation.
- **Reducing the burden on courts:** Simultaneous elections would **reduce the number of election-related offences and disputes and lessen the burden on courts.**
- **Reducing identity politics:** Frequent elections use identity politics, like caste and class stirring division and disrupting societal cohesion.

### Issues with simultaneous election and recommendation given by the Committee

Issues	Committee observations/recommendations
Legal challenges to amend the Constitution to synchronise of election	<ul style="list-style-type: none"> <li>• <b>Two steps to manage this challenge:</b> <ul style="list-style-type: none"> <li>○ Firstly, hold simultaneous elections for the Lok Sabha and State Legislative Assemblies.                             <ul style="list-style-type: none"> <li>✓ To attain this step, <b>Constitutional Amendment Bill</b> will be introduced amending <b>Article 83</b> (Duration of Houses of Parliament), and <b>Article 172</b> (Duration of State Legislatures), and insertion of Article 82A will be made.</li> <li>✓ For this Amendment, <b>ratification by the States is not required.</b></li> </ul> </li> <li>○ Secondly, <b>within the hundred days of the Lok Sabha and State Legislative Assemblies elections</b>, synchronize the elections for Municipalities and Panchayats. For this purpose, another <b>Constitutional Amendment Bill</b> will be introduced in which                             <ul style="list-style-type: none"> <li>✓ <b>insertion of Article 324A</b> (to synchronise elections of Municipalities and Panchayats)</li> <li>✓ and amendment to Article 325 (to enable <b>Single Electoral Roll and Single Elector's Photo Identity Card</b>) of the Constitution will be made.</li> </ul> </li> </ul> </li> </ul>
Issue of hung Parliament/Assembly and premature dissolution.	<ul style="list-style-type: none"> <li>• In the event of a hung House or no-confidence motion, the <b>Committee proposes fresh elections for the House of the People</b>, serving only the unexpired term of the preceding full term. Similarly, for State Legislative Assemblies, new elections shall last until the House of the People's full term ends.</li> <li>• A Constitution Amendment Bill will have to be introduced in the Parliament amending Article 83 and Article 172.</li> </ul>

### Expert bodies advocated for simultaneous elections

- **Law Commission of India** (170th Report of 1999, 255th Report of 2015, Draft Report 2018)
- **National Commission to Review the Working of the Constitution, 2002,**
- **Parliamentary Standing Committee Report in 2015,**
- Working Paper of **NITI AAYOG** in 2017.

Altering state elections would <b>violate the rights of the states.</b>	<ul style="list-style-type: none"> <li>Report counters the concern by mentioning <b>Articles 327, empowers Parliament to make provisions with respect to Parliament and state elections.</b></li> <li>Committee recommends need to <b>amend the Representation of the People Act, 1951.</b> <ul style="list-style-type: none"> <li><b>Sections 14 and 15 deal with notification</b> for general election and <b>Part IX, comprising Sections 147 to 151A, deals with bye-elections</b> to the House of the People and the State Legislative Assemblies.</li> </ul> </li> </ul>
<b>Synchronisation of elections to the House of the People and State Legislative Assemblies</b>	<ul style="list-style-type: none"> <li>The committee proposed that the <b>President of India issue a notification</b> on the date of the first sitting of the House of the People after a General election, designating it as the Appointed date for the synchronization of elections.</li> <li>An <b>Implementation Group should be constituted</b> to oversee the execution of the recommendations.</li> </ul>
Related to <b>logistics and manpower</b> , including EVMs, VVPATs	<ul style="list-style-type: none"> <li><b>Election Commission of India draw up a plan for making logistical arrangements.</b></li> <li>The commission can estimate in <b>advance for the procurement of equipment, such as EVMs and VVPATs</b>, deployment of polling personnel and security forces, and make other necessary arrangements.</li> </ul>

## Conclusion

The formation of the 'High-Level Committee' reflects a serious consideration of synchronizing elections in India. Addressing the challenges through transparent and inclusive dialogue with stakeholders, including legal experts, state governments, and representatives of minority communities, is crucial to ensure a comprehensive and inclusive approach to 'One Nation, One Election'.

Scan the QR code to know more about **Electoral Reform.**

**Weekly Focus #58:** Electoral Reform: An Approach to Effective Democracy



## 1.4. MUNICIPAL ELECTIONS

### Why in the News?

The Supreme Court invalidated and annulled the outcome of the mayoral elections held for the Chandigarh Municipal Corporation.

### About Municipal Elections

- Municipal elections refer to the **elections held to elect representatives for local urban governing bodies.**
- Elections for the **Municipal Corporations are held as per the Municipal Corporation Act** framed by the legislature of the respective state government, whereas elections for the Municipalities and the Town Panchayats are held as per respective Municipal Act.

### Constitutional Provisions related to municipalities.

- Composition of Municipalities (Art 243R):** All the seats in a Municipality shall be filled by persons chosen **by direct election** from the territorial constituencies in the Municipal area.
  - For this purpose, **each Municipal area shall be divided into territorial constituencies to be known as wards.**

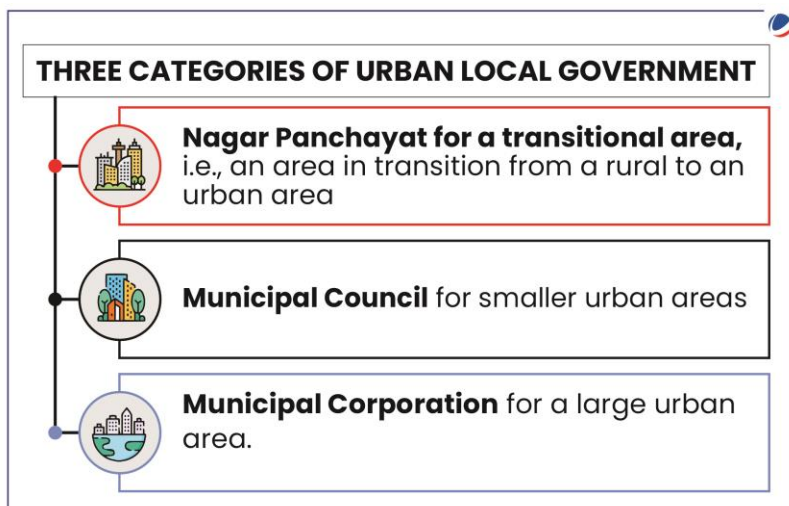
### Urban Local Bodies

- A Municipal Corporation has three authorities:** the Council, the Standing Committee, and the Commissioner.
  - The Council, comprising councilors, is the deliberative and legislative wing** of the Corporation that is **headed by a mayor.** He is **assisted by a Deputy Mayor.**
    - Though the Mayor is an **ornamental figure**, he is **recognised as the first citizen of the city.**
  - The standing Committees were created** to facilitate the working of the Council which is too large in size.
  - The Municipal Commissioner is responsible for the implementation of the decisions taken by the Council and its Standing Committees.**
- Indian cities largely follow the **'commissioner as chief executive' (CACE) model as opposed to the directly elected executive mayor' (DEEM) model:**
  - DEEM Model:** It's a **strong mayor model** where a mayor has extensive executive power.
  - CACE model:** It's a **weak mayor model** where **the executive power lies in the hands of the commissioner** (An Indian Administrative Service officer).
- Every State in the country has enacted legislation for the constitution of the Municipalities in the **State specifying their functions, structure, resource and their role in civic administration.**

- **Reservation of seats (Art 243T):** Seats are reserved for weaker sections, Scheduled Caste/Tribes, Women, and other groups as per respective municipal Acts.
- **Duration of Municipalities (Art 243U): 5 years** from the date appointed for its first meeting.
  - Elections to constitute a municipality are **required to be completed before the expiration of the duration of the municipality.**
  - If the municipality is dissolved **before the expiry of 5 years**, the elections for constituting a new municipality are required to **be completed within a period of 6 months from the date of its dissolution.**
- **State Election Commission (Art 243ZA):** The superintendence, direction and control of the preparation of electoral rolls for, and the conduct of, all elections to the Municipalities shall be vested in the SEC.

#### Challenges in Municipal Elections

- **Untimely elections:** Despite the SC-specific direction in **Suresh Mahajan v. State of Madhya Pradesh (2022)** State governments do not hold timely elections for urban local governments.
  - Over **1,500 municipalities** did not have elected councils in place from 2015 to 2021 **across States.**
- **Delay in Council Formation:** Even after elections, councils are not constituted, and elections of mayors, deputy mayors and standing committees are delayed.
  - In Karnataka, there was a delay of 12-24 months in the formation of elected councils after the declaration of election results in most of the 11 city corporations.
- **Delimitation and reservation:** Most of the time state delayed the delimitation process, which in turn delayed council elections.
  - Power of delimitation of wards, reservation of seats for the council and rotation policy of seats for the posts of Mayor/President, Deputy-Mayor/Vice-Presidents and wards were vested with the State Government in most of the state.
    - ✓ Three States, Kerala, Maharashtra, and West Bengal have empowered the SEC to delimit wards.
- **Inconsistent Mayoral terms:** In India, **17% of cities including five of the eight largest ones have mayoral terms less than five years.**
  - The terms of **mayors, deputy mayors and standing committees** being **less than five years leads to frequent elections.**
  - Mayors, whether **directly or indirectly elected are affected by the** domineering presence of the states.
- **SECs lack power:** As they depend on state governments to complete the delimitation of ward boundaries and to notify reservations for women as well as marginalized communities.
- **Voter Apathy:** Voter turnout for municipal elections has been consistently lower than parliamentary and state assembly elections.
  - **For Example**, the 2020 Delhi assembly saw a 62.59% turnout, 11.85% more than local council elections.



#### Need for fair and timely Municipal Elections:

- **The 'First-mile' Connect:** Municipalities are critical since councilors serve as 'first mile' elected citizens' representatives.
  - **India has 87,000+ councilors** (an elected representative of a ward) across its **4,700+ cities**, representing an **average of over 4,300 citizens** in each ward.
- **Tackle grassroots level issues:** Timely elections would ensure local action which is required to tackle **the 21st-century human development priorities which includes environmental sustainability, primary healthcare, gender equality and jobs and livelihoods.**
- **Efficient utilization of funds:** for e.g., Elected councilors play an important role in the utilization of the fund allocated by **the Fifteenth.**
- **Commission (allocated Rs. 26,000 crores)** for municipalities towards primary healthcare.

## Way forward

- **Empowering SECs:** Strengthening SECs and giving them a more significant role in the entire election process can help ensure timely, free, and fair municipal elections.
  - SECs can be involved in **the elections of mayors, deputy mayors and standing committees.**
- **The power of delimitation:** Must be vested in the SECs or an independent Delimitation Commission in each State for conducting the delimitation and reservation process.
- **Single electoral roll:** A single electoral roll for all three tiers of Government as suggested by the High-level Committee on Simultaneous Elections will reduce redundancy and duplication across multiple agencies.

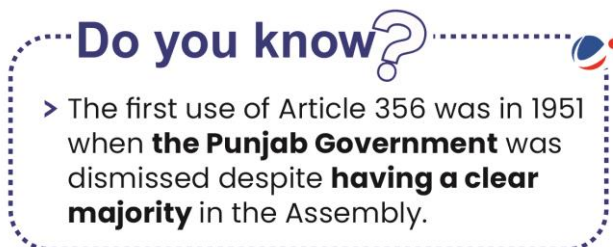
## 1.5. S.R. BOMMAI JUDGEMENT (1994)

### Why in the news?

S.R. Bommai's judgement (1994) of the Supreme Court (SC) completes 30 years.

### About S. R. Bommai (SRB) v. Union of India (UOI), 1994 Judgment

- In 1989, the Central government dismissed SRB's government in Karnataka under Article 356 of the Constitution and President's Rule was imposed.
- A nine-judge bench of the SC interpreted Article 356 of the Constitution to define the contours of the proclamation of President's rule.



### About Article 356

- State Emergency is also known as **President's Rule or Constitutional Emergency**. The Constitution does not use the word 'emergency' for this situation.
- **Article 356 finds inspiration in Section 93 of the Government of India Act 1935.**
- **Ground to declare:** Based on the report from the Governor of a State or otherwise, **if the President is satisfied** that a situation has arisen in which the government of a State cannot be carried on in accordance with the provisions of the Constitution.
- **Validity:** The President's Rule is valid for two months unless Parliament extends it for up to six months.
  - Extensions beyond a year are only permitted in a national security emergency or if the Election Commission certifies that holding assembly elections is difficult.
  - Even then, the limit for the President's Rule is three years.

### Key Questions in SRB's Case

- One, whether **proclamations of the President's Rule were justiciable** (liable to judicial review court).
- Two, **the scope and limits** of the President's powers under Article 356.
  - The Constitution is **silent on what constitutes a failure** of constitutional machinery **making the provision vulnerable to misuse.**
- Three, **what are the consequences if the Court hold the proclamation of the President's Rule invalid** even after Parliament has given its approval.

### Bommai judgement and Key Principles laid down:

- **Judicial Review:** SC declared, presidential proclamation under Article 356 is subject to judicial review on substantial grounds.
  - **No restriction on the court** from **examining the material** based on **which the President formed his satisfaction.**
  - SC or HC can **strike down the Proclamation if it is mala fide** or based on **wholly irrelevant or extraneous grounds.**
- **Limits of the President's powers:** The verdict concluded that the power of the President to dismiss a state government is not absolute. The president **should exercise the power only after his proclamation is approved by both Houses of Parliament.**
  - Till then the President can only suspend the Legislative Assembly by suspending the provisions of the Constitution relating to the Legislative Assembly.
- **Consequences of invalidation of President's Rule:**
  - Both the **Council of Ministers** and the **Legislative Assembly** should stand **restored.**

- The **validity of the acts done, orders passed and laws**, made during the **period of operation of the proclamation** would remain **un-effected**.
- **Other key observations:**
  - **Laid down the supremacy of the floor test** in determining the support enjoyed by the party in power.
  - The use of Article 356 was justified only when there was a **breakdown of constitutional machinery and not that of administrative machinery**.
  - Based on the **Sarkaria Commission report (1988)**, the SC in this case has enlisted where the use of the exercise of power under Article 356 could be proper or improper.
    - ✓ **Proper use example: constitutional** direction of the Central government is disregarded by the state govt (Art 365).
    - ✓ **Improper use example:** State govt is not given prior warning to rectify itself except in case of extreme urgency leading to disastrous consequence.
  - **Secularism, democracy and federalism** are the essential features of our Constitution and are part of its basic structure.
    - ✓ **An attempt was made to define secularism:** it is **more than a passive attitude of religious tolerance**. It is a **positive concept of equal treatment of all religions**.

### Impact of S.R. Bommai Judgment

- **Restrictive use of Article 356:** Between **January 1950 and March 1994**, the President's Rule was imposed **100 times or an average of 2.5 times a year**. Between **1995 and 2021**, it has been imposed **only 29 times or a little more than once a year**.
- **Strengthen Federalism:** The judgment made **Article 356 proclamations justiciable** without undermining the President's discretionary powers, thus **strengthening India's federalism without diminishing its separation of powers**.

### Conclusion

Post-1994, the Bommai case was cited several times, making it one of the most quoted verdicts in the country's political history. As India continues to navigate the complex dynamics of centre-state relations and the role of secularism in governance, the principles established in the S.R. Bommai case remain vital in upholding the constitutional ideals of federalism and pluralism.

## 1.6. SIXTH SCHEDULE

### Why in the news?

The people of Ladakh are protesting for Ladakh **to be recognized as a tribal area under the Sixth Schedule**.

### More in News

- Ministry of Home Affairs argued that granting sixth schedule status to Ladakh necessitates a constitutional amendment, a complex process.
- During a meeting with Ladakh representatives, the union home minister proposed extending Article 371-like protections to the region.

### Protection under Article 371

- **Articles 371 to Article 371-J** of the constitution, provide **"special provisions" for specific states**.
- It allows **certain religious and social groups to exercise autonomy** over their affairs without interference from the state and central governments.

### About Sixth Schedule

- The Sixth Schedule of the Constitution, under **Article 244(2) and Article 275(1)** of the Constitution, is provided for the **administration of tribal areas in Assam, Meghalaya, Tripura, and Mizoram**.






### Provisions of the Sixth schedule

- It **empowers the Governor** to create **Autonomous District Councils (ADCs) and Autonomous Regional Councils (ARCs)** in these four states.
  - **Composition of ADCs:** ADCs consist of **not more than thirty members**, out of **which four are** nominated by the Governor while the rest are elected. (Bodoland Territorial Council is an exception; it can have up to forty-six members)

- **ARCs:** If there are **different Scheduled Tribes in an autonomous district**, the Governor may divide the area or areas inhabited by them into autonomous regions.
- The sixth Schedule conferred the following Executive, Legislative and Judicial powers to ADCs and ARCs.

Power	Subject
<b>Legislative Power</b>	<b>To make rules</b> <ul style="list-style-type: none"> <li>• in respect of <b>lands, management of forest</b> (other than the Reserved Forest), shifting cultivation, Chiefs or Headmen appointment.</li> <li>• In respect to <b>inheritance of property, marriage and divorce</b> and social practice.</li> <li>• Regulations and control of <b>moneylending or trading</b> by any person other than Scheduled Tribe residents in that Scheduled District.</li> </ul>
<b>Executive Power</b>	<ul style="list-style-type: none"> <li>• Power to establish or manage primary schools, dispensaries, markets, cattle ponds, fisheries, roads, road transport and waterways in the districts.</li> <li>• The Councils are also <b>authorized to prescribe the language and manner of instruction in the primary schools.</b></li> </ul>
<b>Judicial Powers</b>	<ul style="list-style-type: none"> <li>• Empowered to constitute <b>Village and District Council Courts.</b></li> <li>• <b>No other courts except the High Courts and the Supreme Court</b> has the jurisdiction over such suits or cases of the Council Courts</li> <li>• However, these Council Courts are <b>not given the power to decide cases involving offences punishable by death or imprisonment for five or more years.</b></li> </ul>
<b>Financial Powers</b>	<ul style="list-style-type: none"> <li>• Empowered to <b>prepare a budget</b> for their respective Council.</li> <li>• Empowered to <b>assess and collect land revenue</b> and <b>impose taxes</b> on professions, trades etc.</li> <li>• given the power to <b>grant licenses or leases for extraction of minerals within their jurisdiction.</b></li> </ul>

## Fifth and Sixth Schedule

Feature	Fifth Schedule	Sixth Schedule
 <b>Applicability</b>	Applies to certain tribal areas in any states of India. (Currently in 10 states)	Applies to the tribal areas in the four northeastern states of India.
 <b>Administration</b>	Tribes Advisory Councils (TAC)	District Councils or Regional Councils
 <b>Administrative power</b>	TAC being the creation of the Legislative Assembly of the States has limited powers which are mostly executive.	Extensive powers, including executive, legislative and judicial powers, all derived from the Constitution.
 <b>Emphasizes</b>	More on protection of tribal rights	More on self-governance.
 <b>PESA Act 1996</b>	Applicable	Not applicable

## Benefits Ladakh will get if included in Sixth Schedule

- **Address Local Issues:** The ADCs could address issues specific to Ladakh, such as environmental protection, tourism management, and sustainable development practices.
- **Land Rights:** Ladakh enjoyed analogous autonomy as part of the erstwhile state of Jammu and Kashmir through Article 35A of the Indian Constitution till it was repealed in 2019.
  - Hence, the Sixth Schedule would safeguard the land and forest rights of the tribal communities and protects them from alienation.
- **Safeguards for Tradition:** Ladakh's unique cultural heritage and traditional customs would be recognized and legally protected.
- **Resource Management:** The ADCs would have greater control over **mineral resources within their jurisdiction**, allowing them to manage them more effectively.
- **Job Opportunities:** There **could be increased reservation in government jobs and educational institutions** for people of Ladakh, promoting local employment.

## Issues in awarding Sixth Schedule Status to Ladakh

- **Financial Viability:** Establishing and running Autonomous District Councils (ADCs) requires significant financial resources.
- **Inter-Community Dynamics:** Balancing the interests of the Buddhist majority in Leh and the Muslim majority in Kargil within the framework of the Sixth Schedule could be challenging.
- **National Security Considerations:** Ladakh's sensitive border location raises concerns that increased autonomy might complicate coordination with the central government on security matters.

## Conclusion

Initiating a dialogue involving Ladakhi representatives, political leaders, and the central government is crucial. The key lies in finding a solution that respects Ladakh's unique identity and aspirations while considering the broader national framework. Open communication and a willingness to explore alternatives are essential for achieving a positive outcome.

## 1.7. TEMPLE REGULATION IN INDIA

### Why in the news?

Karnataka Legislative Assembly passed the Karnataka Hindu Religious Institutions and Charitable Endowments (Amendment) Bill, 2024 to regulate temples in the state.

### More on the news

- The new bill amends the Karnataka Hindu Religious Institutions and Charitable Endowments Act, of 1997.
- The Bill mandates that the **government will collect 10% and 5% of the income from temples** that have **annual revenue of more than ₹1 crore and ₹10 lakh respectively**.
  - Previously, temples earning between ₹5 lakh and ₹10 lakh annually contributed 5% of their net income to the Common Pool Fund, while those earning above ₹10 lakh allocated 10%.
- Bill proposed to utilise the money for the welfare of archakas (priests) and the development of temples whose annual income is less than ₹5 lakh.

### Legal and Institutional Framework to Regulate Temples

- **Article 25 (1) gives the freedom of religion and 25 (2) talks about areas where the State may intervene** and make laws or regulate religious institutions.
- **Article 26 provides for the freedom to manage the religious affairs** of the citizens and is subject to public order, morality and health.
- **Entry 28 of List III of Schedule VII empowers both Union and State Legislatures to make law on “Charities and charitable institutions, charitable and religious endowments and religious institutions”.**
- **Hindu Religious and Charitable Endowments (HR&CE):** Several states across the country have enacted legislative and regulatory frameworks to regulate these institutions through the powers accorded by the Constitution.

#### Temple regulation in the Colonial Period

- **Religious Endowments Act of 1863** was enacted to establish local committees to oversee the temples.
- **Madras Hindu Religious Endowments Act of 1925** provided oversight of the management of temples through a board of commissioners with enormous powers.



- **Hindu Religious Endowments Commission (1960):** The Commission declared that government control over temples was essential to prevent maladministration.

### State control of Temple: Argument for and against

Arguments in favour	Arguments in against
<ul style="list-style-type: none"> <li>• <b>Social Reforms:</b> State regulation has challenged the hereditary priesthood, ensuring more inclusive and non-discriminatory practices in public temples.</li> <li>• <b>Representation of Marginalized Sections:</b> Government intervention can counter the historical dominance of certain groups in temple management, promoting adequate representation.               <ul style="list-style-type: none"> <li>○ <i>Example:</i> Tamil Nadu HR&amp;CE Act mandates SC/ST representation in temple Board of Trustees.</li> </ul> </li> <li>• <b>Efficient Temple Management:</b> The Charitable Endowment Act ensures proper administration and preservation of temple assets, ensuring endowments are used for their intended purposes.</li> <li>• <b>Community Welfare:</b> State oversight can ensure that temple funds are used for community welfare activities, benefiting the local populace.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Violation of Secularism:</b> State interference in religious affairs violates the principle of secularism which separates state affairs from the religion.</li> <li>• <b>Non-uniform regulation:</b> Opponents highlight the disproportionate focus on the regulation of Hindu temples, while other religious institutions remain largely autonomous.</li> <li>• <b>Erosion of Operational Autonomy:</b> State interventions have compromised the fundamental character and ethos of temple worship and rituals.               <ul style="list-style-type: none"> <li>○ For example, In the Chidambaram Case (2014), the Supreme Court permitted the Dikshitar (priest community) to manage the temple, emphasizing the need to preserve traditional autonomy.</li> </ul> </li> <li>• <b>Erosion of Cultural Capital:</b> Poor conservation efforts have led to the damage and demolition of historically significant temple structures, as highlighted by a <b>UNESCO fact-finding mission</b> in 2017 submitted to the Madras High Court.</li> <li>• <b>Loss of Tourist Potential:</b> The diversion of temple funds into other activities by the state may leave little for investment in temple infrastructure.</li> <li>• <b>Tribals and Indigenous Communities:</b> State control might not be sensitive to the unique customs and traditions of tribal communities associated with their places of worship.</li> </ul>

### Way Forward

- **Separation of religious and administrative domain:** There should be a clear separation of power in operations relating to the **religious domain** and the **administrative (secular) domain**.
- **Inter Temples Network Structure:** Temples can be grouped in three categories based on their size. Then club temples based on **the hub and spoke model** in which larger and administratively strong temples support smaller temples in the region.
- **Good governance principles:** State-level **Temple Administration Board** (Having state officials) assisted by the **Temple Management Committee (TMC)** and **Temple Level Trusts** (having priests, locals etc.) can be constituted to administer different functions.
  - **Hindu Religious and Charitable Endowment Act, 1991** also provides for a Temples Administration Board.
- **Special Purpose Vehicle (SPV): Temple Development and Promotion Corporation (TDPC)** can be formed to undertake all development work of all temples **relating to tourism, networking of temples, promoting** research and publication, IT, training, and capacity building, etc.
- **Following Best Practices:** The concept of **Devaswom** (property of God) in Kerala is an interesting model to keep check on corruption.

**JUDICIAL PRONOUNCEMENT RELATED TO TEMPLE**

**Kerala's Padmanabhaswamy Temple Case:** SC granted the erstwhile Travancore royal family the shebaitship rights (right to manage a temple) for the properties belonging to Sri Padmanabhaswamy temple in Kerala.

**Seshammal & others versus State of Tamil Nadu (1972):** SC held that the **appointment of an Archaka to a temple would be a secular function**, and only the performance of religious service by those priests would be an integral part of the religion.

## 1.8. THE CINEMATOGRAPH (CERTIFICATION) RULES, 2024

### Why in the News?

Under the **Cinematograph (Amendment) Act, 2023**, the Ministry of Information and Broadcasting, has notified the **Cinematograph (Certification) Rules, 2024**, replacing the **Cinematograph (Certification) Rules, 1983**.

## Film Certification in India

- Film certification is **the end product of the process of previewing of film**, and it includes-
  - **a decision either not to allow a particular film or public viewing or**
  - **to allow it with certain deletions and/or modifications or**
  - **at least proper categorization of the films.**
- The CBFC or the Central Board of Film Certification was set up in Mumbai with several regional offices to regulate the public exhibition of films under provisions of the Cinematograph Act, of 1952.
  - CBFC is a **Statutory body** under **the Ministry of Information and Broadcasting.**
  - **9 regional offices:** Mumbai, Chennai, Kolkata, Bengaluru, Thiruvananthapuram, Hyderabad, New Delhi, Cuttack and Guwahati.
- The Board of Film Certification shall also ensure that the film-
  - Is judged in its **entirety from the point of view of its overall impact**; and
  - Is examined **in the light of the period depicted in the films and the contemporary standards of the country** and the people to which the film relates provided that the **film does not deprave the morality of the audience.**
- The SC judgement in **S. Rangarajan Etc. vs P. Jagjivan Ram, 1989** said that a film motivates thought and action and assures a high degree of attention and retention as compared to the printed words.
  - Therefore, certification by prior restraint is not only desirable but also necessary.

Categories of Film Certification	
Category	Certified Audience
U	Universal and without restrictions
UA category into three age-based categories: <ul style="list-style-type: none"> <li>• <b>Seven years (UA 7+)</b></li> <li>• <b>Thirteen years (UA 13+)</b></li> <li>• <b>Sixteen years (UA 16+), instead of twelve years.</b></li> </ul>	Without restrictions, but subject to guidance of parents or guardians.
A	Only for adults
S	Only to members of any profession or class of persons.

### Key Aspects in the Cinematograph (Certification) Rules, 2024

- **Terms of office:** A member of the Board shall hold office during the pleasure of the Central Government.
- **Representation of women:** It stipulates that 1/3<sup>rd</sup> of the members in the Board shall be women and preferably half shall be women.
- **Temporary absence of Chairperson:** Central Government may nominate a member of the Board who will discharge the functions of the Chairperson until the Chairperson resumes their duties.
- **Constitution of advisory panels:** The Central Government shall constitute an advisory panel at each of the regional offices of the Board.
- **Improved efficiency:** By **reducing timelines** for the **processing of film certification** and **adopting complete digital processes** for eliminating all transactional time.
  - It will **streamline and modernize** the film certification process for **the digital age.**
- **Further classification of UA:** Sub-division of the existing UA (Unrestricted with Caution) category into three more age-based categories (See infographic).
  - It will **ensure young viewers** are exposed to **age-appropriate content. It would be voluntary.**
- **Provision for priority screening:** For expediting the screening of film screening for certification, in case of any urgency felt by filmmaker(s) due to their prior commitments to release the film.
  - **This step is in line with the motto of 'Ease of Doing Business'.**
- **Change of Category of Film for Television:** Recertification of the edited film for Television broadcast, as only Unrestricted Public Exhibition category films can be shown on television.
- **Perpetual validity of certificates:** Removal of the restriction on the validity of the **certificate for 10 years.**

### Other Key Provisions of Cinematograph (Amendment) Act, 2023

- It prohibited the **unauthorised recording and unauthorised exhibition** of films and made it a punishable offence under the provisions of the **Copyright Act, of 1957.**
- Act omitted section 6(1) of the 1952, Act as directed by Supreme Court in the **Union of India vs KM Shankarappa Case, 2000** which states that the Centre cannot exercise revisional powers on films already certified by the CBFC.

## Issues with Film Certification in India

- **Over-the-top (OTT) platforms:** Film certification **does not regulate content on over-the-top (OTT) platforms.**
- **Censorship and Content Restrictions:** Excessive censorship could potentially **hinder artistic freedom and creative expression.**
- **Delays:** There are concerns about the CBFC's capacity to handle the volume of films submitted for certification in a timely and efficient manner.
- **Fails to tackle online piracy:** It falls short in **addressing the complexities of online piracy**, leaving **loopholes such as mirroring servers.**
  - It does not address instances of **film piracy that originate in foreign countries.**
- **Legal Challenges:** The certification process has been challenged in court multiple times.
  - Recently a petition was filed demanding the revocation of the certificate for the movie 'Adipurush' for allegedly hurting religious sentiments.

## Conclusion

While streamlined processes and diverse representation in the revamped Cinematograph (Certification) Rules, 2024 are positive steps, concerns linger over censorship, content control etc. Striking the right balance between creative freedom and societal responsibility remains the true test ahead.

### Related news

- The Ministry of Information & Broadcasting (MIB) recently **introduced guidelines aimed at enhancing accessibility standards for persons with hearing and visual impairments** in the public exhibition of feature films in cinema theatres.
- This initiative **aligns with the Rights of Persons with Disabilities Act, 2016 (RPwD Act)**, which mandates government action to promote universal access and inclusion in information and communication, including access to films.

## 1.9. NEWS IN SHORTS

### 1.9.1. NO PARLIAMENTARY IMMUNITY FOR TAKING BRIBES: SUPREME COURT (SC)

- In **Sita Soren v. Union of India (2024)**, a seven-judge constitution bench of the SC **overruled** its 1998 judgment in the **PV Narasimha Rao case.**
  - In current judgement the SC said that Legislators cannot claim immunity from prosecution for taking bribes for speech/vote in the house:
- **Key highlights of Judgement:**
  - **Bribery is not immune:** MPs/MLAs **accused of taking bribes cannot claim any immunity** from prosecution under **Articles 105 and 194** of the Constitution.
    - ✓ **Article 105 (2)** confers on MPs **immunity from prosecution** in respect of **anything said or any vote** given by them in **Parliament** or on **any parliamentary committee.**
    - ✓ **Article 194(2)** grants similar protection to **MLAs.**
  - **Two-fold test:** Assertion of a privilege by an individual MP/MLA would be governed **by a twofold test:**
    - ✓ privilege claimed has to be **connected to collective functioning of the House, and**
    - ✓ **its necessity** must bear a **functional relationship** to the discharge of **essential duties of a legislator.**

- **Jurisdiction of criminal court:** Criminal courts are **not excluded from hearing bribery cases** against legislators merely because it may also be treated by the House as contempt or a breach of its privilege.
- **Scope of parliamentary privileges:** Purpose of parliamentary privilege to provide legislators platform to "speak" and "vote" without fear is equally **applicable to:**
  - ✓ **elections to the Rajya Sabha** and
  - ✓ **elections for the President and Vice President.**

### PV Narasimha Rao vs State (CBI/SPE), 1998

- In the **case**, allegations had arisen that **legislators of Jharkhand Mukti Morcha had accepted bribes to vote** in favour of the government **during a no-confidence motion** in 1993.
- In a **3:2 majority judgment**, a five-judge SC Bench held that **legislators enjoy immunity from criminal prosecution for bribery** as per Article 105(2) and Article 194(2) of the Constitution.

### 1.9.2. 'NITI FOR STATES' PLATFORM

- Government has launched the **'NITI for States' platform.**
  - It is a **comprehensive digital initiative** designed to empower States/UTs in their pursuit of national development goals.

- **Key Features of Platform:**
  - It offers a **centralised repository of valuable resources**, including best practices, policy documents, datasets, and NITI Aayog publications.
  - **Multilingual:** It will be available in **22 major Indian languages** and 7 foreign languages.
  - **Capacity Building:** Tailored digital training modules for officials at various levels (block, district, and state).
  - **Expert Help:** Specialized guidance through partnerships with leading institutions to address specific challenges.

### 1.9.3. TRIPARTITE AGREEMENT IN TRIPURA



- **Government of India, Government of Tripura, and The Indigenous Progressive Regional Alliance (TIPRA) &** and other stakeholders signed a tripartite agreement.
- **Agreement aims to amicably resolve all issues of indigenous people of Tripura** relating to history, land and political rights, economic development, identity, culture, and language.
- It will also constitute a **Joint Working Group/ Committee to implement mutually agreed points** and directs all stakeholders to refrain from resorting to any form of protest/agitation.

### 1.9.4. DIGITAL CRIMINAL CASE MANAGEMENT SYSTEM (CCMS)

- **Ministry of Home Affairs (MHA)** launches unique **Digital CCMS Platform**.
- Newly developed Digital CCMS was **designed by National Investigation Agency (NIA)**.
  - It is a **user-friendly** and **easy-to-deploy, customizable, browser-based software** to help State Police forces in their investigations and prosecution.
- **Significance of Digital CCMS:**
  - **Enable NIA personnel to better coordinate in terrorism and organized crime cases**, thereby improving justice delivery.

- Help State Police forces **organise, integrate and digitalise data generated during investigations**, such as case documents, extracted data, collected evidence, and charge-sheets presented to court.
- **Foster stronger cooperation** between central and state agencies including Anti-Terror Squads of State Police.
- Bring **standardisation** into investigations, **streamline compilation** of terror-related data, **improves conviction rates** in sensitive and complex cases across country.
- **Assist NIA and State Police forces' preparedness** to implement new Criminal laws such as Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita and Bharatiya Sakhsya Sanhita.
- Additionally, **MHA launched Sankalan app** – A compendium of New Criminal Laws by National Crime Records Bureau.
  - It is designed for **navigating through new criminal laws** as a bridge between old and new criminal laws.
  - It will **work in offline mode as well** and its availability has been ensured in far-flung areas.



 <p><b>SMART QUIZ</b></p>	<p>You can scan this QR code to practice the Smart Quiz of Polity at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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## 2. INTERNATIONAL RELATIONS

### 2.1. QUAD

#### Why in the news?

US House of Representatives has passed ‘**Strengthen US-Australia-India-Japan Cooperation**’ or **Strengthening the Quad Act**.

#### Key highlights of the Act

The act aims to strengthen joint cooperation between Quad’s four members, to promote a free, open, inclusive, resilient and healthy Indo-Pacific. Under the act:

- **Quad Intra-Parliamentary Working Group:** Established to facilitate closer cooperation between the US, Australia, India and Japan in the Indo-Pacific region.
- **Guidelines for annual meetings and group leadership** have been established.
- US Secretary of State to submit a **status update on Quad’s activities** and a **strategy for bolstering cooperation** on issues like-
  - preparing for the next pandemic,
  - co-developing new innovative technologies, and
  - deepening economic engagement and integration.

#### About QUAD

- **About:** Quad, formally **Quadrilateral Security Dialogue** is a plurilateral framework comprising **India, Australia, Japan, and the USA**.
- **Purpose:** It brings together these four countries with a shared commitment to work as a **force for global good** and to support an **open, free, and inclusive Indo-Pacific** that is **prosperous and resilient**.
- **Working:** Practical work of the Quad is taken forward through following **six Leader level Working Groups** on following six areas

#### QUAD Timeline



**2004:** Quad began as “**Tsunami Core Group**” after 2004 Indian Ocean tsunami, to provide humanitarian and disaster assistance to the affected region.



**2007: Formalised by** former **Japanese Prime Minister** and first Quad meeting took place on the sidelines of the ASEAN Regional Forum.

- Quad fell dormant for nearly a decade.



**2017: First official talks** took place in Philippines on the margins of the East Asia Summit.



**2021: First Virtual Quad Leaders’ Summit** held in US. Leaders released joint statement titled “**The Spirit of the Quad**”. It followed by, first **in-person meeting** at leaders’ level hosted by US.



**2022 and 2023: Second and third in-person Quad Leaders’ Summits** were hosted in **Japan**.



**2024: Next Quad Leaders’ Summit** is expected to be hosted by India.

Area	Steps taken
Climate	<ul style="list-style-type: none"> <li>• <b>Clean Energy Supply Chains Initiative</b> was announced to facilitate research and development and support energy transition.</li> <li>• <b>Quad Climate Change Adaptation and Mitigation Package (Q-CHAMP)</b> to increase access to early warning systems and climate data etc.</li> </ul>
Critical and Emerging Technologies	<ul style="list-style-type: none"> <li>• Cooperation with Palau to establish a deployment of <b>Open Radio Access Network (Open RAN)</b> capabilities, the first in the Pacific.</li> <li>• Launched <b>Quad Investors’ Network (QUIN)</b> as private sector-led platform to facilitate investments in strategic technologies.</li> </ul>
Cyber	<ul style="list-style-type: none"> <li>• Quad <b>Joint Principles for Secure Software and for Cyber Security of Critical Infrastructure</b> were released, to strengthen defences against cyber threats.</li> </ul>
Health Security Partnership	<ul style="list-style-type: none"> <li>• To evolve Quad Vaccine Partnership into a more <b>comprehensive Health Security Partnership</b> to promote coordination and collaboration.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• <b>Quad Infrastructure Fellowships Program</b>, to empower more than 1,800 of region’s infrastructure practitioners to design, build quality infrastructure.</li> <li>• <b>Quad Partnership for Cable Connectivity and Resilience</b>, to strengthen cable systems in the Indo-Pacific</li> </ul>
Space	<ul style="list-style-type: none"> <li>• To <b>exchange Earth observation satellite data</b> and analysis to help countries better adapt to climate change, prepare for natural disasters, and manage oceans and marine resources.</li> </ul>

## Significance of Quad for India

- **India's active engagement in Indo-Pacific:** Through QUAD, India can project greater influence in the Indo-Pacific region, which accounts for **half** of global maritime trade and over **60%** of global Gross Domestic Product and strategically important for India.
- **Boost to Act East:** QUAD contributes to India's strategic objectives of strengthening ties with countries in East Asia and Southeast Asia, ensuring maritime security, fostering economic engagement, and promoting peace and stability in the region.
- **Defence engagements:** India's bilateral security and defence ties with Australia, Japan and United States provide a significant boost to India's military capability.
- **Diverse areas of cooperation:** For example, Australia, India, and Japan have announced their intention to **launch a supply chain resilience initiative (SCRI)**.
- **Bolstering bilateral cooperation:** India's bilateral relations with 'like-minded' countries with the backdrop of the Quad can be strengthened further through information sharing agreements, arms exchange agreements, defence ties, and much more.
- **Economic advantage:** Economically, the Quad will also make India a preferred destination for investment, with supply chain disruptions caused by dependence on China.

### Other Quad initiatives

- **Indo-Pacific Partnership for Maritime Domain Awareness** for providing near-real-time, cost-effective maritime domain data to maritime agencies in the region, etc.
- **STEM Fellowships** to build ties among the next generation of Science, Technology, Engineering, and Mathematics (STEM) leaders.
- **Quad Debt Management Resource Portal** to address challenges of unsustainable debt financing.
- **Quad Partnership on HADR (an India-led initiative)** to provide timely and effective assistance in the Indo-Pacific region in the event of future incidents.

## Challenges to QUAD

- **Less institutionalisation:** In its current form, the Quad remains relatively lightly institutionalized. It is neither a security arrangement nor a trade group which could undermine its credibility and influence.
- **Seen as cold war mentality:** China has criticized the Quad diplomacy as reflective of a "Cold War mentality" and an attempt to establish an "Asian NATO".
- **Maintain its unique character:** Defining the Quad's purpose as distinct from other regional groupings like ASEAN, Pacific Islands Forum, and IORA has proven to be difficult.
- **Problem of delivery:** Quad is criticised for its inability to effectively promote its efforts. For example, it could not deliver promised "800 million COVID-19 vaccine doses".

## Way ahead

- **Focus on regional prosperity:** Quad serves as a pivotal stabilizing force in the Indo-Pacific, facilitating the evolution of an inclusive rules-based order. To achieve this, clarity on its contributions to regional prosperity and flexibility on security matters are essential.
- **Augment existing organisations in region:** QUAD, rather than replacing, should seek to augment other multi-laterals or regional organizations and provide an inclusive vision for cooperation.
- **Engage other players:** QUAD needs to proactively engage with regional partners in initiatives that resonate with their respective interests and priorities.
- **Balancing clarity and ambiguity:** By not explicitly highlighting traditional security concerns, such as potential Chinese military actions, the Quad can focus on areas of shared interests while minimizing the risk of direct confrontation with China.

### India's concerns within Quad

- **Possibility of reactivating tensions with China on different fronts:** India is the only country among the Quad members that shares its borders with China. This makes it imperative for India to ensure that Quad is not reduced to an anti-China grouping.
- **India's flexible approach:** India continues to nurture **flexible partnerships** with countries, including some that are antagonistic toward the Quad, like BRICS and SCO (Shanghai Cooperation Organisation).
- **Impact on other partners:** India's involvement in Quad could risk alienating other important Indian partners like Russia and Iran.

## 2.2. THE COMMONWEALTH

### Why in news?

The year 2024 marks 75 years since the creation of the **modern Commonwealth**, with the signing of the **London Declaration**.

## About Commonwealth

- **About:** It is a **voluntary association of countries**, most of which are formerly British colonies, collaborating on democracy, trade, and climate change.
- **Genesis:**
  - **The British Commonwealth of Nations:** At the **1926 imperial conference**, Britain and the Dominions (semi-independent countries) agreed as **equal members of a community within the British Empire**. They owed allegiance to the British monarch, but the UK didn't rule over them.
  - **India's Independence (1947):** India desired to become a republic, but it also wanted to stay a member of the Commonwealth.
  - **Adoption of London Declaration (1949):** Declared that republics and other countries could be part of the Commonwealth. Henceforth, the **Modern Commonwealth of Nations was established**.  
✓ Initially it comprised **eight members including India**.
- **Current Members: 56 members (including India)**
- **Working:** Commonwealth Heads of Government (CHOGM) **meet every two years (latest being in Rwanda in 2022)** to discuss pertinent issues and release a summit communiqué.

### Do you know?

- > Commonwealth member countries are **spread over every continent and ocean**
- > **Nauru is the smallest member country**, while the **most populous member country is India**.
- > **Half of the top 20 global emerging cities** are in the Commonwealth.
- > The **last four countries to join** the Commonwealth - Mozambique, Rwanda, Gabon and Togo - **have no historical ties to the British Empire**.

### Organizational Structure:

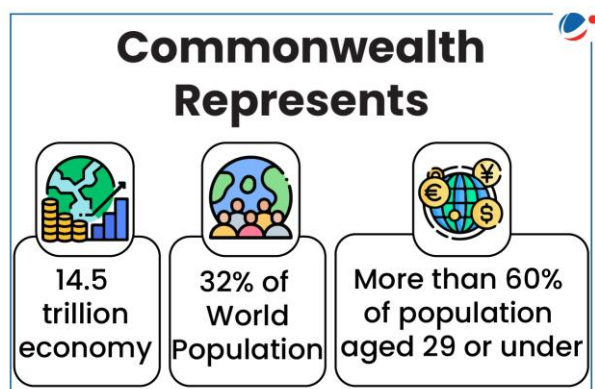
Organisations	Objective	HQ
The Commonwealth Secretariat (CS)	Supports members in achieving the organization's goals.	London
The Commonwealth Foundation (CF)	Promotes people's participation in democracy and development.	London
The Commonwealth of Learning (COL)	Advocates for open learning and distance education.	Burnaby, Canada

### Other Key Information

- The Commonwealth has **no charter, treaty or constitution**.
- All members are considered **equal**, and decisions are made by **consensus**.
- **Member countries choose the Head** of the Commonwealth.
- **Suspension of members** can occur following **breaches of human rights**, as seen in cases such as Fiji, Pakistan, Zimbabwe, Nigeria, and the Maldives.
- Commonwealth Games are quadrennial international multisport event contested by athletes from the Commonwealth of Nations.

### Major Initiatives of the Commonwealth

- **Promoting democracy and human rights:** Agreements such as the **1971 Declaration of Commonwealth Principles** and the **1991 Harare Commonwealth Declaration** underscore the Commonwealth's commitment to promoting these values.
- **Commonwealth charter (2012):** It sets out **16 core shared principles** such as Rule of Law, etc. to which all member countries have committed.
- **Role in Ending Apartheid:** Commonwealth's advocacy and support played a significant role in ending apartheid in South Africa.
- **Development Partnerships:** Initiatives such as **The Commonwealth Fund for Technical Co-operation (CFTC)**, **Commonwealth Scholarships Commission**, and **Overseas Development Assistance** to support development initiatives and economic growth in Commonwealth countries.
- **Empowering Youths:** It is the **only intergovernmental organisation to have a dedicated youth programme, Commonwealth Youth Programme(CYP)**.





- **Commonwealth Cyber Declaration (2018):** To support the development of a cyberspace that promotes social and economic development and protects digital rights.
- **Commonwealth Secretariat Countering Violent Extremism Unit:** Established in 2017 to provide support to member countries in developing their national strategies to counter violent extremism.
- **Commonwealth Climate Change initiatives:** This includes Commonwealth Clean Ocean Alliance, the commonwealth Blue charter project, Commonwealth Climate Finance Access Hub etc.

#### India's relations with the Commonwealth

- India is the **largest member state of the Commonwealth**, with nearly 60% of the total population of the association.
- It is the **fourth largest contributor** to the Commonwealth. It additionally contributes to CFTC, CF, CYP and COL.
- India hosted the **Commonwealth Summit (CHOGM)** and **Commonwealth Games (CWG) in 1983 and 2010 respectively in New Delhi.**
- **Commonwealth Sub Window** (US\$ 50 Million over 5 years) under the **India-UN Development Fund was established in 2018** to provide grant-in-aid assistance to Commonwealth members for projects related to SDG implementation and Climate Action.

#### Is the Commonwealth relevant in the present times?

- **Arguments in favour:**
  - **Election Observation Missions:** Since 1967, the Commonwealth has sent 140 missions to monitor elections in around 40 countries, promoting transparency and fair electoral processes and thereby **upholding commitment to democracy.**
  - **Evolving Membership:** Newer members, including non-former British colonies such as Togo and Gabon indicate the Commonwealth's attractiveness as a forum for cooperation and dialogue.
  - **Advocacy for Sustainable Development Goals (SDGs):** Commonwealth committed to the implementation of SDGs, particularly **Goal 16 focusing on peace and development.**
  - **Trade:** Bilateral costs for trading partners in Commonwealth countries are on average 21% less than between those in non-member countries.
  - **Unity through Shared Experiences:** Common bonds, language (English), history and strong people to people connect foster unity and collaboration among Commonwealth nations.
- **Arguments against:**
  - Critics points out that its **very existence is legitimizing colonization.** Members, as a sovereign nation, should focus on our international relationships in other platforms such as the UN, ASEAN and other bodies.
  - **Less relevant in addressing contemporary global issues:** For example, during the COVID-19 pandemic, there were concerns about the organization's effectiveness in coordinating responses and providing support to member states.
  - **Host Country Controversy:** The choice of Rwanda as the CHOGM host raises questions due to **concerns over its human rights record.**
  - **Lack of cohesion among members:** Nine Commonwealth countries abstained from UN voting **condemning Russia** in the on-going Russia-Ukraine war.
  - **Funding Constraints:** Limited funding to the Commonwealth's international bureaucracy hampers its effectiveness, with British investment primarily bilateral rather than directed to the Secretariat's programs.

#### Conclusion

Leveraging the Commonwealth network for mitigating climate Change, enhanced business, trade, and people-to-people connections and is essential for long-term growth and prosperity.

## 2.3. NORTH ATLANTIC TREATY ORGANIZATION (NATO)

#### Why in news?

Recently, the North Atlantic Treaty Organization (NATO) marked 75 years of its formation and **Sweden** has joined NATO as its **32<sup>nd</sup>** member.

## About NATO

- **Genesis:** Founded in 1949, with the signing of the **North Atlantic Treaty** or **Washington Treaty**, with the aim of acting as a deterrent to the threat of Soviet expansion in Europe after World War II.
- **Headquarters:** Brussels (Belgium)
- **Nature:** NATO is a **political and military alliance of 32 countries** from Europe and North America.
  - It is founded on the **principle of collective defence (Article 5 of the Treaty)**, meaning that if one NATO Ally is attacked, then all NATO Allies are attacked.
  - So far, **Article 5 has been invoked once** – in response to the 9/11 terrorist attacks.
- **Founding members (12):** Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, the United Kingdom and the United States.
  - **Finland** joined NATO in 2023.
  - **Ukraine formally submitted application to join NATO**, in 2022 and it received assurances at Vilnius Summit in 2023.
  - **EU members that are not a part of NATO are:** Austria, Cyprus, Ireland and Malta.
- **Purpose:** NATO provides a unique link between the Europe and North America (**the transatlantic link**), enabling them to consult and cooperate in the field of defence and security, and conduct multinational crisis-management operations together.
- **Funding: Every NATO country contributes** to the costs of running the Alliance, based on a cost-share formula derived from Gross National Income.
- **NATO Partnerships:** NATO maintains relations with more than 40 non-member countries and international organisations, called NATO partners, through following structures:
  - **Partnership for Peace(PfP):** A programme of **bilateral cooperation** with countries in **Euro-Atlantic area**. It include 18 partner countries, including Russia (partnerships with Belarus and Russia are currently suspended).
  - **Mediterranean Dialogue(MD)**, for countries in the Mediterranean region.
  - **Istanbul Cooperation Initiative (ICI)** for countries in the Middle East region.
  - **International organisations:** NATO cooperates with UN, EU and Organization for Security and Co-operation in Europe (OSCE)
- **2022 Strategic Concepts:** Adopted by NATO in its 2022 summit, it is a guiding document which **reflects the emerging security reality**.
  - It **identifies Russia as the most significant and direct threat** to Allied security,
  - **Addresses China for the first time** for encroaching on European interests and
  - **Includes other challenges** like terrorism, cyber and hybrid threats, maritime security etc.



### Key achievements of NATO

- **During Cold war:** During the Cold War, NATO played a major role in maintaining the tense peace of the Cold War and ensuring the war remained 'cold'.
- **Post-cold war:** NATO encouraged bilateral discussion between the United States and Russia through the Founding Act.
- **The Ukraine War:** NATO has publicly denounced the Russian actions in Ukraine and NATO member countries and allies have provided substantial aid to Ukraine.
- **Maritime security: Operation Sea Guardian** by NATO contributes to maintenance of a safe and secure maritime environment in the Mediterranean Sea.
- **Humanitarian aid:** For example, in response to devastating earthquakes in Türkiye in 2023, NATO set up temporary shelters for thousands of people.

## Story of NATO's Expansion in Eastern Europe

- The Soviet Union responded to NATO by creating its own military alliance with seven other Eastern European communist states in 1955, dubbed the **Warsaw Pact**.
- But after the **collapse of the Soviet Union in 1991**, a number of former Warsaw Pact countries became NATO members. This includes Hungary, Poland, Bulgaria, Estonia, Latvia among others.
- NATO's **Open door policy** (Article 10), allows any European country that can enhance and contribute "to the security of the North Atlantic area" to join.

## Implications of East ward expansion of NATO

- **Creating mistrust between Russia and West:** Expansion is seen as an aggressive act by Russia that threatens to undo decades of security cooperation and tilt Russia closer toward considering an anti-Western alliance with China and Iran.
- **Reverse trend of demilitarisation in region:** New NATO members would need to devote enormous funds to integrate with the Western command structure thereby diverting money from the productive sectors to military spending.
- **Sharpening existing divisions in Europe:** By admitting certain countries before others, NATO would sharpen already existing divisions in the region—between more prosperous North and the less prosperous South, between Eastern Europe and countries of former Soviet Union.
- **Increased Militarization in Europe:** Russia views NATO's expansion in Europe as a destabilizing factor. This perception has led to significant opposition from Russia, including the possibility of military intervention, as evidenced by its actions in Georgia and ongoing tensions in Ukraine.

## Major challenges faced by NATO

- **Funding Issues:** In 2006, NATO Defense Ministers agreed to a commitment that 2% of their countries' GDP would be allocated towards defence spending. However, the majority of NATO members do not meet this goal.
- **Right-Wing Nationalism:** With the spread of right-wing nationalism across Europe, discontent with international institutions like NATO and the EU is growing.
- **US' commitment to Europe's defence:** Former US President questioned value of the alliance and whether US should honour the Article 5 commitment.
- **Russian Aggression:** NATO's admission of several members since the fall of the Soviet Union, despite verbal assurances to Russia regarding no eastern expansion undermines trust between NATO and Russia, fuelling tensions and perceptions of aggression.
- **Rise of China:** Chinese expanding military posture in the Indo-Pacific; an economic and technological footprint that threatens Europe's own industrial and technological base pose a challenge to NATO.

## Conclusion

Embracing a comprehensive strategy of innovation, resilience-building, and strategic foresight will be imperative for NATO to navigate complex geopolitical realities and sustain its role as a pillar of international security and stability.

### Other related terms

- **Major Non-NATO Ally (MNNA) status:** It is a designation under U.S. law that provides foreign partners with certain benefits in the areas of defence trade and security cooperation.
  - Currently **18 countries** are designated as MNNAs, including: Brazil, Egypt, Israel, Japan, **Pakistan**, Philippines, Qatar, South Korea, Thailand, etc. (**Not India**).
- **NATO plus five:** The arrangement currently exists between the U.S, its NATO partners and five countries: Australia, New Zealand, South Korea, Japan and Israel.
  - It was formalized in 2019 and its primary goal is to enhance **defence cooperation among NATO's global partners**. The grouping was introduced in the context of the rising Chinese threat.

## 2.4. INTERNATIONAL MARITIME BOUNDARY LINE AND KACCHATHEEVU ISSUE

### Why in the news?

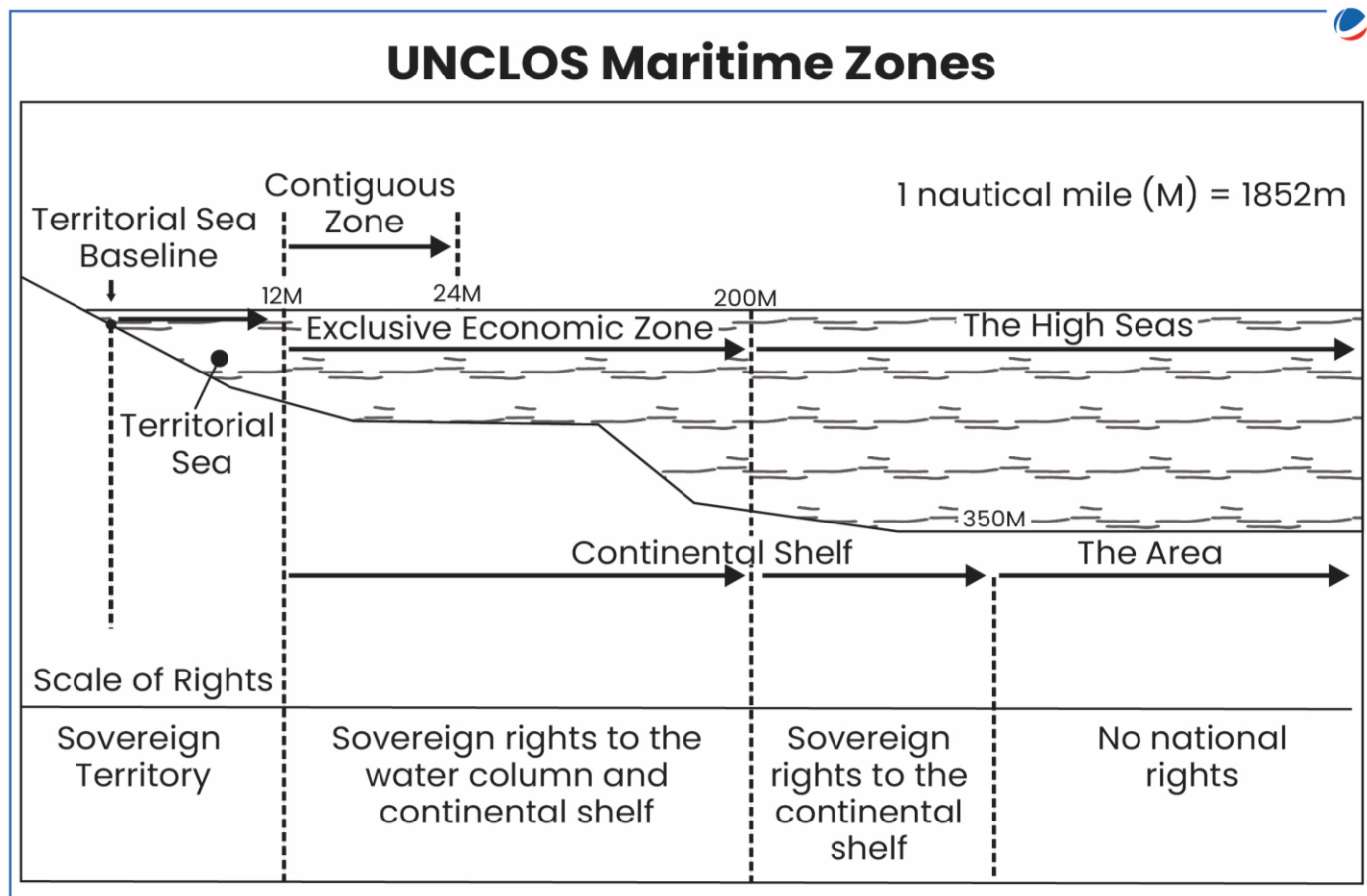
Sri Lankan fishermen protested against their Indian counterparts for their alleged poaching in the Sri Lankan waters by sailing to the International Maritime Boundary Line (IMBL).

### More on the news

- The **problem has three interrelated facets**: disagreements over Kachchatheevu island; poaching by Indian fishermen in Sri Lankan waters; and their use of trawlers that causes environmental damage.
- While Indian fishermen believe they are simply fishing in their **traditional grounds**, particularly around Kachchatheevu, Sri Lanka accuses them of **trespassing into its territorial seas**.
- Indian fishermen claim that **climate change and depletion of fish stocks** on the Indian side of the IMBL have driven them to sail farther out to sea.
- In 2023, **240 Indian fishermen were arrested** for alleged poaching in Sri Lankan waters, followed by the seizure of 35 trawlers.

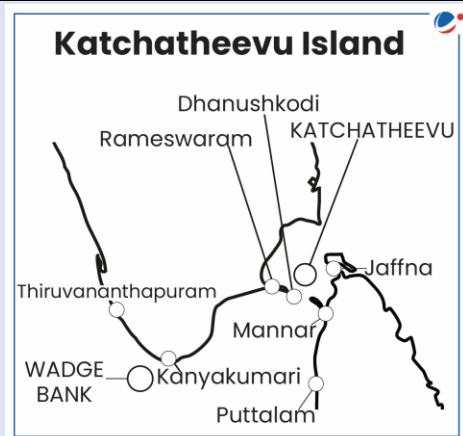
### About International Maritime Boundary Line (IMBL)

- The India-Sri Lanka IMBL was **delineated by the 1974 Maritime boundary agreement** demarcating it in the Palk Strait.
- It was determined based on principles under United Nations Convention on the Law of the Sea (UNCLOS).
- According to UNCLOS, Maritime boundaries are often defined by the **equidistance principle**, which asserts that a nation's marine boundary should follow a **medial line equidistant from the coastal areas of two neighbouring countries**.
- This boundary is established to define each country's exclusive economic zones, territorial waters, and other maritime zones, helping to **prevent disputes and conflicts over maritime jurisdiction**.



### The Katchatheevu Island Issue

- **About Katchatheevu and Wadge Bank**
  - Katchatheevu is a **285-acre patch** in the sea within the maritime boundary line of Sri Lanka.
  - It is **located to the northeast of Rameswaram** and southwest of Sri Lanka's **Delft Island**.
  - It was created by a 14th-century **volcanic eruption**, is 1.6 km in length and just 300 metres wide at its widest point.
  - **Wadge Bank** is **one of the world's richest fishing grounds** and in a much **more strategic part of the sea than Katchatheevu Island**.
- **Article 15 of UNCLOS** allowed exemptions from using the median line to determine maritime boundaries, acknowledging adjustments agreed upon by the contracting nations.
- **1974 Agreement between India and Sri Lanka** established an adjusted equidistant line under this exemption. As a result, Katchatheevu Island fell within Sri Lanka's maritime boundaries.
  - Indian fishermen were given access to Katchatheevu for rest, for drying of nets and for the annual St. Anthony Church festival.
- **Later, the 1976 agreement between the countries** settled the maritime boundary between by giving sovereign rights to India over **Wadge Bank** near Kanyakumari.
  - **Sri Lankan fishing vessels were prohibited from fishing** in the Wadge Bank, except for a limited number under specific conditions.



## 2.5. INDUS WATER TREATY

### Why in news?

India has marked the completion of the Shahpur Kandi Barrage on the **Ravi River, stopping the water flow to Pakistan.**

### More on news

- India has exclusive rights to the water of the Ravi River under the **Indus Water Treaty**.
- At present, some of the water of the River Ravi is going waste through the Madhopur Headworks downstream to Pakistan.
- Now, with the Shahpur Kandi Dam project, India will redirect 1,150 cusecs of water towards J&K, Punjab, and Rajasthan, **bolstering agricultural and hydropower prospects** in the region.
- The Shahpur Kandi Barrage is a dam on the Ravi River in Pathankot district, Punjab. It is **part of a multi-purpose river valley project**, featuring two hydel power projects with a total installed capacity of 206 MW.

### About Indus Waters Treaty (IWT)

- **Genesis:** IWT was signed in 1960, between **India and Pakistan and brokered by the World Bank** (which was also a signatory).
- **Objective:** The treaty fixed and delimited the rights and obligations of both countries concerning the use of the waters of the Indus River system.
- **Provisions for water usage rights:**
  - IWT allows India unrestricted use of **three eastern rivers Ravi, Beas, and Sutlej**.
  - Pakistan has control over **three western rivers Indus, Jhelum, and Chenab**.
    - ✓ Can be used by India with certain restrictions (for irrigation, transport and power generation).

### Background of Indus Water Treaty

- A **bilateral agreement was signed between Punjab and J&K in 1979** for construction of RanjitSagar Dam (Thein Dam) and Shahpurkandi Dam was to be taken up by Punjab Govt.
- **RanjitSagar Dam was commissioned in 2000.**
- The **foundation stone for the Shahpur Kandi Barrage Project was laid in 1995**. However, the project faced several disputes between the governments of Jammu and Kashmir and Punjab, leading to its suspension for over four and a half years.



- **Implementation:** The treaty required the **creation of a Permanent Indus Commission**, with a commissioner from each country, to maintain a channel for communication and is required to meet at least once every year.
- **Mechanism for resolving disputes: IWT provides 3 Step Dispute Resolution Mechanism viz.**
  - **Step 1: Permanent Indus Commission-** to resolve questions about implementation of the treaty.
  - **Step 2: Neutral Expert-** Appointed by World Bank to deal with **unresolved differences** on water sharing and involves rendering a **binding decision**.
  - **Step 3: Court of Arbitration (CoA)-** If a neutral expert fails, the dispute goes to CoA. It is a seven-member arbitral tribunal, determines its own procedures and decisions by majority vote.
    - ✓ Neutral Expert and CoA steps are mutually exclusive, i.e. only one of them can be used at a time to address a particular dispute.

### Issues with the treaty

- **Pakistan's frequent opposition to the Indian projects:** The opposition is majorly on the issue that whether these projects adhere to the **technological criteria** outlined in the treaty. It is evident from **Pakistan's opposition to Kishanganga Hydroelectric Project (KHEP)** on Jhelum River and **Ratle Hydroelectric Project** on River Chenab.
- **Limitations of Judicial Recourse:** India seeks resolution of differences through a **neutral expert (interprets the treaty in spirit)**, while Pakistan has opted to approach the Permanent Court of Arbitration (PCA) which **interprets the treaty in letter**.
  - PCA unanimously rejected India's concerns in **July 2023**, rendering a **legally binding decision on both sides without an appeal**, although India rejected the verdict.
- **Strained bilateral relations:** Treaty gets affected by the overall developments in the India-Pakistan relationship. For instance, the **biannual talks between the commissioners of the Indus treaty** were suspended due to the frequent use of state-sponsored terrorism by Pakistan.
- **Impact of climate change:** Climate change has altered the form, intensity and timing of precipitation and runoff. The partitioning of rivers prescribed by the IWT does not account for **potential shifts in water availability caused by climate change**, undermining its efficacy in ensuring equitable water allocation.
- **Conflict-resolution method through a third-party guarantor:** The World Bank is the guarantor of IWT and relies on the riparian to report any issue related of illegal intervention in the river flows. However, there is no definite way of knowing if illegal intervention really happened or it is only a case of low seasonal flows due to climate variability.
- **No regular data sharing as planned in the treaty:** The flow data sharing is significantly important to understand the dynamics of river basin in totality.
- **Technical nature of the Treaty:** The treaty's provisions are **highly technical in nature**, prompting diverse and wide-ranging interpretations.

### Way Forward

- **Revisiting the IWT:**
  - Water experts believe that countries need to **take into account the technological advances**, which were absent at the time of drafting the IWT.
  - **Inclusion of Principles of International Water Law:** Principles of **Equitable and Reasonable Utilisation (ERU)** and **No Harm Rule (NHR)** can help bridge differences between the countries and ensure predictability to a certain extent in water allocation.
- **Indus Water Commissioners from both sides should be empowered** to work together and make rational decisions **uninfluenced by the political situations**. Regular meetings between both sides and sharing of designs and data can help to prevent future problems.
- **Implement adaptive measures**, such as improving water storage and management practices, to ensure the long-term sustainability of the river and its tributaries so as **to address the challenges posed by climate change**.
- **Promoting open data policy** for promoting transparency and applied scientific research.

#### Principles of International Water Law

- **Based on:** The **Helsinki Rules 1966** and **The UN Watercourses Convention, 1997**
  - The UN Convention on the Law of the Non-Navigational Uses of International Watercourses (the UN Watercourses Convention) is the **only treaty governing shared freshwater resources that is of universal applicability**.

- It provides a framework of principles and rules that may be **applied and adjusted to suit the characteristics of particular international watercourses**.
- **Principle of ERU: Entitles each basin state to a reasonable and equitable share of water resources** for beneficial uses within its own territory.
  - It rests on a **foundation of shared sovereignty**, equality of rights and it **does not necessarily mean equal share of waters**.
- **Obligation not to cause significant harm or No Harm Rule (NHR):** No state is allowed to use the watercourses in their territory in a way that would cause significant harm to other basin states or to their environment.
- **Other key principles:**
  - **Principles of notification, consultation, and negotiation**
  - **Responsibility to exchange data and information** regarding the state of the watercourse.
  - **Peaceful settlement of disputes**

## 2.6. INDIA-EFTA TRADE AND ECONOMIC PARTNERSHIP AGREEMENT

### Why in the news?


Recently, the India-European Free Trade Association (EFTA) signed a Trade and Economic Partnership Agreement (TEPA).

### More on the news

- The agreement comprises **14 chapters with the main focus on market access related to goods, rules of origin, trade facilitation**, trade remedies, sanitary and phytosanitary measures etc.
- **For the first time, India has signed an FTA with Members of EFTA.**

### What is EFTA?

- **About EFTA:** The EFTA was established in **1960** through the **Stockholm Convention**, to **promote closer economic cooperation and free trade in Europe**.
- **Members:** Presently, its members are **Switzerland, Norway, Iceland, and Liechtenstein**, which are not part of the European Union.
  - Austria, Denmark, United Kingdom, Portugal, Switzerland, Norway, and Sweden were initial members of EFTA.



### Data Bank

**EFTA**

- **13 million** Population
- **More than \$1 trillion** Combined GDP
- **9<sup>th</sup> largest** merchandise trader in World
- **5<sup>th</sup> largest** trader in commercial services

### India-EFTA Trade Relations

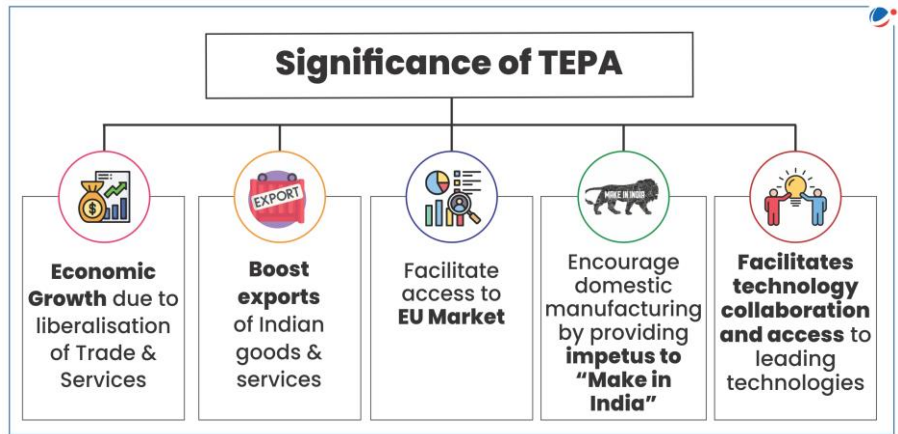
- **Total Merchandise Trade:** Exceeded **US\$ 22.33 billion** between EFTA and India in 2023.
  - **India Imported:** Natural pearls, precious stone metal etc. (81.7% of the trade).
  - **India Exported:** Organic chemicals, Pearls, precious stones metals etc.
- **Largest trading partner among EFTA: Switzerland** is the largest trading partner followed by Norway.
  - India has a **trade deficit with Switzerland due to gold imports**.

### Key Highlights of TEPA

- **Aim:** EFTA aims to:
  - Increase the stock of foreign **direct investments by USD 100 billion** in India in the next 15 years, and
  - **Facilitate the generation of 1 million direct employments** in India.
- **Legal Commitment:** For the first ever time in the history of FTAs, a legal commitment is made about promoting target-oriented investment and the creation of jobs.
- **Mutual Recognition Agreements:** TEPA has provisions for **Mutual Recognition Agreements in Professional Services** like nursing, chartered accountants, architects etc.
- **Tariff Reduction:** EFTA is proposing to eliminate tariffs on 92.2 % of its tariff lines, covering 99.6 % of India's exports.
- **Market Access:** EFTA's market access offer covers 100% of non-agri products and tariff concession on Processed Agricultural Products (PAP).
- **Intellectual Property Rights (IPR) Commitments:** The IPR commitments within TEPA are **aligned with TRIPS standards**, indicating a high level of commitment to IPR protection.

## Key issues regarding TEPA

- **Data Exclusivity:** Data exclusivity provisions, insisted by EFTA nations, **would prevent domestic generic drug manufacturers** from utilising data from preclinical tests and clinical trials.
  - **India has already rejected data exclusivity provisions.**
- **Exclusion from Trade Tariffs:** India has **excluded sensitive sectors like agriculture and dairy** from significant tariff reductions, acting as bone of contention in EFTA countries.
  - Sectors such as dairy, soya, coal and sensitive agricultural products are kept on the exclusion list and there will not be any duty concessions on these goods.
- **Asymmetric Trade Benefits to EFTA:** India agreed to significant tariff reductions on many goods over 10 years, while EFTA countries already have very low tariffs.
  - This **could lead to a wider trade gap** with India importing more than it exports.
- **Constraint with Investment Obligation:** Under TEPA, India has the **option to revoke tariff concessions** granted to EFTA nations **only after 18 years**, if they fail to meet a FDI commitment.



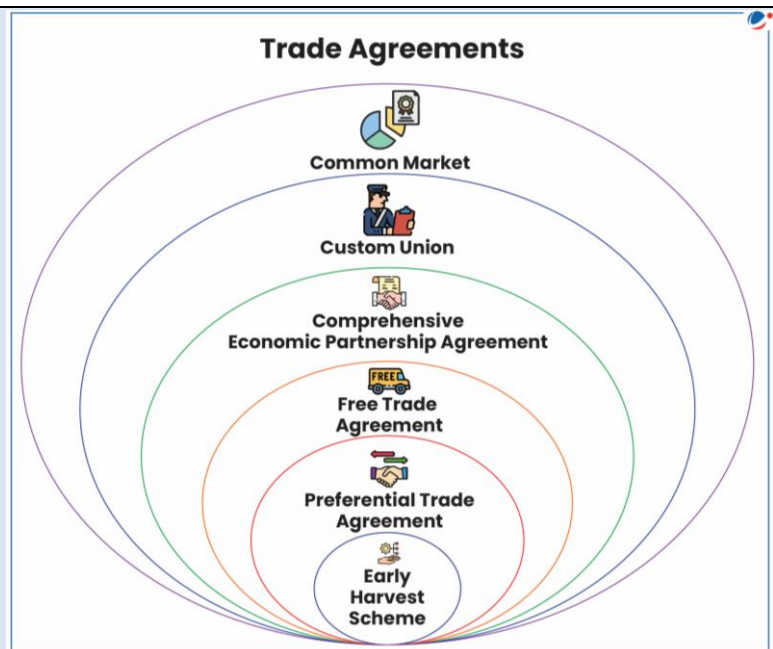
Addressing these concerns and effective implementation of the agreement is paramount for the relationship to grow. To future-proof this relationship, additional areas of cooperation can also be outlined.

## Potential areas of cooperation in future

- **MSME Integration:** Creating initiatives that **allow small and medium-sized businesses (MSMEs)** to be a part of trade flows and the global market.
- **Business Outreach:** Both sides can organise **workshops and seminars to educate businesses** on the agreement's specifics, tariff reductions, and new market opportunities.
- **Innovation and Sustainability:** Support **cooperation in fields including clean technologies**, renewable energy, and sustainable practices.

## Types of Trade Agreements

- **Early Harvest Scheme:** It is a precursor to an FTA/CECA/CEPA between two trading partners.
- **Preferential Trade Agreement (PTA):** In a PTA, two or more partners agree to **reduce tariffs on agreed number of tariff lines**. Example: **India-MERCOSUR PTA**
- **Free Trade Agreement (FTA):** FTAs are arrangements between two or more countries or trading blocs that primarily agree to **reduce or eliminate customs tariff and non-tariff barriers** on substantial trade between them. Example: **India Sri Lanka FTA**
- **Comprehensive Economic Partnership Agreement (CEPA):** Along with **reduction/elimination of tariffs**, it also encompasses agreement covering the regulatory issues.
  - Example: **India has signed CEPAs with South Korea and Japan.**
- **Custom Union:** In CU partner countries may decide to **trade at zero duty among themselves**, however they maintain common tariffs against rest of the world.
  - Example: **European Union**





- **Common Market:** A common market is a **Customs Union with provisions to facilitate free movements of labour and capital, harmonize technical standards across members etc.**
  - Example: **European Common Market**

## 2.7. INDIA-BHUTAN RELATIONS

### Why in news?

During his visit to Bhutan, the Prime Minister of India was conferred the "**Order of the Druk Gyalpo**", the highest civilian honor in Bhutan.

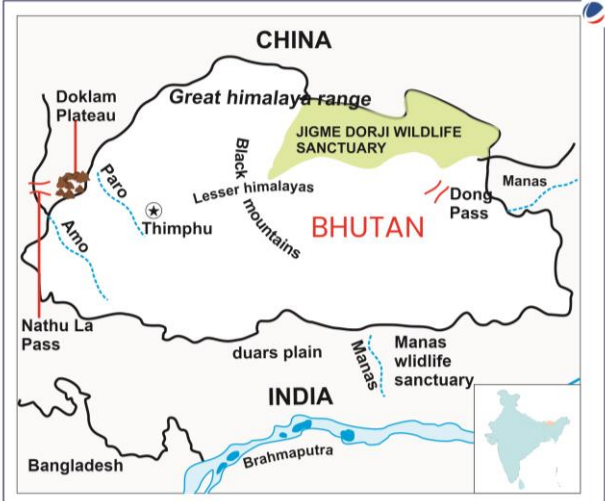
### More on News

- The "**Order of the Druk Gyalpo**" award recognizes Indian Prime Minister's contribution to strengthening India-Bhutan friendship and his **people centric leadership**.
- It also **honors India's rise as a global power**.
- Indian PM is the **first foreign leader to be given this prestigious award**.
- **Other key developments during the visit:**
  - India will provide **Rs.10,000 crore as financial support to Bhutan over next five years** to bolster cooperation in areas like energy, space etc.
  - **MoUs to establish two rail links** including Kokrajhar-Gelephu and Banarhat-Samtse to improve connectivity.
  - Both sides look forward to **commissioning of 1020 MW Punatsangchhu-II hydropower project** in 2024.

### Areas of Cooperation between India and Bhutan

- **Diplomacy:** The basic framework of the relationship is the **Treaty of Friendship and Cooperation signed in 1949**, which was renewed in **2007**.
- **Trade:**
  - India is **Bhutan's top trade partner** both as an import source and as an export destination, with **the balance of trade in India's favour**.
  - India is the **leading source of investments in Bhutan**, comprising 50% of the country's total FDI.
  - **Trade, Commerce, and Transit Agreement (2016)** establishes a **free trade regime** between the countries.
- **Development Partnership:**
  - Bhutan has been the **biggest beneficiary of India's external aid** in the budget for 2023-24.
  - Bhutan has decided to become a 'high-income' nation by 2034. India committed to stand for '**Brand Bhutan**' and '**Bhutan Believe**'.
- **Connectivity:** Bhutan is planning to build an international city- **Gelephu Mindfulness City**- that will **connect its border with Assam**.
- **Hydropower:** India constructed **four major hydroelectric projects** in Bhutan which are supplying electricity to India- **Kurichhu, Tala, Chukha and Mangdechhu**.
  - The 720 MW **Mangdechhu** was handed over to Bhutan in 2022.
- **Cultural Relations:**
  - **Buddhism** connects both countries on similar ideologies.

### About the country- Bhutan (Capital: Thimphu)



- **Political Features:**
  - **Landlocked country** between India and China in **Eastern Himalayas**.
  - Shares an **open border of 699 kms with four Indian states** (Assam, Arunachal Pradesh, West Bengal and Sikkim).
- **Geographical Features:** **All the rivers flow southward and join the Brahmaputra River in India.**
- **Other Key Facts:**
  - Bhutan is the **world's first carbon negative country**
  - Bhutan is **best known for its philosophy of promoting Gross National Happiness (GNH) over GDP**.

### Importance of Bhutan for India

- **Geostrategic importance:** Bhutan's strategic location, sharing borders with both China and India, makes it essential to India's national security.
- **Economic significance:** Bhutan has an **abundance of hydropower resources** to meet India's energy requirements.
- **Environmental cooperation:** Both nations can work together on **conservation, disaster management, and climate change adaptation** because of their shared Himalayan ecosystem.
- **Regional Integration** within SAARC and BIMSTEC.

- **The India-Bhutan Foundation**, established in 2003, aims to enhance people-to-people exchanges in the cultural field.
- **Security:**
  - **The Indian Military Training Team (MTRAT)** is permanently based in western Bhutan and assists and trains the Royal Bhutan Army.
  - India's Border Road Organisation (BRO) has built the majority of roads in Bhutan under **project 'DANTAK'**.
- **New initiatives of Cooperation:**
  - Launch of **RuPay, and BHIM app** in Bhutan, collaborating on a number of technology initiatives such as **'Digital Drukyl'**.
  - ISRO and Bhutan agency jointly developed satellite **'India-Bhutan SAT'**, launched by ISRO.
  - India is also helping Bhutan to **fill the shortages of STEM teachers in schools** of Bhutan.
  - Under the **Vaccine Maitri Initiative**, India gifted 5.5 lakh doses of the Made-In India Covishield vaccines to Bhutan.

### Major Challenges in India-Bhutan Relationship

- **Issues in hydropower trade:** India's past changes in **power purchasing policy, not able to fairly negotiate power tariff delay in completion of projects** (E.g. Punatsangchhu I & II) **by India**.
- **Hideout for militants:** India's North-East Militant outfits like the United Liberation Front of Assam (ULFA), National Democratic Front of Bodos (NDFB), etc. uses Bhutan for the hideout.
- **BBIN initiative:** The **Bangladesh Bhutan India Nepal (BBIN) Motor Vehicle Agreement** is on hold by Bhutan due to environmental concerns.
- **Increased financial burden on Bhutan** as India moved away from 60:40 model (60% grant, 40% loan) to 30:70 model.
- **China's presence:** Bhutan's border disputes with China like **Doklam** raises security concerns for India.

### Way Forward

- **Diversifying economic engagements:** Strengthening collaboration in fields such as fintech, space tech, and biotech can lead to a stronger partnership.
  - India will need to sustainably **invest in Bhutan's services sector** in line with its philosophy of Gross National Happiness (GNH).
  - India shall **leverage the Gelephu project** as an opportunity to deepen its partnership with Bhutan and **counter Bhutan's growing engagement with China**.
- **Initiating Trilogue with China:** Opening such communication channels can minimize uncertainties with regard to border disputes.
- **Improving people-to-people ties:** **Soft power diplomacy** can be induced **through Buddhism** and by encouraging more tourist activities.
- **Security measures:** Establish contact points between two countries and mechanisms for real time sharing of information regarding militant outfits.

#### India-Bhutan-China Triangle

It reflects the complex geopolitical dynamics as a result of India's close ties with Bhutan, China's rising influence in Bhutan, Bhutan's border disputes with China, and the broader India-China rivalry.

#### China's rising influence in Bhutan

- **Economic influence:** China accounts for **more than a quarter of Bhutan's trade**.
  - **Many Chinese State-owned companies** are involved in several **infrastructure projects in Bhutan such as Chukha and Punatshangchu hydropower project**.
  - **China dominates the telecom sector in Bhutan** laying down fibre optic cables, expanding mobile networks, and establishing internet access points.
- **Territorial assertiveness:** **Chinese assertive claim on territories** of Jakarlung and Pasamlung in north Bhutan and the **Doklam plateau in west Bhutan** highlights Bhutan's vulnerability to external pressures.
  - China has built a **new village known as Pangda near Doklam**.
  - In 2020, China began claiming 650 sq. km of the **Sakteng Wildlife Sanctuary** in Bhutan's eastern district of Trashigang.
- **Political manoeuvring:** The **first ever visit of Bhutan's Foreign Minister to China** in October 2023 was unprecedented as Bhutan and China do not maintain diplomatic relations.
  - During the visit, a **cooperation agreement for boundary delimitation and demarcation was signed**, indicating a **step towards normalizing relations**.

### Implications of increasing China's role in Bhutan for India

- **Threat to India's security interests:** Bhutan-China negotiated **Doklam border deal**, which will have Security implications for India, due to its **close proximity to Siliguri Corridor**.
- **Geopolitical Implications:** China's increased presence in Bhutan could upset the regional **geopolitical balance and dynamics**, potentially **heightening tensions between India and China**.
  - In 2017, a **military standoff** occurred between the Indian Army and the Chinese People's Liberation Army in the Doklam tri-junction.
  - **Access to Doklam would give China leverage over India's northeast part**, where it claims the Indian states of Arunachal Pradesh.
- **Erosion of India's Influence:** Close ties with China can **impact traditional pro-India foreign policy of Bhutan**.

## 2.8. NEWS IN SHORTS

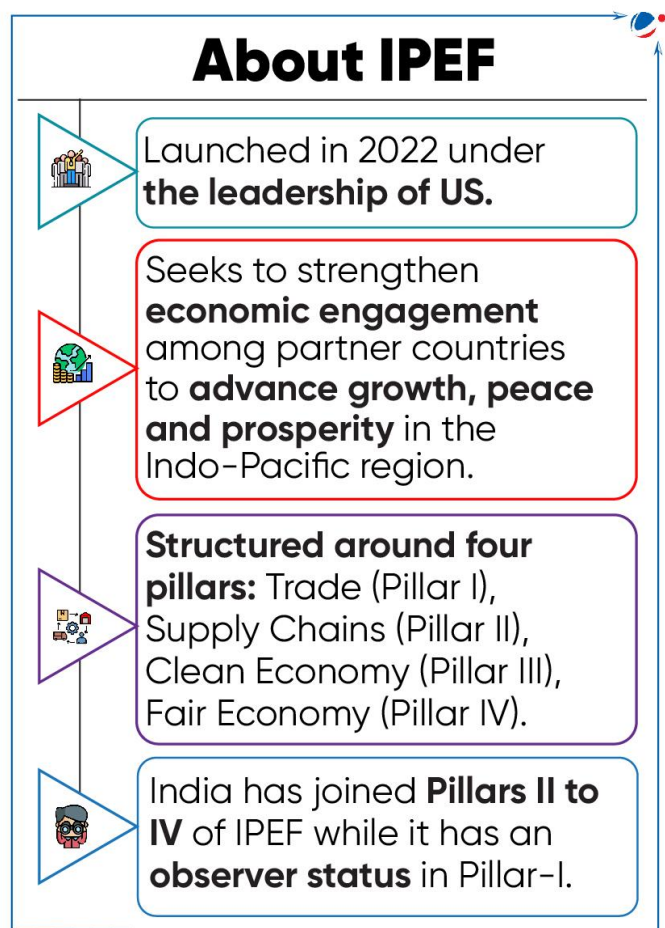
### 2.8.1. MINISTERIAL MEETING OF IPEFF HELD

- Union **Minister of Commerce & Industry** attends the ministerial meeting of **Indo-Pacific Economic Framework for Prosperity (IPEF)**.
- **Key highlights**
  - **Announced New effort under the Clean Economy pillar:**
    - ✓ **Four new Cooperative Work Programs** focusing on **carbon markets**, clean **electricity**, employment shifts in the move to clean energy, and **sustainable aviation fuels**.
    - ✓ **Details on the IPEF Catalytic Capital Fund:** Established in collaboration with Private Investment Development Group for climate infrastructure projects in IPEF economies.
  - **Published details text of key agreements**

Agreements	Highlight of the text
<b>Agreement on IPEF</b>	Establishes two ministerial-level bodies that will meet annually: <ul style="list-style-type: none"> <li>• <b>IPEF Council:</b> To consider matters affecting the <b>collective operation</b> of the IPEF agreements and Framework including accession of new members; and</li> <li>• <b>Joint Commission:</b> To monitor the work under Pillars II-IV</li> </ul>
<b>Clean Economy Agreement</b>	<ul style="list-style-type: none"> <li>• Defines the <b>scope</b> of the agreement</li> <li>• Calls for <b>partnership with its Indigenous people to enhance efforts to transition to clean economies</b>.</li> <li>• Recognizes important role of <b>nuclear energy</b> and <b>civil nuclear cooperation</b> in ensuring energy security.</li> </ul>
<b>Fair Economy Agreement</b>	<ul style="list-style-type: none"> <li>• Defines <b>scope</b> of the agreement</li> <li>• Clarifies that this Agreement shall <b>not affect the rights or obligations</b> of a Party under any other agreement including <b>UNCAC</b> (United Nations Convention</li> </ul>

against Corruption) and **UNTOC** (United Nations Convention against Transnational Organized Crime).

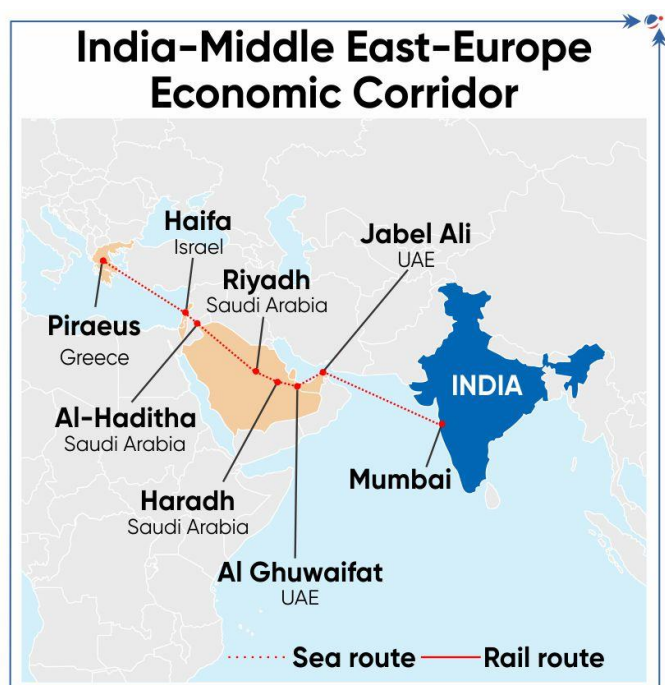
- Calls for **International Cooperation** for **identification**, freezing, and confiscation of **proceeds of crime** derived from offences established as **per the UNCAC**.



### 2.8.2. IMEC

- Cabinet approves **Inter-Governmental Framework Agreement (IGFA) with UAE** on India-Middle East Europe Economic Corridor (IMEC).

- **Aim of the IGFA:** To enhance bilateral relations and further strengthen relations between the two countries in the Ports, Maritime, and Logistics sectors.
  - It also includes exploring further potential of **future joint investment and collaboration** for development of the IMEC.
- **About IMEC**
  - It is a **proposed transit network** that aims at integration of Asia, Europe, and the Middle East.
    - ✓ It consists of **railroad, ship-to-rail networks** (road and sea), and **road transport routes** (and networks)
  - **MoU was signed** between India, European Union, France, Germany, Italy, Saudi Arabia, UAE, and the US at **New Delhi G20 summit to establish it.**
- **Significance of IMEC**
  - **Enhancing Prosperity:** Through an increased flow of energy and digital communications.
    - ✓ The combined GDP of IMEC nations is about **40 percent of the world's total GDP.**
  - It offers an alternative approach to **China's Belt and Road Initiative.**
  - It will make the **global supply chain more resilient.**
  - Speed up **trade between India and Europe** and help India to increase **strategic engagement with the Arab world.**
- **Challenges:** Complex geopolitics of the region (present Israel-Hamas crisis), lack of commitment regarding the financial cost, etc.



To know more about India-Middle East-Europe Economic Corridor (IMEC), please refer to **September 2023 Monthly Current Affairs Article 2.1.2. IMEC**

### 2.8.3. INDIA AND BRAZIL HOLD FIRST '2+2' MINISTERIAL DIALOGUE

- In 2+2 (Defence and Foreign) Dialogue, both countries explored ways to expand **cooperation in energy, critical minerals, technology, and counter-terrorism.**
  - 2+2 Ministerial Dialogue is a **meeting of Foreign and Defense Ministers from two countries** to discuss issues of mutual interest.
    - ✓ India has 2+2 Ministerial Dialogue with **US, Australia, Japan** etc.
- **India-Brazil Bilateral Relations**
  - **Political Relations: Strategic Partners** since 2006.
  - **Cooperation in Multilateral Forums:** It includes UN, G20, BRICS, IBSA (India, Brazil and South Africa) etc.
    - ✓ **G4 (Brazil, Germany, India, and Japan),** support each other for permanent seats in UNSC.
    - ✓ Part of India led alliance such as **International Solar Alliance (ISA).**
    - ✓ Also enabling India close cooperation with **MERCOSUR** (regional trading bloc in South America).
  - **Trade: India is 5th largest trading partner** of Brazil (2021).
  - **Space:** ISRO launched Brazil's satellite **Amazonia-1** (2021).
  - **Security:** Joint statement and action plan for enhancing defense and security cooperation were signed (2020).
  - **Cooperation in Bio-fuels:** Brazil is the world's second-largest producer of biofuels. It is also part of **Global Biofuels Alliance (GBA),** an India-led Initiative.
- Mechanism like **Trade Monitoring Mechanism, Strategic Dialogue (NSA)** etc. are playing key role in enhancing relationship by resolving issues.

### 2.8.4. OPERATION INDRAVATI

- India launched Operation Indravati to evacuate its nationals from **Haiti to the Dominican Republic.**
- As part of the ongoing operation, 12 Indians were evacuated.
- Haiti has been under a **state of emergency** after some armed groups attacked the country's largest prison in Port-au-Prince earlier this month.

### 2.8.5. GAS EXPORTING COUNTRIES FORUM (GECF)

- 7th GECF Summit concluded with **Algiers Declaration,** which is related to **Natural Gas for a Secure and Sustainable Future.**

- **About GECF**

- GECF, an intergovernmental organisation, seeks to **build a mechanism for a meaningful dialogue between gas producers and consumers** to improve the stability and security of supply and demand in gas markets around the world.
- **Vision:** To make natural gas a pivotal resource for inclusive and sustainable development.
- **Members:**
  - ✓ **Full-fledged Members:** Algeria, Bolivia, Egypt, Equatorial Guinea, Iran, Libya, Nigeria, Qatar, Russia, Trinidad and Tobago, UAE and Venezuela. **India is not a member.**
  - ✓ **Observer Status:** Angola, Azerbaijan, Iraq, Malaysia, Mauritania, Mozambique, Peru and Senegal.
- Together, they represent 69% of the world's gas reserves, 39% of the marketed production, and 40% of global gas exports.
- GECF member countries collectively account for **more than half of world LNG exports (51%).**

### 2.8.6. AFRICA CLUB

- African Union established **Africa Club** [also known as **Alliance of African Multilateral Financial Institutions (AAMFI)**] at its 37th Summit.
- **About Africa Club**
  - **Coalition of African Multilateral Financial Institutions (AMFIs)** to address shortcomings in global and continental financial architecture.
  - Seeks to **introduce innovative financial instruments** and provide a venue for debt management discussions.
  - **Core membership:** African Export Import Bank, Trade and Development Bank, Africa Finance Corporation, African Reinsurance Corporation, etc.
  - **Membership** will be **open to all African Multilateral Financial Institutions.**

### 2.8.7. SUMMIT FOR DEMOCRACY

- Prime Minister addressed the third edition of Summit for Democracy.
- **Summit for Democracy**
  - **Genesis:** Launched by the US in 2021, the summit has emerged as an important **platform where democracies share experiences** and learn from each other.
  - **Aim:** To **strengthen democratic institutions, protect human rights,** and accelerate the **fight against corruption** globally.
  - **Presidential Initiative for Democratic Renewal:** It was launched in the 1st summit and supports initiatives for **advancing technology** for

democracy, defending **free and fair elections, independent media,** etc.

- **US also provides financial aid** to this initiative.

### 2.8.8. GULF OF TONKIN

- China has delineated the **baseline in the Gulf of Tonkin**, known in Chinese as **Beibu Gulf**.
  - Baselines, under UNCLOS 1982, are used to **determine limits to territorial waters and Exclusive Economic Zones.**
- Gulf of Tonkin is located **off the coast of Northern Vietnam and Southern China**.
  - Until now both countries have maintained **friendlier relations in this Gulf despite their overlapping claims in South China Sea.**
  - The **Red River** (which flows across China and Vietnam) **empties** into this gulf.



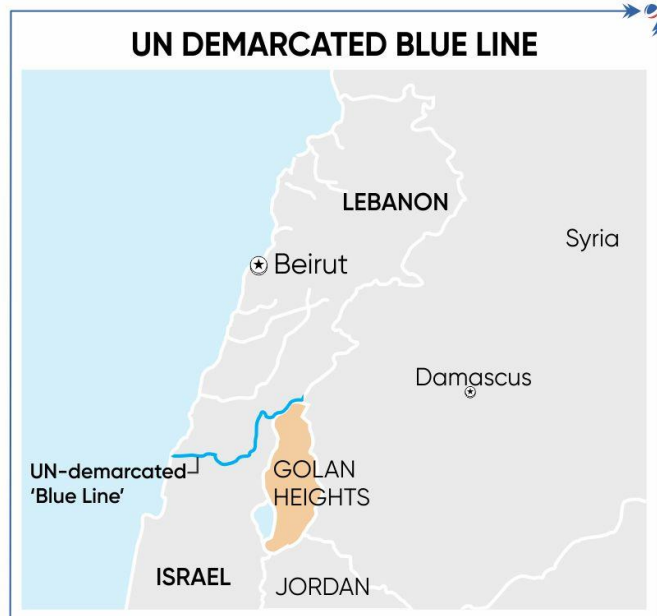
### 2.8.9. DARIEN GAP

- Darien Gap has emerged as one of the **world's most dangerous and fastest-growing border crossings** for illegal immigration.
  - This route is taken when people **migrate from South America to North America.**
- **About Darien Gap**
  - Connects **northern Colombia** and **southern Panama.**
  - Part of the **Isthmus of Panama.**
    - ✓ **Isthmus** is a narrow piece of land, with water on each side, that joins two larger pieces of land.
  - It is a hot, humid area marked by tropical rainforests, mangrove swamps, and low mountain ranges with **cloud forest vegetation** (tropical mountainous regions).

## 2.8.10. BLUE LINE

- US envoy to Lebanon emphasised situation along the **blue line** has to change to guarantee peace and security.
- **About Blue line:**
  - **Israel and Lebanon have no official border** separating them, except the Blue Line.
  - It was **set by the United Nations in 2000**. It is made of blue barrels and runs from the Mediterranean to the Golan Heights to the east.
  - Its purpose was to **confirm the withdrawal of Israeli forces from the south of Lebanon**.

**Note:** Blue Line is also a learning ecosystem created by the UN System Staff College.



**SMART QUIZ**

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





# फाउंडेशन कोर्स सामान्य अध्ययन प्रारंभिक एवं मुख्य परीक्षा 2025

**इनोवेटिव क्लासरूम प्रोग्राम**

- प्रारंभिक परीक्षा, मुख्य परीक्षा और निबंध के लिए महत्वपूर्ण सभी टॉपिक का विस्तृत कवरेज
- मौलिक अवधारणाओं की समझ के विकास एवं विश्लेषणात्मक क्षमता निर्माण पर विशेष ध्यान
- एनीमेशन, पॉवर प्वाइंट, वीडियो जैसी तकनीकी सुविधाओं का प्रयोग
- अंतर - विषयक समझ विकसित करने का प्रयास
- योजनाबद्ध तैयारी हेतु करेंट ओरिएंटेड अप्रोच
- नियमित क्लास टेस्ट एवं व्यक्तिगत मूल्यांकन
- सीसेट कक्षाएं
- PT 365 कक्षाएं
- MAINS 365 कक्षाएं
- PT टेस्ट सीरीज
- मुख्य परीक्षा टेस्ट सीरीज
- निबंध टेस्ट सीरीज
- सीसेट टेस्ट सीरीज
- निबंध लेखन - शैली की कक्षाएं
- करेंट अफेयर्स मैगजीन

नोट: ऑनलाइन छात्र हमारे पाठ्यक्रम की लाइव वीडियो कक्षाएं अपने घर पर ऑनलाइन प्लेटफॉर्म पर देख सकते हैं। छात्र लाइव चैट विकल्प के माध्यम से कक्षा के दौरान अपने संदेह और विषय संबंधी प्रश्न पूछ सकते हैं। वे अपने संदेह और प्रश्न नोट भी कर सकते हैं और दिल्ली केंद्र में हमारे कक्षा सलाहकार को बता सकते हैं और हम फोन/मेल के माध्यम से प्रश्नों का उत्तर देंगे।

**DELHI: 10 अप्रैल, 9 AM | 14 मई, 9 AM**

**LUCKNOW: 5 जून**

**BHOPAL: 11 जून**

**JAIPUR: 23 अप्रैल**

**JODHPUR: 22 अप्रैल**

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**Ease of Revision:** Content categorisation is based on subjects or topics to make it easier for aspirants to locate and revise specific areas



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**Crisp Material:** Crisp points have been used in the articles. It allows aspirants to easily do multiple revisions in limited span of time.



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PT 365 is a time and tested document. In the previous years, it has helped lakhs of candidates to cover current affairs in a holistic way. It's impactful features make it easier for aspirants to understand current affairs and excel in the UPSC Civil Services examination.





# 3. ECONOMY

## 3.1. WORLD TRADE ORGANIZATION (WTO)

### World Trade Organization (WTO)

**About WTO**

WTO is the **international organization** whose primary purpose is to open trade for the benefit of all. It is the only global international organization dealing with the rules of trade between nations.

 <b>Established</b> 1 January 1995	 <b>Created by</b> Uruguay Round negotiations (1986-94)	 <b>Headquarters</b> Geneva, Switzerland	 <b>Members</b> ● 166 (Including Comoros and Timor-Leste, 2024). ● India is founding member of WTO.
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**Objective**

To help its members use trade as a means to **raise living standards, create jobs and improve people's lives.**

**Organizational Structure**

<b>Ministerial Conference</b> <b>Highest decision-making body of the WTO</b> and usually meets every two years.	<b>General Council</b> ● WTO's decision-making body in Geneva, <b>meeting regularly to carry out the functions of the WTO.</b> ● The General Council also meets, as the <b>Dispute Settlement Body and as the Trade Policy Review Body.</b>
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**Functions**

Administering WTO <b>trade agreements</b>	Forum for <b>trade negotiations</b>	Settling <b>trade disputes</b>	Monitoring <b>national trade policies</b>	<b>Technical assistance and training</b> for developing countries
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**Reports published by WTO**

World Trade Report	World Trade Statistical Review	Global Trade Outlook	WTO Annual Report
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**Key contemporary milestones**

Conclusion of landmark \$1.3 trillion **Information Technology Agreement.**

**2014**

The **revised Agreement on Government Procurement (GPA)** entered into force.

**2015**

**2017**

- **Trade Related Aspects of Intellectual Property Rights (TRIPS)** Agreement amended to ease poor countries' access to affordable medicines.
- WTO's **Trade Facilitation Agreement** entered into force.

**Last 5 Ministerial Conferences (MC)**

MC 9-Bali, 2013	MC 10-Nairobi, 2015	MC 11-Buenos Aires, 2017	MC 12-Geneva, 2022	MC 13 Abu Dhabi, 2024 (Latest)
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**Most pressing challenges**

- **Consensus between developing and developed countries:** WTO members have not been able to agree on new rules on agricultural goods, highlighting the conflicting interests between developing and developed countries.
- **Dysfunctional Dispute Settlement System (DSS):** The Appellate Body is now inoperative and the DSS is impaired, as the US began blocking appointments in 2016.
- **US-China Trade War:** Difficult trade relations between the two largest world economies and WTO members – the US and China – also puts a strain on the WTO.

**Detailed discussion on critical issues – Food Security, Fisheries Subsidies and Cross Border Remittances has been done in the subsequent articles.**



### 3.1.1. AGRICULTURE AND FOOD SECURITY

#### Why in the news?

WTO's 13th Ministerial Conference (MC13), Abu Dhabi concluded without a permanent solution to the public stockholding (PSH) issue, a demand raised prominently by India.

#### About PSH Policy

- **Objective:** The PSH makes it possible for the government to procure crops from farmers at MSP, and store and distribute these food grains to the poor.
- **DE MINIMIS limits:** Under global trade norms, a country's subsidy bill should not breach the limit of 10 % (for developing countries) and 5 % (for developed countries) of the value of production.
  - Currently, it is **calculated as the reference price for 1986-88.**

#### Global Divide over PSH

- **Developing Countries:** Apart from increasing this DE MINIMIS limit, India and developing countries have asked for amendments in the formula to calculate the price support subsidies given to farmers for government procurement.
- **Developed Countries:** Most developed countries claim that PSH is market-distorting and that there should be no export restrictions.

#### Peace Clause & India's Stand

- **Peace Clause:** WTO at the Ninth Ministerial Conference (MC9) in Bali and agreed to a "peace clause" as an interim solution for the public stockholding for food security.
  - It was agreed that the "peace clause" would remain in force till MC 11. However, due to non-consensus among the members, it was extended.
- **India's Demand:** India is pressing for a permanent solution to the issue of public stockholding (PSH).
  - As part of a permanent solution, India has asked for measures like amendments in the formula to calculate the food subsidy cap.

#### Why Permanent Solution to PSH is Important for India?

A permanent solution to PSH is crucial for India and other developing countries, as it would **legitimize higher subsidies for food stockholding programmes**. This would protect the interests of the **poor and vulnerable farmers** and take care of its domestic food security needs.

### 3.1.2. FISHERIES SUBSIDIES AGREEMENT

#### Why in the news?

WTO's ministerial conference ended with no decision on finding a permanent solution curbing fisheries subsidies that lead to over-capacity and over-fishing.

#### WTO Agreement on Fisheries Subsidies

- **Geneva Package:** The Agreement was adopted during the 12th Ministerial Conference of WTO in 2022 held in Geneva, Switzerland under the 'Geneva Package'.
- **Aim:** To curb harmful subsidies, which are seen as a key factor in the widespread depletion of the world's fish stocks.

## DOMESTIC SUPPORT IN AGRICULTURE: THE BOXES



**Amber Box:** Nearly all domestic support measures considered to distort production and trade (with some exceptions) fall into the amber box.



**Blue box:** Any support that would normally be in the amber box, is placed in the blue box if the support also requires farmers to limit production.



**Green Box:** Green box subsidies must not distort trade, or at most cause minimal distortion.

- **Not accepted yet:** Acceptance from two-thirds of WTO members is needed for the Agreement to come into effect. The agreement is still short of 39 countries (March 2024).
  - **India is not part of the agreement.**
- **Benefits:** It will have positive effects on the sustainability of marine fish stocks and fisheries –
  - By curbing subsidies to illegal, unreported and unregulated fishing
  - By prohibiting subsidies to fishing on overfished stocks
  - By prohibiting subsidies to fishing on the unregulated high seas
- **Special and Differential Treatment (S&DT):** Under S&DT, Developing Countries and Least Developed Countries (LDCs) have been allowed a transition period of 2 years from the date of entry into force of this Agreement.

### India's Demands

- **PPP and CBDR- RC:** Countries that have provided huge subsidies in the past and are responsible for the depletion of fish stocks, should take more obligations to prohibit subsidies based on the '**polluter pay principle**' (PPP) and '**common but differentiated responsibilities and respective capabilities**' (CBDR-RC).
  - The agreement must also incorporate special and differential treatment (S&DT) to protect the livelihood and growth needs of the fishing community in developing countries.
- **Moratorium on Distant Water Fishing Nations:** India urged the Members to introduce a moratorium on subsidies by Distant Water Fishing Nations for fishing or fishing related activities beyond their EEZs for a period of at least 25 years.
- **Exception for Developing countries and small economies:** They should be free to provide subsidies for the fisheries sector.

### Rationale for India's Stand

- **Subsidies are vital to develop and diversify their fisheries sector** as well as to protect the food security and livelihood security of their fishermen.
- **Significant population depends on the fishing sector:** For example, in India, there are more than 100 million fishers and approximately 61 % are still living below the poverty line.
- **Low per capita subsidy of developing countries:** For instance, India is one of the lowest fisheries subsidizers despite such a large population.
  - Also, India alongside most developing and small countries does not exploit the resources indiscriminately like other advanced fishing nations.

<b>Principles going forward for successful Fisheries Subsidy Negotiation (given by World Wide Fund)</b>		
 <b>Covering all significant fishing subsidy programs</b>	 <b>Forbidding harmful fishing subsidies while accommodating beneficial ones</b>	 <b>Taking account of the special needs of developing countries</b>
 <b>Promoting the administration of fishing subsidies on a fisheries-specific basis</b>	 <b>Including mechanisms to improve transparency and accountability</b>	 <b>Being administered in effective coordination with international fisheries bodies</b>

### 3.1.3. CROSS-BORDER REMITTANCES

#### Why in the news?

India submitted a draft proposal to reduce the cost of cross-border remittances at MC13. However, it was not included in the final Abu Dhabi Ministerial declaration.

#### Key Highlights related to the proposal

- **Remittance Flow:** Out of total remittances of USD 860 billion in 2023, USD 669 billion (about 78%) went to low and middle-income countries.

- Cross-border remittances have a significant contribution towards socio-economic development especially in developing countries, including poor nations.
- **Remittance Costs:** The remittance costs are about 6.18% globally which is well above the United Nations' SDG target of 3 %.
- **India's Recommendations:** To cut this cost, India is suggesting encouraging digital transfers, fostering interoperable systems, promoting competition, streamlining regulations, and enhancing pricing transparency.
- **Vetoed by US & Switzerland:** The US and Switzerland have been opposing this idea as they tend to be the home to banks which facilitate these high-cost transactions.

#### Significance of cost reduction in cross-border remittance

- **Increased Flow of Remittances:** Cost reduction can increase the inflow of remittances to developing countries and enhance the personal consumption of receiving households.
  - India received the highest remittances about \$125 billion in 2023, however, the cost for the remittance was around \$7 billion - \$8 billion (World Bank report)
- **Economic Growth:** Remittance cost reduction can translate into increased trade and business efficiency, fostering overall economic growth by minimizing cross-border payment expenses.
- **Enable UPI to become Global:** Remittance cost cut will lead to a big boost for UPI transactions, which has been a game changer in India, and it will have a much greater footprint overseas. E.g., Bhutan, Singapore and UAE among others.
  - It will also help the Indian banking sector, which has been at the forefront of technology, to obtain a larger footprint in the global economy.

#### Conclusion

While proposals at the WTO may take time to arrive at a consensus and then move towards implementation, India should meanwhile make it easier for individuals and businesses to make or receive cross-border payments.

Scan the QR code to know more about **India and WTO.**

**Weekly Focus #24:** India and World Trade Organization (WTO)



## 3.2. DIGITAL MONOPOLIES AND REGULATION OF DIGITAL ECOSYSTEM

### Why in the news?

The Ministry of Electronics and Information Technology (MeitY) has expressed strong opposition to Google's delisting of certain applications from the Play Store.

### More about the news

- **Issue:** Google's parent company Alphabet Inc. sent a notice to 10 companies for the non-payment of Google app marketplace fee to the big tech company.
- **Google's Decision:** Subsequently, some of these apps were removed (delisted) from the Play Store, sparking a showdown between Google and the parent companies of these apps.
- **Government Response:** MeitY said it will not permit the de-listing of apps, flagging the concerns around **abuse and misuse of dominant position** by Google and **creating digital monopolies.**

### What is Digital Monopoly?

- **Digital Monopoly:** Refers to a situation where a **single company or platform holds significant control** over their respective digital ecosystems and markets.
  - **Examples:** Big tech companies like Google, Amazon, Facebook, Apple, and Microsoft.



# KEY CHARACTERISTICS OF DIGITAL MONOPOLY



**Dominance:**  
The Company has an overwhelming market share, often over 70–80%, making it the dominant player in that digital space.



**High Barriers to Entry:** New competitors find it extremely difficult to enter the market due to factors like high costs, access to data, and platform effects.



**Network Effects:** The platform becomes essential and indispensable due to strong network effects, where the value of the platform increases as more users join.



**Control over data and information:**  
The monopolistic company has exclusive access to large amounts of user data and information.



**Lack of competition:**  
With minimal competition, the monopolistic company can dictate terms, prices, and policies with little oversight or consumer choice.

## What are the threats posed by digital monopolies?

Digital monopolies can engage in **Anti-Competitive Practices (“the ACPs”)**, affecting competition in the market and subsequently overall consumer choice and well-being. Following are some of the major anti-competitive practices-

- **Anti-steering:** Exclusionary behavior that hinders business users and consumers from switching to third-party service providers. E.g., App stores mandating use of their own payments systems.
- **Platform neutrality / Self-preferencing:** A digital enterprise according favorable treatment to its own products on its own platform, thus creating a conflict of interest.
- **Adjacency / Bundling and tying:** Combining or bundling core or essential services with complementary offerings, thus forcing users to buy related services.
- **Data usage:** Using personal data for consumer profiling to offer targeted online services and products, thus raising data privacy concerns.
- **Pricing / Deep discounting:** Predatory pricing strategies, or intentionally setting prices below cost price to exclude competitors.
- **Exclusive tie-ups:** Exclusive agreements with business users or sellers, thus preventing them from dealing with other enterprises. E.g., Apple restricts installation of third-party applications on iPhones.

## Regulation of Digital Ecosystem in India

- **Competition Act, 2002:** It aims to promote and sustain competition in markets and protect the interests of consumers among others. The Competition Act follows two approaches to regulation-
  - **Ex-post approach** where anti-competitive agreements and abuse of dominance are **scrutinised after such contraventions have occurred.**
  - **Ex-ante approach** where parties intending to enter into a combination are required to **notify and seek approval** from the CCI **before consummation of the transaction.**

- **Information Technology Act, 2000:** It is the primary legislation in India that governs various aspects of the digital ecosystem.
  - However, it was enacted in the inception period of the Internet and may not address contemporary challenges.
- **Sector-Specific Rules:** The government issues regulations for specific sectors like social media (IT Rules) and e-commerce (Consumer Protection Rules) to address emerging issues. E.g.,
  - **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** was introduced to regulate digital media and over-the-top (OTT) platforms.

#### Need for Reforms in the Regulation of Digital Ecosystem in India

- **Regulatory Fragmentation:** Digital ecosystem in India is governed by **multiple regulatory bodies** and agencies, thus **hindering the effectiveness of overall digital regulation**.
- **Regulatory Bodies Face Constraints:** Such as technical expertise, data analysis capabilities, resources etc. to effectively monitor and address complex issues in the digital ecosystem.
- **Balancing Innovation and Regulation:** Overly restrictive regulations can stifle the growth of the digital ecosystem, while lax regulations can lead to the development of monopolies.
- **Implementation Challenges:** As digital companies often operate across jurisdictions and can quickly adapt their practices to circumvent regulations.

#### India's Initiatives to Prevent Digital Monopolies

- **Consumer Protection (E-Commerce) Rules, 2020:** Introduced to govern the operations of e-commerce platforms and digital marketplaces. These rules aim to prevent anti-competitive practices, ensure transparency, and protect consumer interests.
- **Competition (Amendment) Act, 2023:** Introduced new merger notification thresholds and deal value thresholds to capture acquisitions of high-value, data-rich firms that can potentially lead to digital monopolies.
  - **Competition Commission of India (CCI)** also investigates and takes action against anti-competitive practices by digital platforms.
- **Digital Personal Data Protection Act 2023:** It emphasizes the importance of data to prevent the concentration of data in the hands of a few dominant players.
- **Proposed Digital India Act (DIA):** The DIA proposes to regulate a vast array of digital enterprises including social media websites, artificial intelligence-based platforms, and e-commerce enterprises.
- **Draft National Data Governance Framework Policy:** It aims to create standardized data management and security for non-personal and anonymised data across all government bodies.

#### Way Forward (Recommendations of the Committee on Digital Competition Law, 2024)

- **Introduction of a Digital Competition Act with ex-ante measures** (using a form of financial analysis that uses forecasting for future events as against the prevailing practice of ex-post framework in most cases).
- **Systemically Important Digital Intermediaries' (SIDIs):** Identification and designation of certain large digital platforms as SIDIs. They would be subject to ex-ante regulations and obligations.
- **Merger Control Reforms:** Introduction of a deal value threshold and the consideration of non-price factors like data and innovation in merger assessments.
- **Strengthening the Competition Commission of India (CCI):** Enhancing the institutional capacity and expertise of the CCI to effectively deal with competition issues in the digital domain.
- **Better coordination among various regulatory authorities,** such as the CCI, the Telecom Regulatory Authority of India (TRAI) etc.
- **Increased international cooperation** and alignment with global best practices in digital competition regulation.

### 3.3. HUMAN DEVELOPMENT REPORT (HDR) 2023-2024

#### Why in the news?


United Nations Development Programme (UNDP) released the **Human Development Report (HDR) 2023-2024** titled "Breaking the Gridlock: Reimagining cooperation in a polarised world".

## About HDR

- **Released by:** United Nations Development Programme (UNDP) annually since 1990.
- **Objective:** Examines major global challenges that affect human development and suggest recommendations.
- **Human Development Index (HDI):** HDI published since 1990, is the core of the HDR.


## Human Development Index (HDI)

- **About:** It's statistical measure used to quantify a country's achievement in 3 basic dimensions of human development - Long and healthy life, Knowledge, and a decent standard of living.
- **How HDI value is calculated?**
  - HDI value is determined by **aggregating the country's scores in 4 indicators** and these indicators are compiled into a single number between 0 and 1.0 based on dimension indices. (Refer Infographic)
- **Developed by:** Pakistani economist **Mahbub ul-Haq**.
- **Significance:** It can be used to examine the various policy choices of nations.
  - For example, if two countries have approximately the same GNI per capita, then the HDI can help to evaluate why they produce widely disparate human development outcomes.
- **Limitations:** The HDI **captures only part of what human development entails**. It **does not reflect on inequalities, poverty, human security, empowerment**, etc.
  - Thus, HDR provides additional composite indices to evaluate other life aspects, including inequality issues such as gender disparity or racial inequality.



UN  
DP

### United Nations Development Programme (UNDP)



HQ  
New York (USA)

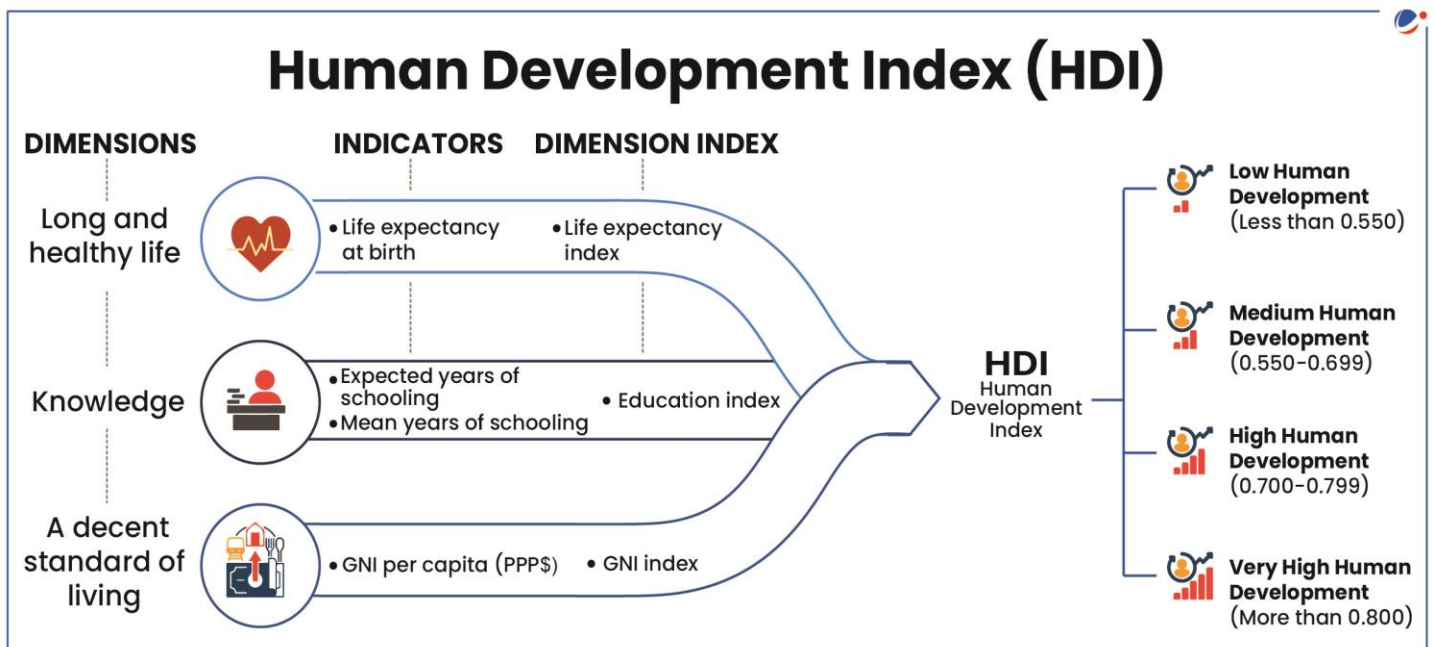
**About:** It's a **United Nations lead agency on international development**, UNDP works in **170** countries and territories to eradicate poverty and reduce inequality.

- ◆ In **line with the 2030 Agenda**, UNDP is implementing six cross-cutting approaches to development, known as **Signature Solutions**.

**Genesis:** It was established in **1966** by merging of the United Nations Expanded Programme of Technical Assistance and the **United Nations Special Fund**.

**Mandate:**

- ◆ UNDP's mandate is to **end poverty, build democratic governance, rule of law, and inclusive institutions**.
- ◆ It **advocates for change**, and connect countries to knowledge, experience and resources to help people build a better life.
- ◆ Its work is concentrated in three focus areas: **Sustainable development, Democratic governance and peace building and Climate and disaster resilience**.



### Key Findings about India

- **HDI:** Rank Improved to **134 in 2022** from 135 in 2021 (and 130 in 2018).
- **HDI Value:** Increased to 0.644 from 0.633 in 2021.
  - **Life expectancy at birth:** Improved to 67.7 years (in 2022) from 67.2 (in 2021).
  - **Expected years of schooling:** Increased to 12.6 years from 11.9 years.
  - **Mean years of schooling:** Increased to 6.57 years.
  - **Gross National Income per capita:** Improved to \$6,951 from \$6,542.
- **Category:** Medium human development category.
- **Comparison with the Neighborhood:** India ranks below China (75), Sri Lanka (78), Maldives (87), Bhutan (125), and Bangladesh (129).
  - Myanmar (144), Nepal (146), Pakistan (164) and Afghanistan (182) have been ranked lower than India.

### Global Findings

- **Human Development Index (HDI):** A total of 193 countries were ranked in 2022 of which **Switzerland ranked first**, followed by Norway and Iceland.
  - **Uneven Recovery:** Rich countries are experiencing record levels of human development, while half of the world's poorest countries remain below their pre-crisis level.
  - **Economic Concentration:** Almost 40 % of global trade in goods is concentrated in three or fewer countries.
- **Widening Human Development Gap:** The two-decade **trend of steadily reducing inequalities between wealthy and poor nations is now in reverse.**
- **Rise in Trend of Democracy Paradox:** This paradox, coupled with a sense of powerlessness and a lack of control over government decisions, has **fuelled political polarization and inward-looking policy approaches.**
  - Democracy Paradox means where the **population thinks positively about democracy but supports leaders who undermine democracy.**

### Other major indices measuring human development

Index	Measures	India's Performance
<b>Gender Inequality Index (GII)</b>	• The GII measures gender inequalities in 3 key dimensions — <b>reproductive health, empowerment and labour market.</b>	• India has jumped 14 places to <b>rank 108 in 2022, from 122 in 2021.</b>
<b>Multidimensional Poverty Index (MPI)</b>	• MPI <b>captures the multiple deprivations</b> that people in developing countries face in their health, education and standard of living.	• There are <b>more than 230 million</b> people in <b>Multidimensional poverty in 2021</b> in India.
<b>Gender Development Index (GDI)</b>	• GDI measures <b>disparities on the HDI by gender.</b>	• India shows low equality in HDI achievements between women and men with <b>absolute deviation from gender parity of more than 10 %.</b>
<b>Inequality-adjusted Human Development Index (IHDI)</b>	• IHDI contains two related measures of <b>inequality—the IHDI and the overall loss in HDI due to inequality.</b>	• India's rank <b>declined by 6 places to 140<sup>th</sup> in IDHI.</b>
<b>Planetary pressures-adjusted Human Development Index</b>	• It adjusts the <b>HDI for planetary pressures</b> in the Anthropocene to reflect a concern for intergenerational inequality.	• With <b>3% difference from HDI value, India ranks at 127<sup>th</sup>.</b>

## 3.4. HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY (HCES) 2022-23


### Why in the news?

The National Sample Survey Office (NSSO) released the **HCES 2022-23**, after a gap of over 10 years since the last survey in 2011-12.

### About Household Consumption Expenditure Survey (HCES)

- **Objective:** It is designed to **collect information on the consumption of goods and services** by households.

- **Conducted by:** NSSO under the **Ministry of Statistics and Programme Implementation (MoSPI)** has been conducting HCES at regular intervals.
  - Initially, the NSSO was conducted HCES every year (starting 1950-51). However, since its 26th round, the survey has been **conducted roughly every 5 years**. (The 2017-18 Survey was discarded by the government citing 'Data Quality' issues.)
- **Utility of HCES:** The data is useful for understanding **consumption and expenditure patterns, standard of living and well-being** of households.
  - It can play a key role in **reviewing critical economic indicators**, including GDP, poverty levels, and Consumer Price Inflation.



## National Sample Survey Office (NSSO)

- i About:** NSSO is part of NSO and **subordinate Office under the control of MoSPI.**
  - ◆ National Statistics Office (NSO) consists of the Central Statistics Office (CSO) and NSSO.
- 🎯 Purpose:** To conduct **large scale sample surveys** in diverse fields on All India basis.
- ⚙️ Functions & Responsibilities:**
  - ◆ It conducts **Periodic Labour Force Survey (PLFS), Annual Survey of Industries, and Urban Frame Survey** etc.
  - ◆ NSSO **collects data on rural and urban prices** and plays a significant role in the improvement of **crop statistics**.
  - ◆ It also **maintains a frame of urban area units for use in sample surveys** in urban areas.

### Key Findings of HCES 2022-23

- **Overall Trend:** Average Monthly Per Capita Consumption Expenditure (MPCE) has been **increasing since 1999-2000**. It has **increased around 2.6 times in rural areas and 2.5 times in urban areas since the last survey**.
  - **Rural-urban Divide:** Average MPCE has been **Rs. 3,773 in rural India** and **Rs. 6,459 in urban India**.
  - **Rich-Poor Divide:** Richest 5 % of rural and urban areas spend nearly 8 times and 10 times more than the bottom 5 % respectively.
- **State-wise Variation:** Among the states, MPCE is the **highest in Sikkim and lowest in Chhattisgarh**. Among the UTs, MPCE is the highest in Chandigarh and lowest in Ladakh.
  - **9 states lagged behind the national average:** Uttar Pradesh, West Bengal, Odisha, Jharkhand, Bihar, Meghalaya, Madhya Pradesh, Chhattisgarh and Assam.
- **MPCE of Agriculture Households:** Consumption expenditure of agricultural households (Rs 3,702) falls below the rural average (Rs 3,773) for the first time.
  - However, the **gap between the MPCE of agricultural families and the overall average of rural households has been narrowing** over the years.
- **Consumption Expenditure among Disadvantaged Sections:** In rural areas, **Scheduled Tribes (ST) reported the lowest MPCE**, followed by Scheduled Castes both less than the rural average.
  - **In urban areas, SCs reported the lowest MPCE**, followed by STs and OBCs, all less than the average MPCE in urban areas.
- **Expenditure on Food:** Share of expenditure on food has gradually declined while the **share of non-food items has increased** for both urban and rural households, since the 1999-2000 survey.
  - Further, **expenditure has shifted to high-value and nutritious animal and horticulture products** from cereals and pulses.

Please note that the HCES 2022-23 also **includes a separate provision** for the collection of information on the **quantity of consumption for several items, received and consumed by the households free of cost through various social welfare programmes**.

## 3.5. RESERVE BANK – INTEGRATED OMBUDSMAN SCHEME (RB-IOS)

### Why in the news?

Reserve Bank of India released the Annual Report of the Ombudsman Scheme 2022-23.

### More on the news

- It is the **first stand-alone report** under the Reserve Bank – Integrated Ombudsman Scheme (RB-IOS), 2021.



- It elucidates the activities of the 22 Offices of the RBI Ombudsman (ORBIOs), the Centralized Receipt and Processing Centre (CRPC) and the Contact Centre during the year.

### Key Findings of Annual Report of Ombudsman Scheme 2022-23

- **Complaints:** Around 7 lakh complaints were received at ORBIOs and CRPC during FY 2022-23, showing an **increase of 68.24%** over last year.
- **Mode of complaint:** Around **85.64%** of the total complaints were received through **digital modes**.
- **Disposal Rate:** Overall disposal rate for FY 2022-23 at the ORBIOs stood at about **98%** with an average Turn Around Time (TAT) of 33 days.
  - Majority of maintainable complaints (**57.48%**) disposed of by ORBIOs were resolved through **mutual settlement/conciliation/mediation**.
- **Regulated Entities (REs):** **Complaints against banks formed the largest portion**, accounting for 83.78% of complaints received by the ORBIOs.

### Do you know?

- > If you have a grievance against an Insurance Company/ Insurance Broker, you can lodge a complaint with the **Insurance Ombudsman**.
  - Primary legislations governing it are Insurance Ombudsman Rules, 2017 and **Insurance Ombudsman (amendment) Rules, 2023**.
- > Also, PFRDA (Redressal of Subscriber Grievance) Regulations, 2015 provides for an **Ombudsman in services associated with pensions**.

#### Major reasons for increasing complaints:

- **Occurrence of unauthorized / fraudulent digital transactions** due to lack of robust fraud prevention mechanisms in REs as well as customers divulging sensitive information.
- **Significant delay in reversal of failed transactions.**
- **Lack of proper communication** from REs / DLAs (Digital Lending Apps) regarding terms and conditions of the loan such as applicable interest rate, foreclosure and other charges.
- **Non-availability** of adequate and centralized bank-level mechanism for **resolution of pension related issues**.
- **Levying charges on non-maintenance of minimum balance** in deposit accounts due to gap in the Board approved policy of the bank.
- **Cross selling / mis-selling of products** due to information asymmetry between the customer and the REs.
- **Inordinate delay in reporting updated credit information** to the CICs resulting in wrong credit report.

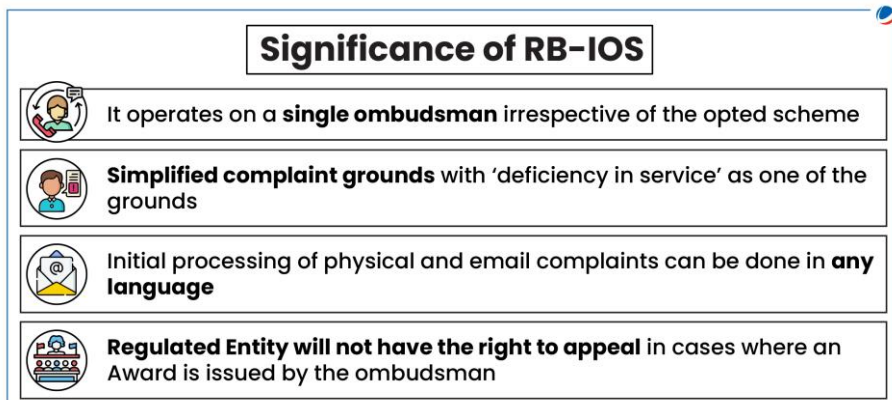
### Reserve Bank – Integrated Ombudsman Scheme (RB-IOS), 2021

- **Background:** RB-IOS was launched in 2021 as part of the **Alternate Grievance Redress (AGR) Framework of RBI** for resolving customer grievances in relation to services provided by the Regulated Entities of RBI in an expeditious and cost-effective manner.
- **Integration of existing schemes:** It integrated the **existing three Ombudsman schemes** of RBI:
  - Banking Ombudsman Scheme, 2006;
  - Ombudsman Scheme for Non-Banking Financial Companies, 2018; and
  - Ombudsman Scheme for Digital Transactions, 2019.
- **Formation:** Scheme has been framed by the RBI in the exercise of the powers conferred on it under the Banking Regulation Act, 1949, the RBI Act, 1934, and the Payment and Settlement Systems Act, 2007.
- **Objective:** It aims to provide **cost-free redress of customer complaints** involving deficiency in services rendered by entities regulated by RBI.
  - Scheme adopts the **'One Nation One Ombudsman' approach** by making the RBI Ombudsman mechanism jurisdiction neutral.
- **Coverage:** Scheme covers the following Regulated Entities:
  - All **commercial banks**, Regional Rural Banks, Scheduled Primary (Urban) Co-operative Banks and Non-Scheduled Primary (Urban) Co-operative Banks with deposits size of ₹50 crore and above.
  - All **Non-Banking Financial Companies** (except Housing Finance Companies), authorized to accept deposits or have customer interface, with an assets size of ₹100 crore and above.
  - All **Payment System Participants**.
  - **Credit Information Companies (CICs)**

- **Appointment of Ombudsman:** RBI may appoint one or more of its officers as Ombudsman and Deputy Ombudsman for a tenure not exceeding three years at a time.
- **Handling of complaints:** Redressal/adjudication of complaints is presently handled by **24 Offices of the RBI Ombudsman (ORBIOs)** and the **Centralised Receipt and Processing Centre (CRPC)**.

### Way Forward

- **Utkarsh 2.0:** RBI's medium-term strategy framework (Utkarsh 2.0) has identified the following goals for enhancing consumer protection and improving grievance redress mechanisms:
  - **Review, consolidate and update** the extant RBI regulatory guidelines on customer service;
  - Review and integrate the **internal ombudsman schemes**, applicable to different RE types;
  - Establish a **Reserve Bank Contact Centre** at two additional locations for local languages, including disaster recovery and business continuity facility.
- **Technology use:** RBI could explore **leveraging Artificial Intelligence** in the Complaint Management System (CMS) for better complaint categorization, decision-making support and better customer experience.
  - For instance, the Consumer Financial Protection Bureau of US collects data by engaging in **Financial Well-being Data Survey to design interventions**.
- **Standardization:** Regulated entities should develop a **comprehensive Standard Operating Procedure (SOP) for grievance redress** based on the inputs received from the RBI Ombudsman.
- **Review:** The CMS of the REs should be designed in such a way that all **rejected complaints** are auto-escalated directly to the Internal Ombudsman without any manual intervention.



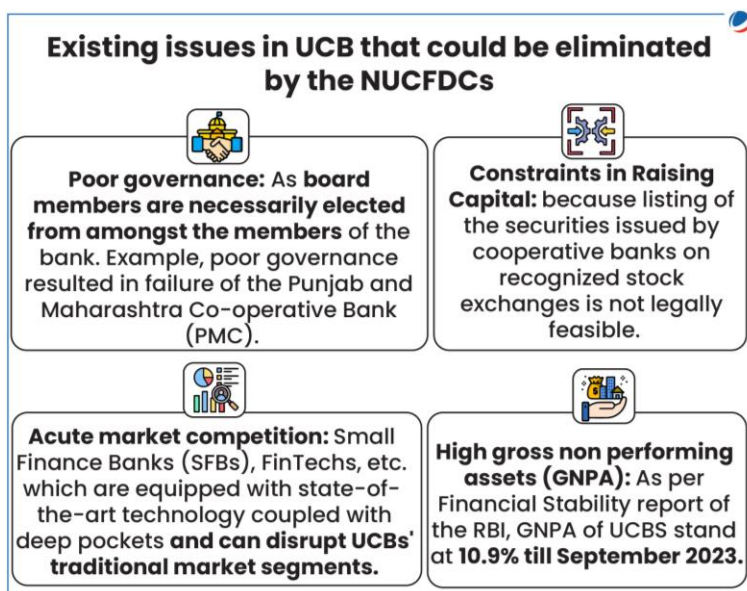
## 3.6. UMBRELLA ORGANISATION (UO) FOR URBAN COOPERATIVE BANKS (UCBS)

### Why in the news?

Recently, the Ministry of Cooperation constituted the **National Urban Cooperative Finance and Development Corporation Limited (NUCFDC)**, an Umbrella Organisation (UO) for UCBS.

### About NUCFDC

- **Background**
  - **2006:** The **need** for an Umbrella Organisation (UO) for India's UCB sector was **first emphasized** by an **RBI Working Group** chaired by **Shri N.S. Viswanathan**.
  - **2009:** RBI's Working Group under the chairmanship of **Shri V.S. Das** recommended a **model of a national level UO i.e., NUCFDC**.
  - **2019:** RBI accorded regulatory approval to the **NAFCUB (National Federation of Urban Co-operative Banks and Credit Societies Ltd)** (refer to the box) for the formation of NUCFDC.
- **Need**
  - UO can serve as a **gateway for resolving the issues of UCBS** (refer to the infographics).



- UO provides **an alternative to merger of smaller UCBs**, which was earlier done in order improve the economies of scale. (Report by RBI Expert Committee 2021).
- According to the **N.S. Viswanathan committee**, UO appears to be the **only long-term solution** to enhance the **public and depositors' confidence** in the sector.
- **Global example:** In countries having a large presence of co-operative banks (called credit unions), such as the **USA, Canada, and France**, cooperative banks are networked closely and thrive under an apex institution known as **UO**.
  - In India, UO will be helpful to **modernize and strengthen around 1,502 UCBs** in the country.
- **Legal status**
  - **NUCFDC** is a UO registered with **RBI** as a **Type II -Non-Banking Financial Company-Non deposit (NBFC-ND)**.
    - ✓ **Type II** non-deposit taking NBFCs (NBFC-ND) **accept** (or intend to accept) **public funds** and/or have or intend to **have a customer interface**.
      - Contrary to this, Type I - NBFCs-ND **do not accept** (or intend to accept) **public funds** as well as **do not have or intend to have a customer interface**.
  - It will be allowed to **operate as a Self-Regulatory Organization (SRO)** for the sector.



### National Federation of Urban Co-operative Banks and Credit Societies Ltd (NAFCUB)



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**Genesis:** It is a **national co-operative society** which in 1977 got registered under the **Multi-State Cooperative Societies Act**.

**Role:** NAFCUB is an **Apex Level Promotional body of UCBs and Credit Societies Ltd** in the Country.

**Activities:**

- Training programmes,
- Research conclaves
- Core Banking Solutions (CBS) initiatives

**Members:** It is open to

- UCBs and Urban Credit Societies
- The State Federations /Association of Urban Banks and/or Credit Societies.
- National Co-operative Union of India
- Any other organization useful for the furtherance of the objects of the Federation, with the approval of the Central Registrar of Co-operative Societies

- **No individual shall be eligible for membership** of the Federation.

#### Major functions envisaged for NUCFDC

- **Offering liquidity and capital support:** To raise capital, with plans to reach a **capital base of Rs.300 crores** to support UCBs.
  - NUCFDC can also offer **fund management** and other consultancy services to UCBs.
- **Facilitate regulatory compliance:**
  - Prepare small banks for compliance with the **Banking Regulation Act (BRA), 1949**.
  - Facilitate **communication between UCBs and regulators**.
- **Develop a shared technology platform:** NUCFDC will enable UCBs to **widen their range of services at a relatively lower cost**.

## 3.7. PRIMARY AGRICULTURAL CREDIT SOCIETIES (PACS)

### Why in the news?

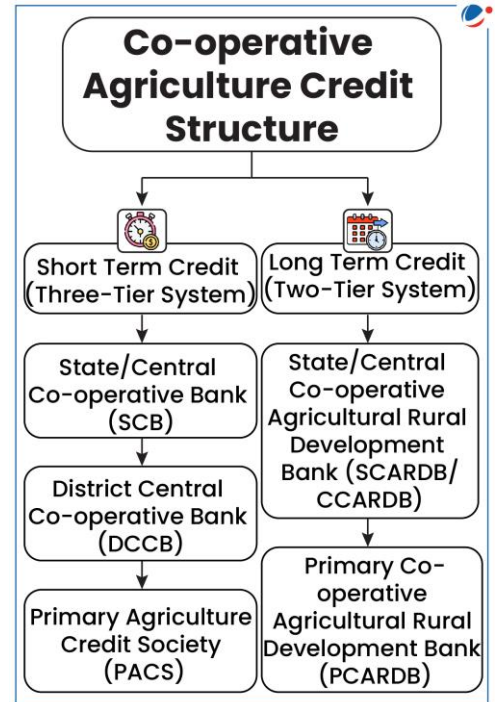
Various initiatives have been taken for the expansion and modernization of PACS.

### More on the news

- **Initiative for expansion:** Foundational stone for an **additional 500 PACS** for construction of godowns & other agri-infrastructure was laid down.
- **Initiatives for modernization of PACS:**
  - **Project for computerization in 18,000 PACS across the country** was inaugurated.
    - ✓ Under '**centrally sponsored project for computerisation of PAC**' scheme, government aims to **computerise 63,000 functional PACS**.
      - This will help in **improving their operational efficiency, ensuring speedy disbursement of loans, lowering of transaction costs** and increasing transparency.
  - **National Cooperative Database (NCD)** was inaugurated by Ministry of Cooperation.
    - ✓ NCD provides **all information about the cooperative sector** like number of co-operatives in states/UTs.

## About PACS

- **Definition:** PACS are the **grassroot level arms of short-term co-operative credit structure** (refer to infographics).
- **Regulation:**
  - PACS are registered under **Cooperative Societies Act** and are administered by concerned **State Registrar of Cooperative Societies (RCS)**.
  - ✓ **SCBs/DCCBs** are also registered under provisions of **State Cooperative Societies Act** of State concerned and **are regulated by RBI**.
  - ✓ However, PACS are **outside purview of Banking Regulation Act, 1949** and are not regulated by RBI.
- **Refinancing:** They are refinanced by **NABARD** through **DCCBs and SCBs**.
- **Functions:**
  - **Gives short-term credit loans** and collects repayment from rural borrowers.
  - They can also provide other **input services**, like seed, fertilizer, and pesticide distribution **to member farmers**.
- **Significance:** PACS play a key role in financial inclusion.
  - **PACS account for 41 % of the KCC loans** given by all entities in the Country and **95 % of these KCC loans** through PACS are to the **Small and Marginal farmers** (2022).
- **Current Status:** There are **more than 65000 functional PACS** across country.



## Issues faced by PACS

- **Infrastructure:** Absence of digital infrastructure, such as computerized accounting systems, poor access to internet connectivity limits their ability to streamline operations and also hampers public trust in them.
- **Financial:** PACS suffer from **inadequate capital, low levels of deposits, and high non-performing assets (NPAs)**.
  - **Debt waiver schemes and interest subvention schemes** also have adverse impact on balance sheet of PACS.
- **Human resource:** Lack of trained staff and insufficient managerial skills among members of PACS hinders their functioning.
- **Governance:** PACS are managed by a body elected from local village groups which results in **political Interference**.
  - Other governance issues, such as **lack of transparency, and inadequate accountability mechanisms** have also undermined the effectiveness of PACS.
- **Regional disparity:** PACS are largely concentrated in **western and southern states** (Maharashtra, Gujarat, Karnataka etc.).

## Initiatives to strengthen PACS

- **Formation of new Farmer Producer Organizations (FPOs) by PACS:** 1,100 additional FPOs to be formed by PACS with support of National Cooperative Development Corporation (NCDC).
- **National Cooperative Development Corporation (NCDC):** Established in 1963, NCDC provides loans and grants to State Governments for financing primary and secondary level cooperative societies.
- **Diversifying business portfolio**
  - **Model Byelaws to make PACS multipurpose:** Enable PACS to diversify their business by undertaking more than 25 business activities. E.g. dairy, fishery, floriculture, setting up godowns etc.
  - **PACS to function as Pradhan Mantri Kisan Samridhi Kendras:** To provide fertilizers, pesticides and various other agri inputs to farmers at a single shop.
  - **PACS to operate as Pradhan Mantri Bhartiya Jan Aushadhi Kendras:** To ensure availability of generic medicines to rural citizens.
  - **PACS to operate as Common Service Centers (CSCs).**

## Way Forward

- **Encourage adoption of technology:** Implementation of **Common Accounting System (CAS)** and **Management Information System (MIS)**, establish common hubs that can provide technological and other support services to PACS.

- Also, incentivize PACS for promoting adoption of mobile banking, and e-governance platforms, etc.
- **Financial strengthening:** Introduced a **risk-based lending model and implement effective** recovery measures to address NPA issue.
  - Enhance capital base of PACS through access to external funding sources, diversifying their business portfolio, etc.
- **Human Resource:** Implement capacity-building programs, provide better compensation and career progression opportunities to skilled staff to retain them.
- **Improving governance:**
  - **Regular audits, and strict disclosure norms** to ensure transparency and accountability.
  - Implement measures **to insulate PACS from undue political influence** and ensure their autonomous functioning.




### 3.8. INDIA'S GRAIN STORAGE SYSTEM

#### Why in the news?

The Prime Minister inaugurated pilot project of '**World's Largest Grain Storage Plan in Cooperative Sector**', for 11 Primary Agricultural Credit Societies (PACS) across 11 States.

#### About World's Largest Grain Storage Plan in Cooperative Sector

- **Ministry:** Ministry of Cooperation (MoC).
- **Purpose:** To establish **decentralized storage facilities at PACS level**, alongside other **agricultural infrastructure**, like, warehouses, custom hiring centers, processing units etc.
- **Benefits to PACS:** PACS can avail **subsidies and interest subvention** benefits for construction of godowns/storage facilities and setting up of other agri infrastructure.
- **Convergence of various schemes** (refer to infographics).
- **Major implementing agencies:**
  - **FCI** (Food Corporation of India),
  - **CWC** (Central Warehousing Corporation),
  - **NCDC** (National Cooperative Development Corporation) with support of **NABARD**,
  - **NABARD** Consultancy Services (**NABCONS**),
  - **NBCC** (National Buildings Construction Corporation).
- **Implementation:**
  - **Inter-Ministerial Committee (IMC):** Under **leadership of MoC**, IMC will modify guidelines/ implementation methodologies of schemes identified for convergence.
  - **National Level Coordination Committee (NLCC):** To steer overall implementation.
  - **State level: State Cooperative Development Committee (SCDC)** and **District Cooperative Development Committee (DCDC)** to monitor project implementation.

Schemes Identified for Convergence	
	<b>Ministry of Agriculture and Farmer Welfare</b> <ul style="list-style-type: none"> <li>• Agriculture Infrastructure Fund (AIF)</li> <li>• Agricultural Marketing Infrastructure Scheme (AMI)</li> <li>• Mission for Integrated Development of Horticulture (MIDH)</li> <li>• Sub Mission on Agricultural Mechanization (SMAM)</li> </ul>
	<b>Ministry of Food Processing Industries</b> <ul style="list-style-type: none"> <li>• Pradhan Mantri Formalization of Micro Food Processing Enterprises Scheme (PMFME)</li> <li>• Pradhan Mantri Kisan Sampada Yojana (PMKSY)</li> </ul>
	<b>Ministry of Consumer Affairs, food, and public Distribution</b> <ul style="list-style-type: none"> <li>• Allocation of food grains under the National Food Security Act, 2013</li> <li>• Procurement operations at Minimum Support Price</li> </ul>

#### Grain storage system in India

- **Storage by small farmers:** Around 60-70%, of food grain produced is stored at household level using various indigenous **traditional storage** structures like Morai, Mud Kothi, etc.
- **Government storage agencies:**
  - **Food Corporation of India (FCI):** Established by an Act of Parliament in 1965, FCI is main agency for storage of foodgrain in country.
    - ✓ It operates **Food Storage Depots nationwide**, including silos, godowns, and Cover and Plinth (CAP) structures.
  - **Central warehousing Corporations (CWC):** Established under **Warehousing Corporations Act, 1962** for warehousing of agricultural produce and other notified commodities.

- **State warehousing Corporations:** Established under respective state warehousing Acts to regulate warehousing of certain goods in the states.
- **Private agencies:** FCI hires storage capacity from **private owners**.
- **Other stakeholders:** Warehouse Development Regulatory Authority (WDRA), Railways, and civil supply departments of states are involved in grain management.

### Need for better Grain Storage System (GGS)

- **Food Security:** Robust food storage network is imperative to feed India's rising population and to implement **National Food Security Act, 2013**, that covers about 81 crore people.
- **Reduce post-harvest losses:** Traditional storage practices do not guarantee protection against post-harvest losses (due to microorganisms, rodent, etc.) which **account for about 10% of total food grains**.
- **Price stabilization:** Food stock stored with governments enables it to undertake **market intervention for price stabilization**.
- **Helpful in doubling farmer's income:** Affordable GSS **insulates farmers from price volatility** by enabling **delayed selling** and facilitates them to **export their surplus**.
- **Promote access to credit:** Adoption of warehouse receipt financing could prove pivotal in mainstreaming institutional credit to farmers in Indian agriculture.
- **National security:** Food security brings economic and social stability.

#### Other initiatives for augmentation of grain storage capacity

- **Warehousing (Development and Regulation) Act, 2007:** Establishes WDRA which is mandated to establish **Negotiable Warehouse Receipt (NWR) system for all commodities** through a network of registered warehouses,
- **e-NWRs:** e-NWR were launched in **2017 by WDRA**.
  - Warehouse Receipts are an **acknowledgement in writing or in electronic form** issued by a Warehouseman or his authorised representative of **receipt for storage of goods not owned by warehouseman**.
- **Private Entrepreneur Guarantee (PEG) scheme:** FOR AUGMENTING FOOD STORAGE CAPACITY THROUGH PRIVATE PARTICIPATION.
- **National Policy on Handling, Storage and Transportation of Foodgrains, 2000:** To minimize storage and transit losses and to introduce modern technology.
- **Grameen Bhandaran Yojana:** For construction, renovation and expansion of rural godowns.
- **PM Kisan Sampada Yojana:** For Development of cold storage facilities, specialised packaging units, warehousing facilities, etc.

### Challenges associated with India's grain storage

- **Unscientific storage:** Around 80% handling and warehousing facilities are not mechanized and traditional manual methods are used for loading, unloading and handling of food grains and other commodities.
- **Limited storage capacity:** Food Grain Production in India is 311 MMT and total Storage Capacity in India is only 145 MMT, a shortage of 166 MMT.
- **Surplus buffer stock:** FCI has been carrying buffer stocks way in excess of buffer stocking norms.
- **Large transportation cost:** Accessing existing warehouses entails high transportation costs, discouraging small farmers.
- **Lack of private investment in warehousing:** Private sectors are hesitant in investment due lack of availability of adequate land and preconstruction challenges like multiple regulatory licenses.

### Way Forward for revamping India's grain storage System

- **Recommendations by Shanta Kumar Committee**
  - **Scientific storage:** CAP storage should be gradually phased out. Movement of grains needs to be gradually containerized to reduce transit losses, and have faster turn-around-time.
  - **Flexibilities to FCI:** Greater flexibility to FCI with business orientation to operate in Open Market Sale Scheme (OMSS) and export markets is needed.
    - ✓ OMSS - Domestic refers to **offering of food grains** (wheat & rice) in **open market at prices**, fixed by Ministry of Consumer Affairs, Food & Public Distribution through e-auction.
  - **Private Sector Participation:** FCI's **old conventional storages** can be converted to **silos with help of private sector** and other stocking agencies.

- **Recommendations by Ashok Dalwai Committee**

- **Decentralization of storage:** Planning for storage and any associated infrastructure, by every state needs to be based on unique agricultural practices, local to each district.
  - ✓ **Reducing loss at farmgate:** Building aggregation units (i.e., modern pack-houses and pooling points) at village level with transport links should be promoted.
- **Promote integrated agri-logistics systems** to enable efficient storage and transfer of value from farm gate to end-consumers.


### 3.9. KRISHI VIGYAN KENDRAS

#### Why in the News?


The **Indian Council of Agricultural Research (ICAR)** celebrated the **Golden jubilee year** of establishment of the **Krishi Vigyan Kendra (KVK)**.

#### About Krishi Vigyan Kendra (KVK)

- KVKs aims at assessment of **location specific technology modules in agriculture and allied enterprises**.
  - KVKs are the **only institution at the district level in India** for technological backstopping in agriculture and allied sectors.
  - They are an **integral part of the National Agricultural Research System (NARS)**.
    - ✓ NARS in India comprises of Indian Council of Agricultural Research (ICAR) at national level and the State Agricultural Universities (SAUs) at the state level, are **major partners in growth & development of Agricultural Research and Education**.
  - KVKs have been functioning as **Knowledge and Resource Centre of agricultural technology** and linking the NARS with extension system and farmers.
    - ✓ **Agricultural extension** (also known as agricultural advisory services) plays a crucial role in boosting agricultural productivity, increasing food security, improving rural livelihoods, and promoting agriculture as an engine of pro-poor economic growth.
  - Currently there are **around 731 KVKs in the country**, established under **eleven** Agricultural Technology Application Research Institute (**ATARI**) zones.
- **Financing:**
  - KVKs are 100% financed by the Centre.
  - KVKs are working under State Agricultural Universities, ICAR institutes, Government and Non-Government Organizations working in Agriculture.
- **Other information:**
  - **Dr. Mohan Singh Mehta committee** appointed by **ICAR in 1973**, mooted the idea of establishment of Farm Science Centre (Krishi Vigyan Kendra) in the Country.
  - The **first KVK was established in 1974 at Puducherry** under the **Tamil Nadu Agricultural University (TNAU), Coimbatore**.



## Indian Council of Agricultural Research (ICAR)



**Genesis:** Established in **1929** as a registered society under **The Societies Registration Act, 1860**.

- It was formerly known as **Imperial Council of Agricultural Research**.

**Ministry:** Autonomous organisation under **Ministry of Agriculture and Farmers Welfare**.

**Function:** Apex body for coordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences.

#### Challenges in Agricultural Extension Services

- **Limited Reach and Accessibility:** Many farmers, especially in remote and marginalized areas, still have limited access to the services provided by KVKs
- **Less focus on Small and Marginal Farmers:** Small farmers receive their inputs at last due to lack of established networks.
- **Inadequate Infrastructure:** Several KVKs lack the necessary infrastructure, such as well-equipped laboratories, demonstration farms, and training facilities etc.
- **Knowledge and Skill Gaps:** Gaps in the knowledge and skills of KVK staff, particularly in emerging areas like climate-smart agriculture, precision farming, and digital technologies.

#### Role of KVKs in Agricultural Extension Services (AES)

- **On-Farm Testing:** KVKs conduct field trials to assess the adaptability of new agricultural technologies under different farming systems.
- **Frontline Demonstrations:** They demonstrate the latest agricultural technologies to the farmers and the extension workers to expedite the technology generation and its adoption.

- Surveys suggest that **97.33% of KVK demo-farmers have good knowledge of paddy cultivation** as compared the non-demo farmers.
- **Advisory Services:** They provide necessary information and advisory services to the farmers on various aspects of agriculture like cropping patterns, pest control, post-harvest technology etc.
- **Training:** They organize training programs to update the farmers within the district with latest advances in agricultural research on regular basis.
- **Seed and Planting Material Production:** KVKs undertake production of good quality seeds and planting materials for distribution to the farmers.
- **Resource and Knowledge Centre:** KVKs serve as agricultural technology resource and knowledge centres, supporting public, private, and voluntary sector initiatives in agricultural economy.

## Conclusion

There is **need to strengthen the resource base** through increased budgetary allocations and dedicated human resource to address the resource constraints faced by the KVKs. Moreover, **upgrading Infrastructure** through inclusion of equipped laboratories, demonstration farms, and training facilities, can improve the KVKs' ability to deliver quality services.


## 3.10. PATENTS

### Why in the News?

**Patents (Amendment) Rules, 2024** have been notified by the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.

### More about the news

- **Patents (Amendment) Rules, 2024** have been notified under the **Patents Act, 1970**.
  - Section 159 of the Act empowers the Central Government to make rules for implementing the Act and regulating patent administration.
- **Patents (Amendment) Rules, 2024** have amended the **Patents Rules, 2003**.
  - The objective of amendment is to **foster innovation** by creating a conducive environment for inventors and creators.



### Data Bank

- **Over 1 lakh Patents** were granted by the Patent office (March, 2023 to March, 2024)
- **7th position** in terms of Resident Patent Filing activity in the world (WIPO Report 2022)

### Key Provisions of the Patents (Amendment) Rules, 2024

- **Certificate of Inventorship:** It has been introduced to acknowledge the contribution of inventors in the patented invention.
- **Time limit:** For filing request for examination, time limit has been reduced from 48 months to 31 months.
  - Time limit to furnish foreign application filing details has been changed from **six months** to three months.
- **Renewal fee:** It has been reduced by 10% if paid in advance through electronic mode for a period of at least 4 years.
- **Frequency to file the statements of working of patents:** It has been reduced from once in a financial year to once in every three financial years.

### Conventions/Treaties Related with the Patents

- **Paris Convention (1883):** The **first major international agreement** relating to the protection of industrial property rights, including patents.
- **Patent Cooperation Treaty (1970):** A treaty establishing an **international patent filing system**.
- **Budapest Treaty (1977):** A treaty prescribing deposits of microorganisms at any international depositary authority, to be recognized for the purposes of patent procedure.
- **India** is part of all of the above.

### About Patents and their governance

- A patent is an exclusive **Intellectual Property Right (IPR)** granted for an invention, which is a product or a process that provides a new way of doing something or offers a new technical solution to a problem.
- To get a patent, **technical information** about the invention **must be disclosed** to the public in a patent application.
- **Patent protection** means that the invention cannot be commercially made, used, distributed, imported or sold by others without the patent owner's consent.



- Patents are **territorial rights**, only applicable in the country or region in which a patent has been filed and granted.
- **Criteria for an invention to be patentable:**
  - It should be **novel**.
  - Must involve an **inventive step**.
  - Capable of **industrial application**.
  - It should **not fall under the categories of inventions that are excluded from patentability** under the concerned jurisdiction.

## Regulation of Patents

### Global


- **World Intellectual Property Organization (WIPO)** regulates the Patent and other IPR.
  - WIPO administers conventions and Treaties related to patents (**refer to box**).
- Under **Trade-Related Aspects of Intellectual Property Rights (TRIPS)**, an agreement of the **World Trade Organisation (WTO)** was signed in **1994**.
  - It is the most comprehensive multilateral agreement on IP.
  - It plays a central role in facilitating trade in knowledge and creativity, in resolving trade disputes over IP.

### India


- Regulated by the **Patents Act, 1970**. It repealed the Indian Patents and Designs Act, 1911.
  - It has been amended thrice, in 1999, 2002, and 2005.
  - **The Amendment of 2005** ensured compliance of the **Patents Act, 1970** with the WTO TRIPS Agreement.
    - ✓ Amendment extended the product patent protection to the areas of pharmaceuticals and agricultural chemicals.
- As per the Act, the **time Period** of patent will be 20 years.
- Also, as per the **Act**, there are certain things **which cannot be patented in India** such as plants and animals in whole or any part including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals etc.

### Issues/Challenges related to Patents in India

- **Abolition of the Intellectual Property Appellate Board (IPAB):** It was done by the **Tribunal Reforms Act, 2021**. IPAB's functions have been assigned to the Commercial Courts and High Courts.
  - The abolition of a specialised tribunal handling complex issues related to IPR may lead to the creation of a void in handling appeals in IP cases.
- **Evergreening of the Patents:** In it, companies make slight changes to the formulation to extend the patent period, guaranteeing their monopoly over the drug.
- **Allowing for compulsory licensing:** In it, the **government allows** someone else to **produce a patented product** or process without the **consent of the patent owner** or plans using the patent-protected invention itself. For example, grant of license to produce Nexavar (a cancer drug) to a generic drug company.
  - **Compulsory licensing** is one of the flexibilities in the **TRIPS Agreement**.
- **Lengthy Process:** Average time taken for disposing of an application in China and US is 20- 21 months, which is almost 1/3rd of the time taken in India.
- **Low patent filing in terms of population:** India registered 34.4 patents per million population in comparison to 4,037 by Korea, 2,579 by Japan, and 1,806 by USA.
- **Other:** Lack of sufficient manpower, lack of fixed timelines for each step in the procedure etc.



## World Intellectual Property Organization (WIPO)



**Genesis:** Established in 1967 through the **WIPO Convention**.

**About:** It is a self-funding agency of the United Nations. It is the global forum for intellectual property (IP) services, policy, information and cooperation.

**Membership:** 193 member states (including India)

**Key information:**

- Governs treaties related to IPR such as **Berne Convention** for the Protection of Literary and Artistic Works.
- It releases the **Global Innovation Index (GII)** along with **Cornell University** and **INSEAD**
- It releases reports like **World Intellectual Property Report**.

### Key Initiatives taken to facilitate filing of Patents in India

- **National Intellectual Property Rights (IPR) Policy in 2016.** It includes
  - Scheme for Facilitating **Start-Ups Intellectual Property Protection (SIPP)** to encourage filling of Patent applications by Startups.
  - **Expedited Examination** for certain category of applicants, such as Start-ups, small entities, women inventors for expeditious grant of Patents.
  - **National Intellectual Property Awareness Mission (NIPAM)**, a flagship program to impart IP awareness and basic training in educational institutes.
  - **Patent Facilitation Programme** has been revamped to scout patentable inventions and provide full financial, technical and legal support in filing and obtaining patents.
  - **Reduction in filing Fees** for Start-ups, MSMEs, and **educational Institutes** to encourage Patent filing.
  - **IP Mitra:** for **Startups in patents, trademarks, and designs** under the extended Scheme for Facilitating Start-Ups Intellectual Property Protection (SIPP).
- **Other:**
  - Establishment of **Centre of Excellence** in IP.
  - Modernization of the IP offices with steady switchover from manual to **computerized system of processing of applications.**
  - **Improved management of IP related information** and creation of stronger public interface.

### Conclusion

A patent plays a key role in the economic development of the country. To create robust patent protection system initiatives like re-establishment of the IPAB etc. can be taken. Also, research and development needs to be promoted in academies/Institutes and Industrial sphere so that filing of patents increases in the country.

### Related News

#### International Intellectual Property (IP) Index

- **US Chamber of Commerce** released **12th edition** of its International IP Index.
  - **Top countries** on the index are **USA, UK and France.**
  - **India's position** remained unchanged at **42 out of 55 economies.**
- IP Index is different from the **Global Innovation Index (GII).**
  - **GII** is co-published by **World Intellectual Property Organization (WIPO), Cornell University, and INSEAD.**
  - **GII** ranks India at **40<sup>th</sup>** position out of 132 economies.

#### Trade Secrets and Economic Espionage

- Law Commission published its 289<sup>th</sup> Report on Trade Secrets and Economic Espionage.
- Previously, in 2017, Department of Legal Affairs and Legislative Department forwarded a **reference to Law Commission to examine possibility of enacting Trade Secrets Act and Economic Espionage Act.**
- **Trade Secrets (TS):** Encompass **confidential business information** which may be sold or licensed. It is a relatively new entrant within the domain of Intellectual Property Rights (IPR).
- **Economic espionage (EE):** Act of deliberate acquisition of confidential information from domestic companies and government entities to benefit a foreign State. It can be **economic, industrial, or commercial.**
- **Need to enact Law on TS and EE**
  - To enable **transfer of technology** and cooperation among industries across borders.
  - To protect **creative resources and intellectual capital** of MSMEs and Startups.
  - To protect **critical technologies and sectors** such as defence, nuclear, telecom, etc., from EE.
  - To **consolidate existing fragmented legal framework** to ensure certainty and better compliance.
- **Key Recommendations**
  - Enact separate laws for trade secrets and economic espionage.
    - ✓ **Commercial espionage**, however, will fall **within the purview of proposed Trade Secrets Act.**
  - Provide **broad definition of TS** to allow room for judicial interpretation so that emerging aspects and industries may also fit within legal framework.
  - Provide exceptions for Whistle Blowers, Compulsory Licensing and Government use, etc.

### Existing Legal Framework on TS and EE



## 3.11. UTTAR POORVA TRANSFORMATIVE INDUSTRIALIZATION SCHEME, 2024 (UNNATI 2024)

### Why in the news?

Union Cabinet approved the Uttar Poorva Transformative Industrialization Scheme, 2024 (UNNATI – 2024).

#### Status of Industrialization in Northeast India

- **Special Economic Zones (SEZs):** There are 5 formally approved SEZs in the NER, out of which 4 are notified. However, **none of the SEZs is operational.**
- **Specialized industries:**
  - **Handloom and handicraft industries:** It is one of the largest unorganized economic activities in the NER that provides employment for rural and semi-rural population.
  - **Bamboo industry:** Nearly two-fifths of bamboo stock in India is concentrated in the NER.
  - **Rubber industry:** Tripura is the chief production hub and has been declared the 'second rubber capital of India' after Kerala by the Indian Rubber Board.
- **MSMEs:** Number of MSMEs in NER are only 2.98% of total MSMEs in India and accounts for 2.62% of total employment.
  - Assam has largest number of MSMEs in NER followed by Tripura and Meghalaya.
- **Connectivity:**
  - **Road Connectivity:** Total length of **national highway** has increased to 16,125 Kms in the region.
  - **Inland waterways: National Waterway (NW) 2** from Bangladesh border to Sadiya on Brahmaputra is fully developed and 20 waterways of NER have been declared as National Waterways
    - ✓ However, feasibility study for 18 waterways have not been yet completed.
- **International infrastructure projects:** There are several international infrastructure projects in different stages of implementation:
  - **India- Myanmar-Thailand Trilateral Highway**
  - **Kaladan Multimodal Transit Transport Project**
  - **India-Bangladesh Protocol Route**
  - **Bangladesh-Bhutan-India-Nepal Motor Vehicles Agreement (BBIN-MVA)**

#### About UNNATI - 2024

- **Ministry:** Central Sector Scheme under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.
- **Objective:** Development of Industries and generation of employment in the states of North East Region.
- **Financial Outlay:** More than Rs.10,000 crore from the date of notification for 10 years. (Additional 8 years for committed liabilities).
- **Nodal Agency:** North-Eastern Development Financial Corporation Limited (NEDFi) will be the nodal agency for the disbursal of incentives.
- **Parts:** It is divided into two parts:
  - **Part A:** It caters to the **incentives to the eligible units (97% of the total outlay)** and has **three components-**
    - ✓ Capital Investment Incentive (CII),
    - ✓ Central Interest Subvention (CIS), and
    - ✓ Manufacturing & Services Linked Incentive (MSLI).
  - **Part B:** It is for **implementation and institutional arrangements** for the scheme. (**3%** of the total outlay).
- **Features:**
  - **Eligibility:** All new Industrial units and Expanding units would be eligible for the respective incentives.
  - **Commencement of Production or operation:** All eligible Industrial Units to commence their production or operation within 4 years from the grant of registration.
  - **Districts are categorized in two zones:** Zone A (Industrially Advanced Districts) & Zone B (Industrially Backward Districts).
  - **Earmarking of funds:** 60% of the outlay of Part A has been earmarked to 8 Northeastern states and 40% on a First-In-First-Out (FIFO) basis.

#### Know the term

- **Committed Liabilities:** These are defined as the value of supply orders/contracts issued/concluded but payment not yet made.

- **Coverage:** It has a **negative list for the manufacturing** sector (non-eligible industries) and a **positive list for the services** sector (eligible industries).
- **Implementation Strategy:** DPIIT will implement the scheme in cooperation with the states.

#### Incentive Mechanisms and Eligibility Criterion under UNNATI

Incentive Mechanisms	Description	Eligibility Criteria
<b>Capital Investment Incentive (CII)</b>	Special financial benefit provided for eligible businesses that are either new or expanding.	<ul style="list-style-type: none"> <li>• For <b>manufacturing</b>, minimum investment of <b>INR 1 Crore</b> and for <b>service</b> units, minimum investment of <b>INR 50 Lakh</b> in durable physical assets.</li> <li>• For <b>Micro industries</b>, minimum investment limit shall be <b>INR 50 lakhs</b> for both manufacturing and service sector.</li> </ul>
<b>Capital Interest Subvention Incentive (CIS)</b>	It offers financial relief to eligible businesses (both new and expanding units).	<ul style="list-style-type: none"> <li>• Interest on <b>loan up to the principal amount of Rs. 250 crore</b> for investment in eligible P&amp;M (for manufacturing sector) or building and all other durable physical assets (for service sector) shall be eligible.</li> </ul>
<b>Manufacturing &amp; Services linked incentive (MSLI)</b>	Linked to Net Payment of GST, i.e., GST paid less Input Tax Credit.	<ul style="list-style-type: none"> <li>• For New Units only.</li> </ul>

Please note that different incentives are given to Zone A and Zone B under every mechanism.

#### Conclusion

By providing financial incentives for businesses, creating jobs, increasing backward and forward linkages and promoting domestic manufacturing and services, UNNATI fosters a more robust and self-sufficient Indian economy.

Furthermore, the program's government backing adds a layer of reliability and stability, encouraging businesses to confidently invest in growth. This will help in achieving the goal of Atmanirbhar Bharat.

#### Other initiatives to promote industrialization in the Northeastern Region

- **Prime Minister's Development Initiative for North Eastern Region (PM-DevINE):** It envisages funding infrastructure, supporting social development projects, and generating livelihood opportunities for youth and women.
- **North East Special Infrastructure Development Scheme (NESIDS):** A central sector scheme, approved during 2017-18 and extended till 2026. Its two components include:
  - **NESIDS (Roads)** – to be administered by the North Eastern Council (NEC), and
  - **NESIDS (Other than Roads Infrastructure (OTRI))** – to be administered by the Ministry of Development of North Eastern Region (MDoNER).
- **Schemes of North Eastern Council (NEC):** A central sector scheme for focused development of deprived areas; deprived/neglected sections of society and emerging priority sectors in the North eastern States.
- **NITI Forum for North East:** Forum examines various proposals both at the Central and the State levels and prepare plans for the speedy development of the North Eastern Region.
  - Forum proposed that the development projects in the NER would be based on the concept of **“HIRA” (Highways, Inland Waterways, Railways and Airways)**.
- **Digital North East Vision 2022:** It identifies eight digital thrust areas – Digital Infrastructure, Digital services, Digital empowerment, Promotion of Electronics Manufacturing, Promotion of IT and ITes including BPOs, Digital Payments, Innovation & Startups and Cyber security.
- **Special Accelerated Road Development programme for North East (SARDP-NE):** Ministry of Road, Transport and Highways is implementing the SARDP-NE under Bharatmala Pariyojana Phase I.

## 3.12. ELECTRIC MOBILITY PROMOTION SCHEME- 2024

### Why in the news?

The Ministry of Heavy Industries (MHI) has introduced the Electric Mobility Promotion Scheme 2024 (EMPS 2024) to accelerate the adoption of Electric Vehicles in India.

## More on the News

- Ministry has formulated EMPS-2024 after the review of **Phase II of the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME) Scheme**.
  - FAME Phase II was launched in 2019 after the completion of Phase I (launched in 2015).

**To know more about the FAME Scheme, kindly refer to Article 10.2 FAME II in May 2023 edition of Monthly Current Affairs Magazine.**

## About EMPS 2024

- **Funding and Tenure:** It is a fund-limited scheme with an outlay of Rs. 500 crores for a period of 4 months, w.e.f. 1<sup>st</sup> April 2024 till 31<sup>st</sup> July 2024.
- **Objective:** Faster **adoption of electric two-wheeler (e-2W) and three-wheeler (e-3W)** to provide further impetus to the green mobility and development of the electric vehicle (EV) manufacturing ecosystem in the country.
- **Target:** It aims to support around 3.72 lakh EVs including e-2W (3.33 lakh) and e-3W (0.38 lakh).
- **Eligible EV categories:** With greater emphasis on providing affordable and environment-friendly public transportation options, the scheme will apply mainly to **those e-2W and e-3Ws registered for commercial purposes**.
  - In addition to commercial use, **privately or corporate-owned** registered e-2W will also be eligible.
  - To encourage advanced technologies, the benefits of incentives will be extended to only those vehicles which are **fitted with advanced batteries**.
- **Components:**
  - **Subsidies: Demand incentives** for e-2W & e-3W.
    - ✓ Available for consumers in the form of an **upfront reduced purchase price** (Rs. 5,000 per kWh) of EVs, which will be reimbursed to OEM (Original Equipment Manufacturer) by Government of India.
  - **Administration of Scheme** including IEC (Information, Education and Communication) activities and fee for Project Management Agency (PMA).

### Government initiatives for promotion of EV manufacturing ecosystem:

- **PLI Schemes:** Production Linked Incentive (PLI) Scheme for Automobile and Auto Components Industry in India to boost domestic manufacturing of **Advanced Automotive Technology products**.
  - **PLI Scheme for manufacturing of Advanced chemistry cell (ACC)** to bring down prices of battery in the country.
- **FAME India:** Under FAME India Scheme Phase-II, **Phased Manufacturing Programme (PMP)** has been introduced for **domestic manufacturing of electrical vehicles**, its assemblies/ sub-assemblies and parts/sub-parts thereby **increasing the domestic value addition**.
- **Rationalization of Goods and Services Tax (GST):**
  - on **electric vehicles from 12% to 5%;**
  - on **chargers/charging stations** for electric vehicles **from 18% to 5%.**
- **'Technology Platform for Electric Mobility (TPEM)'** formed by Ministry of Science and Technology to play a key role in forming an electric mobility standardization roadmap for India.

## 3.13. NEWS IN SHORTS

### 3.13.1. REGULATORY FRAMEWORK FOR BHARAT BILL PAYMENT SYSTEM (BBPS)

- **Reserve Bank of India (RBI)** issued revised regulatory framework of the BBPS.
- RBI has revised the framework in exercise of powers conferred by the **Payment and Settlement Systems Act, of 2007**.
- The revised framework seeks to streamline **the process of bill payments, enable greater participation, and enhance customer protection**.
- **About BBPS:** It is an integrated online platform that is being developed by the **National Payments**

**Corporation of India (NPCI)** for all kinds of bill payments.

- It intends to build an **interoperable service through a network of agents**, enabling multiple payment modes along with **instant generation of receipts of payments**.
- **Operates as a tiered structure** with NPCI Bharat Bill Pay Ltd (NBBL) as a **Central Unit (BBPCU)**, and Bharat Bill Payment Operating Units (BBPOUs) as **operational units**.
  - ✓ A BBPOU may function either as a **Billor Operating Unit (BOU)** or a **Customer Operating Unit(COU)** or both.

- **Regulatory framework of BBPS**
  - Enable **non-bank payment aggregators (PAs)** to participate in the system as operating units.
  - BBPCU will set the **rules and regulations governing participation criteria and system operations**, in addition to the technical standards for participation in the system.
  - COU will provide **digital or physical interface** to their customers.
  - BOU will be **responsible for onboarding billers** to BBPS.

### 3.13.2. PREPAID PAYMENT INSTRUMENTS (PPIS)

- Reserve Bank of India has **allowed banks and non-banks to issue PPIs for public transit services**.
  - PPIs will **contain “Automated Fare Collection” application** related to toll collection, parking etc.
- **About PPIs**
  - Payment instruments that **facilitate purchase of goods and services against the value stored on such instruments**.
  - Issued as **smart cards, internet wallets etc.**
  - While these instruments **can be reloaded, withdrawing cash, refund, or fund transfer will not be permitted** in PPIs.
  - **Cash loading to PPIs shall be limited to Rs.50,000 per month** subject to overall limit of PPI.

### 3.13.3. SEBI BOARD MEETING CONCLUDED WITH MAJOR APPROVALS

- 204<sup>th</sup> meeting of the SEBI (Securities and Exchange Board of India) Board concluded with some major approvals
- **SEBI announced** launch of Beta version of **optional T+0 settlement** for limited scrips and brokers.
  - T+0 settlement allows both funds and securities transactions to be **settled on same day** when the trade is initiated.
  - **Presently**, Indian securities market operate on **T+1 settlement cycle**.
- **Enhancing Ease of Doing Business (EoDB) for Foreign Portfolio Investors (FPIs):**
  - Exempted **additional disclosure requirements** for FPIs holding more than 50% of their India equity Assets Under Management (AUM) in a single corporate group.
  - **Relaxed timelines** for the disclosure of material changes to their designated depository participant (DDP).
  - **FPI registrations** that expire due to non-payment of registration fee, shall be permitted to be reactivated **within 30 days**.

- **Facilitating EoDB for companies coming for Initial Public Offering (IPO)s** (process for company to be publicly listed):
  - **Doing away with requirement of 1% security deposit** in public/rights issue of equity shares.
  - **Change in size of offer for sale** shall be based on only either issue size in rupees or number of shares.
- **Enhancing trust in AIF (Alternative Investment Fund) ecosystem** by introducing due diligence measures for investors and investments.
  - AIF is a **privately pooled investment vehicle** which collects funds from investors for the purpose of investing.

#### Foreign Direct Investment (FDI) vs FPI

- FDI is an investment by a person **resident outside India** in an **unlisted Indian company** or in **10% or more** of its paid up equity capital of a **listed Indian company**.
- FPI is an investment by a person resident outside India in **equity instruments** (shares, debentures etc.) where such investment is **less than 10%** of paid up equity capital of a **listed Indian company**.

#### Related news

##### SEBI Index Providers Regulations, 2024

- Through the 2024 regulation, SEBI has **mandated registration of index providers** managing “**significant indices**” based on **securities listed in India**.
  - ‘Index Provider’ means a person who **controls the creation, operation and administration of a Benchmark or an Index**
- This will **foster transparency in the governance** index in the securities market.
- **About Index**
  - An **index measures the price performance of a basket of securities** using a standardized metric and methodology.
  - Indexes in financial markets are often **used as benchmarks to evaluate an investment's performance** against.
  - **Nifty 50 and the Nifty PSU Bank, etc.** are some important indexes in **Indian markets**.

### 3.13.4. PRADHAN MANTRI SAMAJIK UTTHAN EVAM ROZGAR ADHARIT JANKALYAN (PM-SURAJ) PORTAL

- Prime Minister launched one-stop PM-SURAJ portal for credit schemes for marginalized sections.
- **About PM-SURAJ Portal**
  - **Nodal Ministry:** Ministry of Social Justice and Empowerment (MoSJE).
  - **Objective:** Uplifting most marginalized sections of society and **supporting credit assistance to one lakh entrepreneurs** hailing from **disadvantaged communities**.

- **Credit support** will be provided to **eligible persons** across country, facilitated through **banks, Non-Banking Financial Company-Micro Finance Institutions’ (NBFC-MFIs)**, and other organisations.

### 3.13.5. PROJECT GAIA

- Central banks unveiled **Project Gaia to evaluate climate financial risks.**
- **About Project Gaia**
  - It is a collaboration between the **Bank for International Settlements Innovation Hub Eurosystem Centre, Bank of Spain, etc.**
  - It leverages **generative artificial intelligence (AI)** particularly **Large Language Models(LLMs)** to facilitate the analysis of climate-related risks in the financial system.
  - **Benefits**
    - ✓ Can examine firm **carbon emissions, green bonds, and optional net-zero commitment disclosures.**
    - ✓ **Enhanced accessibility** to climate-related disclosures, Efficient data extraction, Harmonised climate metrics, Scalability and reliability.

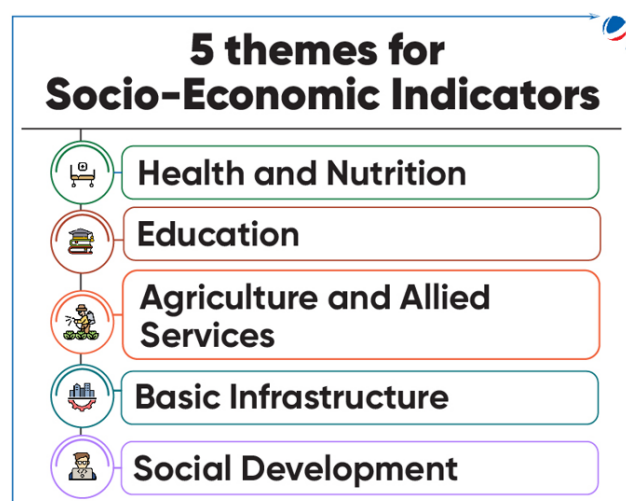
### 3.13.6. ‘VOCAL FOR LOCAL’ INITIATIVE BY NITI AAYOG

- NITI Aayog Launches **‘Vocal For Local’ Initiative Fostering Grassroots Entrepreneurship and Self-reliance.**
- **Key Highlights of Initiative**
  - **Launched under:** Aspirational Blocks Programme (ABP).
  - **Aim:** Encouraging a **spirit of self-reliance** among people of **Aspirational Blocks**, propelling them **towards sustainable growth and prosperity.**
    - ✓ It will bolster **local economies** and also **drive inclusive growth.**
  - **Implementation:** Government e-marketplace (GeM) and Open Network for Digital Commerce (ONDC) platforms will provide support to entrepreneurs for **e-commerce onboarding, establishing linkages, enhancing financial and digital literacy, etc.**
  - **‘Aakanksha’window on GeM portal:** Created for showcasing indigenous local products from **500 ABP.**
- **About ABP**
  - **Genesis:** Launched in 2023 by NITI Aayog, **ABP** is built on the success of the **Aspirational Districts Programme (ADP).**

- **Focus: Improving governance** to enhance the quality of life of citizens in the **most difficult and relatively underdeveloped blocks of India.**
- **Coverage: 500 blocks** from 27 states and 4 UTs
- **Progress monitoring:** Across **40 socio-economic indicators under 5 themes:**
- **Programme strategy:**
  - ✓ **Convergence** (of Central and state Schemes)
  - ✓ **Collaboration** (between NITI Aayog, Central Ministries, State Departments, District and block Administration)
  - ✓ **Competition** among blocks driven by a spirit of mass Movement

#### About ADP

- ADP was **launched in 2018** and **initially covered 112** most under-developed districts **across the country.**
- With States as the main drivers, this program **focuses on the strength of each district, identifying low-hanging fruits for immediate improvement and measuring progress by ranking districts every month.**



### 3.13.7. INVESTOR INFORMATION AND ANALYTICS PLATFORM (IIAP)

- Union Minister of State for Electronics and IT launched IIAP developed by IIT Madras.
- **About IIAP:**
  - It will act as a **one-stop shop for startups** to seamlessly access Venture Capitalists (VCs) and investor networks, Govt schemes, etc.
  - **Entrepreneurs can search for information on government agencies, incubators, investors, VCs, etc.**
  - An important feature of the platform is **“StartupGPT” which is an AI-based conversational platform.**
  - **It will ease information access for those who are navigating exhaustive data.**

### 3.13.8. REMISSION OF DUTIES AND TAXES ON EXPORTED PRODUCTS (RODTEP) SCHEME

- Centre has **extended RoDTEP scheme to-**
  - **Advance Authorisation Holders:** Refers to manufacturer exporters or merchant exporters tied to supporting manufacturer.
  - **Special Economic Zones Units:** Designated duty-free enclave to be treated as a territory outside the customs territory of India.
  - **Export Oriented Units:** Defined under Foreign Trade Policy as units undertaking to export their entire production of goods and services (with some exceptions).
- RoDTEP was launched by **Ministry of Commerce and Industry** in 2021 for **refunding various embedded taxes and duties on exported products.**

### 3.13.9. INTEGRATED RATING AND RANKING OF DISCOMS

- **Ministry of Power** released 12<sup>th</sup> Annual Integrated Rating and Ranking of Power Distribution Utilities (DISCOMs)
  - It is conducted with the **Power Finance Corporation as the nodal agency and rates the performance of 55 DISCOMs.**
- **Key Highlights:**
  - **AT&C losses improved** to 15.4% in FY23, reaching closer to national goal of 12-15%.
  - **Billing Efficiency improved** to 87% and **Collection Efficiency remained high** at 97.3%.
  - **Average power purchase cost increased by 71 paise/kWh** during FY23, driven by growth in power demand, more expensive coal imports and higher exchange prices.
  - Subsidy disbursements by state governments crossed 100% with a few states **supported financial losses of discoms through subsidy grants.**

### 3.13.10. 'E-KISAN UPAJ NIDHI' OF WDRA LAUNCHED

- **Ministry of Consumer Affairs, Food & Public Distribution** launches 'e-Kisan Upaj Nidhi'.
- **e-Kisan Upaj Nidhi** is a **Digital Gateway initiative** of Warehousing Development and Regulatory Authority (WDRA).
- It aims to **facilitate farmers in obtaining post-harvest loans** from banks **against their stocks** stored in the WDRA registered warehouses.
  - The loans are provided against **electronic negotiable warehouse receipts or e-NWRs** (refer to the box).

- **About WDRA**
  - WDRA was **established in 2010** under the **WDRA Act, 2007.**
  - The mission of the Authority is to:
    - ✓ Establish a **Negotiable Warehouse Receipt (NWR) system for all commodities** through a network of **registered warehouses,**
    - ✓ Making the **NWR a prime tool of trade and facilitate finance against it**
    - ✓ Enable banks to **enhance lending portfolio quality and interest in lending** against goods deposited in registered warehouses.
  - **WDRA (Negotiable Warehouse Receipts) Regulations, 2011** lays down the rules for NWRs, including terms for **standardization, issuance, surrender, etc.**
  - **FCI, NAFED and National Horticulture Board** have issued guidelines that **Central Pool Stock should be kept in WDRA registered warehouses.**
- **Warehouse Receipts**
  - **Warehouse Receipts** are an **acknowledgement in writing or in electronic form** issued by a Warehouseman or his authorized representative of the **receipt for storage of goods not owned by the warehouseman.**
  - **e-NWR** were launched in **2017 by the WDRA**

### 3.13.11. GRID CONTROLLER OF INDIA LIMITED (GRID-INDIA)

- GRID-INDIA was **conferred with Miniratna Category-I status** for Central Public Sector Enterprises (CPSEs).
- **About GRID-INDIA**
  - Established in 2009.
  - Its mandate is to oversee the operation of the Indian Power System.
- **About Miniratna Status**
  - **Category I:** CPSEs with **continuous profit in the last three years** with pretax profit >30cr in at least one year and have a positive net worth.
  - **Category II:** CPSEs that have **made profit for the last three years and have a positive net worth.**
- **Electrical Grid:**
  - It is the **intricate system designed to provide electricity** all the way from its generation to the customers.
  - The grid consists of **countless complex interconnections, however there are three main sections—electricity generation, transmission and distribution.**

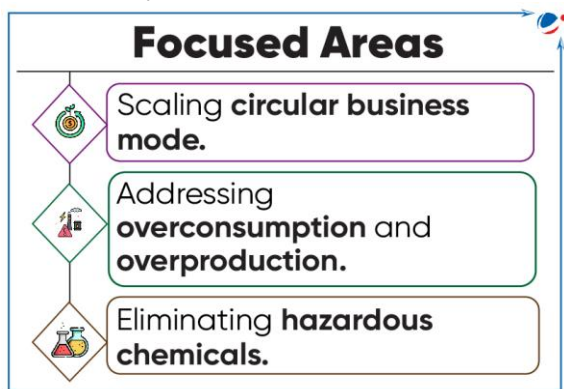
### 3.13.12. INDIATEX LAUNCHED

- **IndiaTex** (Innovative Business Practices and Economic Models in the Textile Value Chain in India) is launched



at **BHARAT TEX 2024**, one of the largest-ever global textile events organized in India.

- **IndiaTex** is a four-year (2023-2027) **United Nations Environment Programme (UNEP)** project.
  - It is a part of the **One UNEP Textile Initiative**.
    - ✓ This initiative provides **strategic leadership** and **encourages sector-wide collaboration** to accelerate a **just transition** towards a sustainable and circular textile value chain.
- **About IndiaTex**
  - **Objective:** Accelerate the transition of the Indian textile sector towards circularity.
  - **Implementation:** In collaboration with **Ministry of Textiles**.
    - ✓ It will be funded by Denmark's Ministry of Foreign Affairs.
  - It is based on **3 key concepts**:
    - ✓ **Eco-innovation: Guides Small and Medium Enterprises (SMEs) in incorporating circularity and resilience** into every aspect to reduce the environmental and social impact of human activity.
    - ✓ **Product Environmental Footprint (PEF):** PEF measures the environmental performance of a good or service throughout its life cycle (European Commission).
    - ✓ **Circularity:** Based on principle **Reduce by design**, as well as value-retention processes: Reduce, Reuse, Refurbish, Repurpose, Recycle, etc.
  - **Benefits for India:** Will improve the textiles sector's competitiveness and market access.

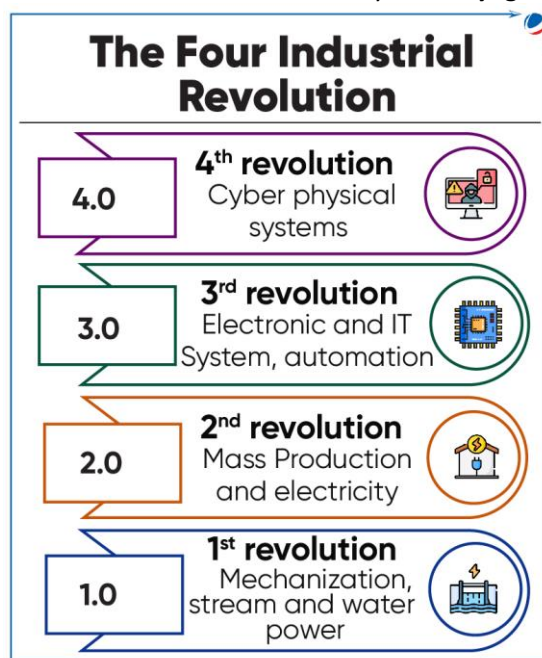


### 3.13.13. WEF'S C4IR INAUGURATED AT HYDERABAD

- World Economic Forum (WEF)'s **Centre for Fourth Industrial Revolution (C4IR)** inaugurated at Hyderabad.
- This C4IR will be the **world's first thematic centre** which will focus on **healthcare and life sciences**.
  - The inauguration was done during 21st edition of **Bio Asia 2024**

✓ **BioAsia** is the edition of the premier life sciences and healthcare forum in Asia.

- WEF's C4IR initiative is aimed at **harnessing potential of technological progress for equitable and human-centred transformation of industries, economies and societies**.
- **About 4IR (4<sup>th</sup> Industrial Revolution)**
  - 4IR means the **digital transformation** of the **manufacturing industry** by **technologies** such as Artificial Intelligence, Additive Manufacturing, **Internet of Things (IoT)**, etc.
  - It also refers to "**smart factories**"—which are fully connected **cyber-physical systems** that merges the physical and digital aspects.
- **Applications 4IR in healthcare and life sciences**
  - **Monitoring, recording, visualization** and **sharing of symptoms** using wearable devices.
  - **Evidence based care** through **health profiling** and **clinical registries**.
  - Facilitates **Precision Medicine** and **targeted drug delivery**.
- **Challenges:** **Fragmented and siloed patient information**, lack of skilled personnel, privacy concerns, security issues due to cyber challenges, ethical issues, etc.
- Earlier, **C4IR(INDIA)** centre was also established in **Maharashtra**. It is coordinated by **NITI Aayog**.



### 3.13.14. SABROOM LAND PORT (SLP)

- PM inaugurated **Sabroom Landport in Tripura** located **along India-Bangladesh international border**.
- **About SLP**
  - It is **connected to Chittagong port** of Bangladesh through **Maitree Bridge on River Feni**.

- It will facilitate **movement of passengers and cargo between India and Bangladesh.**
- **Land Ports**
  - These are **areas on international border** including portions of national highways, State highways, etc., **notified as land customs station or immigration check post**, with **facilities for clearance and transport of passengers and goods** across the borders.
  - Currently, there are **11 Land Ports operational in India** (excluding SLP).

### 3.13.15. SUDARSHAN SETU

- Prime Minister has inaugurated **Sudarshan Setu in Gulf of Kutch.**
- **About Sudarshan Setu (Signature Bridge)**
  - India's **longest cable-stayed bridge** with **solar panels installed** on upper portions of the footpath, **generating one megawatt** of electricity.
  - **Four-lane bridge** connects **Okha mainland and Beyt Dwarka island** in Gujarat.

- It will **ease transportation and reduce time of devotees** travelling between Dwarka and Beyt-Dwarka.
- It features a footpath adorned with **verses from Bhagavad Gita and images of Lord Krishna** on both sides.

### 3.13.16. SELA TUNNEL

- Prime Minister inaugurated **strategically important Sela tunnel in Arunachal Pradesh.**
- **About Sela tunnel**
  - Constructed on road connecting **Tezpur in Assam to Tawang in Arunachal Pradesh** by Border Road Organization'.
  - Constructed using **New Austrian Tunnelling Method (NATM).**
    - ✓ NATM is a support method to stabilize tunnel perimeter with the help of sprayed concrete and other support and uses regular monitoring to control stability of tunnel.
  - World's **longest bi-lane tunnel (~1.5 kms)** to provide all-weather connectivity at an altitude above 13,000 ft.



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**हिन्दी 2024: 7 अप्रैल**

**ENGLISH 2025 : 14 APRIL**

**हिन्दी 2025: 14 अप्रैल**



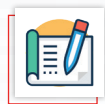
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# Answer Writing for **CIVIL SERVICES** **MAINS EXAMINATION**



Answer writing holds paramount importance in the UPSC Mains exam as it serves as the primary means for candidates to demonstrate their knowledge, understanding, analytical ability, and time management skills. Effective answer writing is pivotal in showcasing one's ability to synthesize information, critically evaluate diverse perspectives, and present balanced arguments concisely. Proficient answer writing is instrumental in securing high scores and distinguishing candidates in a competitive environment, ultimately determining their success in the rigorous selection process for the UPSC Mains examination.

## COMPONENTS OF AN IMPACTFUL ANSWER



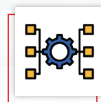
**Identification of Context:** Understanding the specific theme or topic of the question, and situating the response within its relevant context.



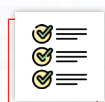
**Content Competence:** Demonstrating a comprehensive grasp of the subject matter, supported by accurate facts, relevant examples, and insightful analysis.



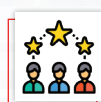
**An impactful Introduction:** Engagingly setting the stage for the answer, capturing the examiner's attention while providing a brief overview of the discussion to follow.



**Structure and Presentation:** Organizing the answer coherently with clear headings, subheadings, or bullet points, and presenting information logically and aesthetically for easy comprehension.



**Balanced Conclusion:** Summarizing key points concisely, offering insights or recommendations if applicable, and providing a satisfying closure to the argument or discussion.



**Language:** Employing precise, formal language appropriate to the context, avoiding jargon, colloquialisms, or ambiguity, and demonstrating fluency and clarity in expression.

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# 4. SECURITY

## 4.1. LEFT WING EXTREMISM

### Why in the news?

Recently, the Union Ministry of Home Affairs (MHA) released a booklet titled ‘Decisive Battle with Left Extremism’.

### Left-Wing Extremism (LWE) in India

- LWEs are individuals or groups who espouse radical leftist ideologies and seek to overthrow established systems of power through violent means.
  - LWEs are **commonly referred to as Maoists globally and as Naxalites within India.**
  - Naxal insurgency in India **originated in the 1967 uprising in Naxalbari, West Bengal.**
  - **India’s Red Corridor:** Chhattisgarh, Jharkhand, Odisha, Bihar, West Bengal, Andhra Pradesh, Telangana, Maharashtra, Madhya Pradesh, and Kerala in varying degrees.
- **Factors responsible for the emergence of LWE**
  - **Jal, Jungle, Jameen (Water, Forest and Land):** Forced labour, expropriation of resources by outsiders, evasion of land ceiling laws, denial of land claims and poorly framed legislations are curtailing the rights of people in LWE-affected areas.
  - **Socio-Economic Inequalities:** Lack of employment and education opportunities, Infrastructure deficit, absence of healthcare amenities, and social exclusion compelled youth to join Naxalite organisations.
    - ✓ Insurgency historically flourished in areas where poverty has taken root.
  - **Inadequate Governance:** Several reports suggest that government policies are not properly implemented on the ground led to rise of Naxalism.



### Data Bank

- **45 (in 2022)** LWE affected districts compared to 96 (in 2010).
- **76%** reduced incidents of violence between 2010 and 2022.
- **4903 post office** with banking services have become operational in the last 7 years.
- **8175KM roads** have been constructed in 8 years.
- **245 Eklavya Model Residential Schools (EMRSs)** have been sanctioned for LWE-affected areas.

### Reasons for the decline in LWE in India

- **Strategic**
  - **SAMADHAN:** The new operational Doctrine ‘SAMADHAN’ was enunciated to tackle LWE by MHA in 2017. (refer image)
  - **Special Taskforce:** Special operation teams formed in centre and state forces.
  - **Offensive strategy:** In 2022, security forces have achieved unprecedented success in **Operation Octopus, Operation Double Bull, and Operation Chakrabandha** in fight against LWE.
- **Developmental**
  - **Better centre-state coordination:** The government has made funds available for the capacity building of states under various schemes such as the **Security related expenditure (SRE) scheme, and the Special Infrastructure Scheme (SIS).**
  - **Public participation in Development:** The MHA has ensured people’s participation by giving **additional thrust to the scheme for the welfare of the poor and the development of militancy-affected areas.**
  - **Rehabilitation:** The government’s surrender and rehabilitation policies offer **incentives like vocational training, and financial assistance** aiding their integration into mainstream society.
    - ✓ For instance, **Industrial Training Institutes** and **Skill Development Centres** have been established in LWE-affected districts.

### 8 Pillars of fighting Left Wing Extremism

	<b>S</b>	Smart Leadership
	<b>A</b>	Aggressive strategy
	<b>M</b>	Motivation and training
	<b>A</b>	Actionable intelligence
	<b>D</b>	Dashboard based KPIs
	<b>H</b>	Harness technology
	<b>A</b>	Action plan for each theatre
	<b>N</b>	No access to financing

- **Improved Development and Governance:** Initiatives focusing on education, employment generation etc. have reduced the grievances that fuelling extremism.

### Challenges persist to control Left Wing Extremism

- **Geographical Location:** The continuous forest terrain of states like Jharkhand, Chhattisgarh, Orissa, and Telangana have allowed the Maoists/Naxals a free space to conduct arms training, hide themselves and carry out guerrilla warfare.
- **Security Challenges:** Unhindered inflow of arms and ammunition to Naxalites, through illicit manufacturers, stealing from government stocks, inadequate monitoring and surveillance etc., poses a significant security threat in LWE areas.
- **Slow pace of political reforms and participatory democracy:** There is a lack of political representation of marginalized communities, particularly tribal populations.
- **Ideological Appeal:** LWE groups have constructed a narrative that attracts people, particularly from tribal communities to join the Naxalite movement.

### Way ahead

- **Bridging trust deficit:** Employ more local people in the administrative process which can act as a bridge to curtail trust deficit. Further, **support of civil society** can be taken for awakening tribals.
  - For example, the Peace March was organized in 2021 where tribals from Chhattisgarh, Odisha and Telangana participated under the slogan of ‘**Bastar maange hinsa se azadi**’.
- **Counter Ideological appeal:** Cherish and nurture the democratic way of life deeply enshrined in our Constitution, as opposed to the totalitarian and oppressive nature of the Maoist ideology.
- **Centre-state coordination:** Both should make synchronised efforts in **eliminating radicalization** and **clear delineation of roles and responsibilities** should be delineated to tackle LWE.
- **Security and Capacity building:** Emphasis should be laid on the modernization of local police forces, and forces should be used in small groups to maintain greater efficiency.
- **Use of technology:** **Geographic information system** and **Global Positioning System** can help in **identifying camp locations** and planning attacks to eradicate threats by security forces in LWE areas/red corridor.

## 4.2. NEWS IN SHORTS

### 4.2.1. TRENDS IN INTERNATIONAL ARMS TRANSFERS, 2023

- The report is released by the **Stockholm International Peace Research Institute (SIPRI)** (an independent international institute)
- **Key highlights**
  - **Export**
    - ✓ **USA** is the largest arms exporter and its **share of total global arms exports** rose to **42%**.
    - ✓ **France**, for the first time, was the **second biggest arms exporter**, just ahead of **Russia**.
  - **Import**
    - ✓ **India** was the world’s **top arms importer**.
      - Its arms imports **increased by 4.7%** between 2014–18 and 2019–23.
      - **Russia** remained **India’s main arms supplier** (accounting for 36% of its arms imports).
    - ✓ **Ukraine** emerged as the **largest European arms importer** in 2019–23.

### 4.2.2. INDIA’S FIFTH-GENERATION ADVANCED MEDIUM COMBAT AIRCRAFT (AMCA)

- Recently, the Cabinet Committee on Security (CCS) has approved the project for the design and development of **India’s fifth-generation multirole fighter jet, Advanced Medium Combat Aircraft (AMCA)**.
- **Globally there are four fifth-generation aircraft** – F-22 Raptor and F-35A Lightning-II from the USA; J-20 of China and Su-57 from Russia.
- **About AMCA**
  - It is a medium weight, multi role, twin engine fighter aircraft.
  - **Nodal agency for executing the programme and designing:** Aeronautical Development Agency (ADA) under the Defence Research and Development Organisation (DRDO)
    - ✓ ADA is a Society under the Department of Defence Research and Development, Ministry of Defence.

- **Manufacturing agency:** Hindustan Aeronautics Limited (HAL)
- **Key features:**
  - ✓ **Advanced stealth features** such as radar absorbing material to avoid detection by enemy radar.
    - Stealth mission enables **Suppression of Enemy Air Defense (SEAD), Destruction of enemy air defence (DEAD)** and precision strike.
  - ✓ **Internal weapons bay:** For carrying up to four long-range air-to-air missiles and multiple precision-guided munitions with a payload of 1,500 kg.
  - ✓ **Capability to swing roles:** From an air-to-air role to air-to-ground.

## Advanced Medium Combat Aircraft

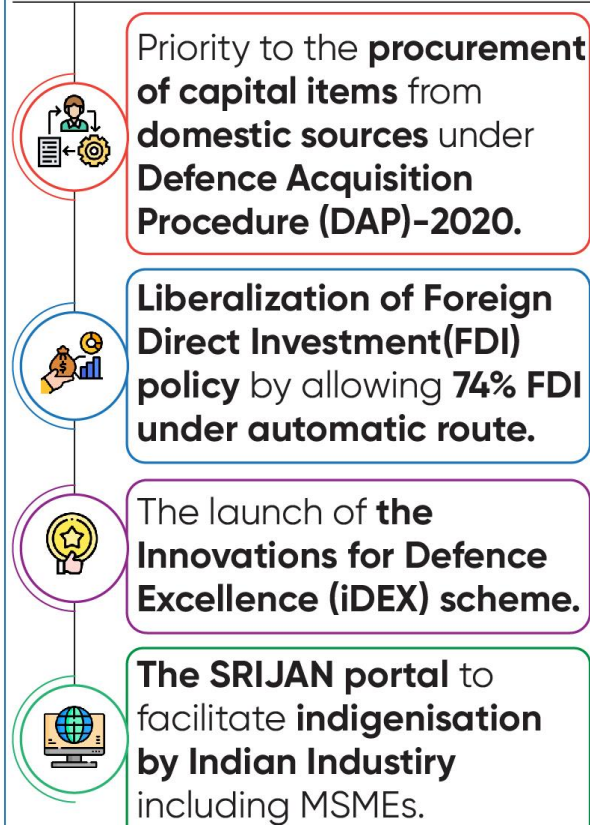


### 4.2.3. FIRST PRIVATE SECTOR FACILITIES FOR MANUFACTURING OF AMMUNITION AND MISSILES

- First private sector facilities for the manufacture of ammunition and missiles opened in Kanpur (UP).
- It is opened in the **Defence Industrial Corridors (DICs) of UP.**
  - the other defence corridor is in **Tamil Nadu.**
- The Defence Industry sector was opened up to **100% for Indian private sector participation in 2001.**
- Need for privatisation of the Defence sector:
  - India is **third largest military spender (after US and China) and the world's largest arms importer,** Stockholm International Peace Research Institute (SIPRI) Report.
  - The share of the **defence budget can be reduced which stands at 13.04% of the total government expenditure.**
  - **Surplus production** will boost defence exports and would help to achieve **the set target of 35000 crore of exports by 2024-25.**

- **Concerns:** security concerns like **protection of sensitive data at the hands of private companies; selling weapons to customers** who are not aligned with India's national interest; etc.

## Government Steps for Promotion of Indigenous Defence Production



Related News: **SAMAR (System for Advance Manufacturing Assessment and Rating) certification**

- **The Defence Research and Development Organisation (DRDO)** handed over **SAMAR assessment certificates** to nine Industry Partners.
- **About SAMAR**
  - It is a **benchmark to measure the competency of defence manufacturing enterprises.**
  - It is based on a **maturity assessment model** developed by the **Quality Council of India (QCI)**
  - **Applicability:** to all defence manufacturing enterprises.
  - **Validity: 2 years.**
  - It's an outcome of the **collaboration between DRDO and QCI.**

#### 4.2.4. VERY SHORT-RANGE AIR DEFENCE SYSTEM (VSHORADS) MISSILE

- DRDO successfully flight tested VSHORADS from a ground-based portable launcher from Integrated Test Range, Chandipur.
- **About VSHORADS missile**
  - The **indigenously developed** missile is a MANPADS (man-portable air defence system).
  - Developed by **Research Centre Imarat (RCI)** in collaboration with other DRDO laboratories and Indian Industry Partners.
  - Consist many novel technologies including miniaturized **Reaction Control System (RCS)** and **integrated avionics**.
  - **Propelled by a dual-thrust solid motor** and is meant for neutralizing low-altitude aerial threats at short ranges.

#### 4.2.5. VAJRA SENTINEL SYSTEM

- Defence Ministry signs ₹200 crore contract for anti-drone (**Vajra sentinel system**) under Indian Defence Exhibition (iDEX) initiative.
- **Vajra sentinel system**
  - It is a modern solution designed to **detect, track, and neutralize drones at extraordinary ranges**.
  - It offers **soft kills by jamming and hard kills by interceptor drones**.
    - ✓ Hard-kill space weapons include Kinetic Energy Weapons (KEWs), while soft-kill space weapons include electronic-warfare measures.
  - **Operational range** of 10 km and a **hard-kill reach** of 5-6 km.

#### 4.2.6. INS JATAYU

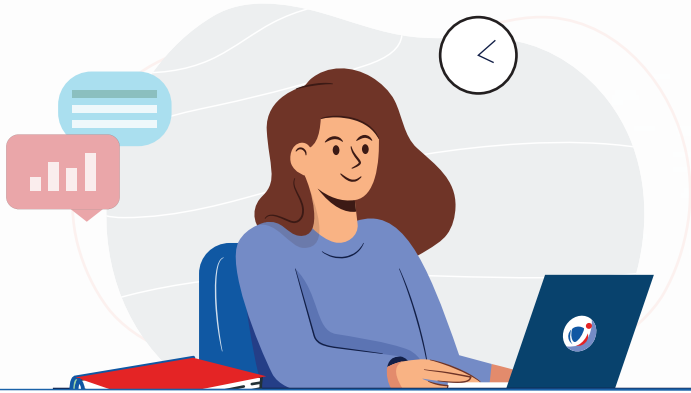
- **Naval Detachment Minicoy** has been **commissioned in Indian Navy** as **INS Jatayu**.
  - Minicoy is **southernmost island of Lakshadweep**.
- **About INS Jatayu**
  - **India's second naval base in Lakshadweep** after **INS Dweeprakshak in Kavaratti**.
  - **Significance:** Facilitate Indian Navy's operational effort towards Anti-Piracy and Anti-Narcotics Operations in Western Arabian Sea.
    - ✓ It will also augment **Indian Navy's capability as the first responder in the India Ocean region** and augment **connectivity with the mainland**.

#### 4.2.7. JUICE JACKING

- The **Reserve Bank of India (RBI)** warned users against charging mobile phones using public ports amidst the rising incidents of juice jacking.
- **About juice jacking**
  - It is a form of **cyberattack** where hackers load malware with public USB charging stations to maliciously access electronic devices.
  - It can lock a **device, export personal data and passwords** to the cyber criminals.
  - These kinds of attacks are mainly reported from public spaces such as airports, hotels, and shopping centres.

#### 4.2.8. EXERCISES IN NEWS

- **Dharma Guardian:** 5th edition of **Joint Military Exercise 'DHARMA GUARDIAN'** between the **Indian Army** and **Japan Ground Self Defence Force** commenced in Rajasthan.
  - It is an **annual exercise** and **conducted alternatively in India and Japan**.
- **Exercise Cutlass Express:** **Indian navy** participated in **U.S. Naval Forces led multinational maritime Exercise Cutlass Express in Seychelles**.
  - It is a cornerstone of maritime security and cooperation in the strategic waters of the **East African coast and the Western Indian Ocean**.
- **Exercise Samudra Laksamana:** It is a **bilateral Naval Exercise** between **India and Malasiya**.
- **Sea Defenders-2024:** 'Sea Defenders-2024' is a maritime security exercise between the **Indian Coast Guard (ICG) & United States Coast Guard (USCG)**, which recently culminated at **Port Blair (Andaman and Nicobar Islands)**.
- **Bharat Shakti: Tri-Services Firing and Manoeuvre Exercise** – Bharat Shakti – was demonstrated in Pokharan, Rajasthan.
  - 'Bharat Shakti will display **integrated operational capabilities of the Indian Armed Forces** to counter threats across **land, air, sea, cyber, and space**
- **IMT TRILAT- 2024:** India Mozambique Tanzania (IMT) Tri Lateral (TRILAT) is a joint maritime exercise.
  - **First edition of IMT TRILAT** exercise was conducted on Oct 2022.
- **Exercise Lamitiye 2024:** It is a **Joint Military Exercise** between **Indian Army** and **Seychelles Defence Forces**.
- **Exercise Tiger Triumph – 2024:** It is a bilateral **tri-Service Humanitarian Assistance and Disaster Relief (HADR)** Exercise between **India and USA**.



# Mastering CSAT:

## *A Strategic Roadmap for*

# UPSC Prelims Examination

The UPSC Prelims is the initial, highly competitive stage of the Civil Services Examination, consisting of two objective-type papers: General Studies and the Civil Services Aptitude Test (CSAT). These papers assess a candidate's knowledge, understanding, and aptitude.

With the CSAT's growing complexity, achieving the 33% qualifying score is challenging. Aspirants must navigate time management, adapting to changing difficulty levels, maintaining balance with General Studies, and finding quality practice materials. This underscores the importance of a well-planned strategy.



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## Strategic Framework for CSAT Preparation



**Initial Self-Assessment:** Begin with a self-evaluation using the previous year's CSAT papers to identify strengths and areas for improvement.



**Study Plan:** Develop a structured study plan, focusing on high yielding areas and selecting reliable study sources.



**Regular Practice and Post-Test Analysis:** Solving and analyzing previous year papers and mock tests to familiarize with the exam format and question types, ensuring a strategic approach to covering the comprehensive syllabus effectively.



**Seeking Personalized Mentorship:** Engage with mentors to receive customized strategies for improvement. Alongside essential stress management guidance, ensuring a focused and balanced preparation journey.



**Reasoning:** Sharpen your logical and analytical reasoning by practicing diverse question types from Clocks, Calendars, Series & Progression, Direction, Blood Relation, Coding-Decoding, Syllogism, and so on.

Focus on understanding patterns and building a step-by-step approach to solving problems.



**Maths and Basic Numeracy:** Strengthen foundational mathematics by revisiting basic concepts and practicing regularly.

Utilize shortcuts and mental math techniques for quicker calculations.



**Comprehension:** Improve your reading speed and comprehension by regularly reading newspapers.

Practice summarizing paragraphs and infer the main ideas to enhance understanding.



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# 5. ENVIRONMENT

## 5.1. PLASTIC WASTE MANAGEMENT

### Why in the news?

Recently, the Public Accounts Committee (PAC) presented a report titled "Pollution caused by Plastic" in Parliament, following which the government notified the **Plastic Waste Management (Amendment) Rules, 2024 (PMW Rules 2024)**.

### More on News

- The PAC report had highlighted various issues with respect to the **Plastic Waste Management (PWM) Rules 2016**.
- The recently notified **PWM Rules 2024** have amended various provisions of 2016 Rules, which can be helpful **address the challenges highlighted by PAC committee**.
  - The **Centre amended the PWM Rules 2016**, exercising the **powers conferred** to it under Sections 3, 6, and 25 of the **Environment (Protection) Act 1986**.

### About Plastic Waste Management

- **According to the CPCB's annual report in 2020-21**
  - India generated around **4,200,000 Tonnes Per Annum plastic**.
  - **Per capita plastic waste generation doubled** over the last five years.
- **PWM Rules, 2016** (as amended till 2024) were notified for **effective and scientific management** of Plastic waste in India.
  - Rules apply to every **Waste Generator, Local Body, Gram Panchayat, Manufacturer, Importer, Producer and Brand Owner**.
  - **Increase minimum thickness of plastic carry bags from 50 to 75 microns** from 30th September, 2021 and to **120 microns** with effect from 31st December, 2022.
  - **Prohibits identified Single Use Plastic (SUP) items**, which have low utility and high littering potential.
  - Introduced '**Extended Producers Responsibility (EPR)**' system.

### Key provisions of PWM Rules, 2024

- **Assessment Mechanism: According to the new rules, the Local body has been mandated to** undertake an annual **assessment of plastic waste generated**, including plastic waste existing in **dump sites**. **It will also estimate the quantity of plastic waste to be generated** in following **five-year period**.
  - Additionally, the 2024 rules mandate the **manufacturer** of commodities made from **compostable or biodegradable** plastics to **report the quantity** of such commodities introduced in the market and pre-consumer waste generated **to the CPCB**.
  - **Earlier the PAC had pointed out that** there was a **lack of mechanism for assessment** of generation of plastic waste (current and future).
- **Centralised Portal for Registration: The rules provide for an online centralized portal for registration** for Producers, Importers, Brand-Owners and manufacturers of commodities made from compostable plastic or biodegradable plastic.
  - **It also provides for default registration where the registration is not granted within a period of thirty days** after the receipt of application complete in all respect.
  - **Earlier the PAC had pointed out that Plastic units have been functioning without valid registration** due to lackadaisical approach of Central Pollution Control Board (CPCB), SPCBs, etc.
- **Elimination of Single Use Plastics (SUP): The 2024 rules now provide that Local body shall take necessary measures** to prevent stocking, distribution, sale and usage of prohibited **SUP items** in their jurisdiction and submit annual report.
  - **Earlier the PAC had pointed out a delay in elimination of SUP** as many states did not even ban them.
- **Expansion of scope of EPR: The PAC had pointed out that there is an Absence of uniform framework for EPR** hampering development of system for collecting and processing of plastic wastes.
  - **Now the Producers, Importers and Brand Owners** who introduce any **plastic packaging** in the market shall be **responsible for collection of such plastic packaging**.
  - The provision also extends to these stakeholders and manufacturers of commodities made from **compostable or biodegradable** plastics.
  - **The new rules also remove specific prescription for modalities** to be developed by these stakeholders for waste collection system.
  - **Additionally, now the local body is responsible** for development and setting up of infrastructure for **segregation, collection, storage, transportation, processing and disposal** of plastic waste either on its **own or by engaging agencies (but not producers)**.

- ✓ **Manufacturer, producer, importer, brand owner**, manufacturer of commodities made from **compostable** plastics or **biodegradable** plastics may engage with local body on voluntary basis.
- Local body has also been mandated to **assess plastic waste management infrastructure** and report the same annually to the SPCB and PCC (Pollution Control Committee).
- **Online Report Submission: The PAC had pointed out that incomplete and invalidated data** is being channelised to MoEFCC by ULBs for **decision making**.
  - **The new rules, however, mandate online report submission to SPCB and PCC by**
    - ✓ **manufacturer and importer** (on quarterly basis),
    - ✓ **person engaged in recycling or processing of plastic waste** (on annual basis),
    - ✓ **person engaged in sale of plastic raw material** or an intermediate material used for manufacture of plastic packaging (on annual basis).
- **Monitoring:** For better monitoring of the rules, the 2024 Rules **Provides for institutional mechanism that can facilitate effective monitoring and ensure accountability and transparency**

#### Other provisions of PWM Rules, 2024 that could be helpful in effective plastic waste management

- **Changes in Definitions of stakeholders: Importer is one who imports for commercial use.**

- **Seller** means a person who sells plastic raw material such as resins or pellets or intermediate material used for producing plastic packaging.
- **Producer** covers manufacture of intermediate material as well as in contract manufacturer.

### Online reporting mechanism under PWM, 2024

**Report by local bodies**

- Local bodies are required to **annually submit reports online** to both the **Urban (or Rural) Development Department** and the SPCB and PCC.
- SPCB and PCC shall audit these reports and publish the **annual report on their websites**.

**Reports by SPCB and PCC**

- SPCB and PCC shall submit **online an annual report to the Central Pollution Control Board (CPCB)** on the implementation of these rules.

**Report by CPCB**

- CPCB shall prepare a **consolidated annual report** on the implementation of these rules and **submit to the Central Government along with its recommendations**.

- **Broadens definition of manufacturer** to cover **manufacturers of compostable and biodegradable plastics**.
- **Precise definition of Biodegradable plastics:** It refers to plastics, other than compostable plastics, which undergoes degradation by biological processes **in specific environment** like soil, landfill, sewage sludge, fresh water, marine, **without leaving any micro plastics** or visible or distinguishable or toxic residue.
- Certificate from FSSAI: Mandates **manufacture of compostable or biodegradable plastics (or commodities) for certification** from Food Safety and Standards Authority of India (for food contact applications) in addition to CPCB.
- **Precise direction for labeling for different types of plastics**
  - **For recycled:** Label of 'recycled' shall **specify the percentage of recycled plastic**.
  - **Compostable:** Product of compostable plastics shall bear a 'label —compostable only under industrial composting'.
  - **Biodegradable:** Product made from biodegradable plastic shall bear label '**Biodegradable**' which should also mention **number of days and type of environment** (soil, landfill, water etc.) under which it could be biodegraded.

### Know the term

- **Microplastic:** Refers to **small plastic pieces less than 5 millimeters long** which can be harmful to biological life.
  - Come from variety of sources including **degradation of bigger plastic materials**.
- **Microbeads:** Refers to a type of microplastic and are **very tiny pieces of manufactured polyethylene plastic** that are **added as exfoliants** to health and beauty products such as some **cleansers and toothpastes**.
  - **Easily pass-through water filtration systems** and end up in ocean.

## Conclusion

The new rules are a welcome step towards curbing the plastic menace in India. The emphasis must now be effective implementation of the rules which will aid India towards a sustainable future.

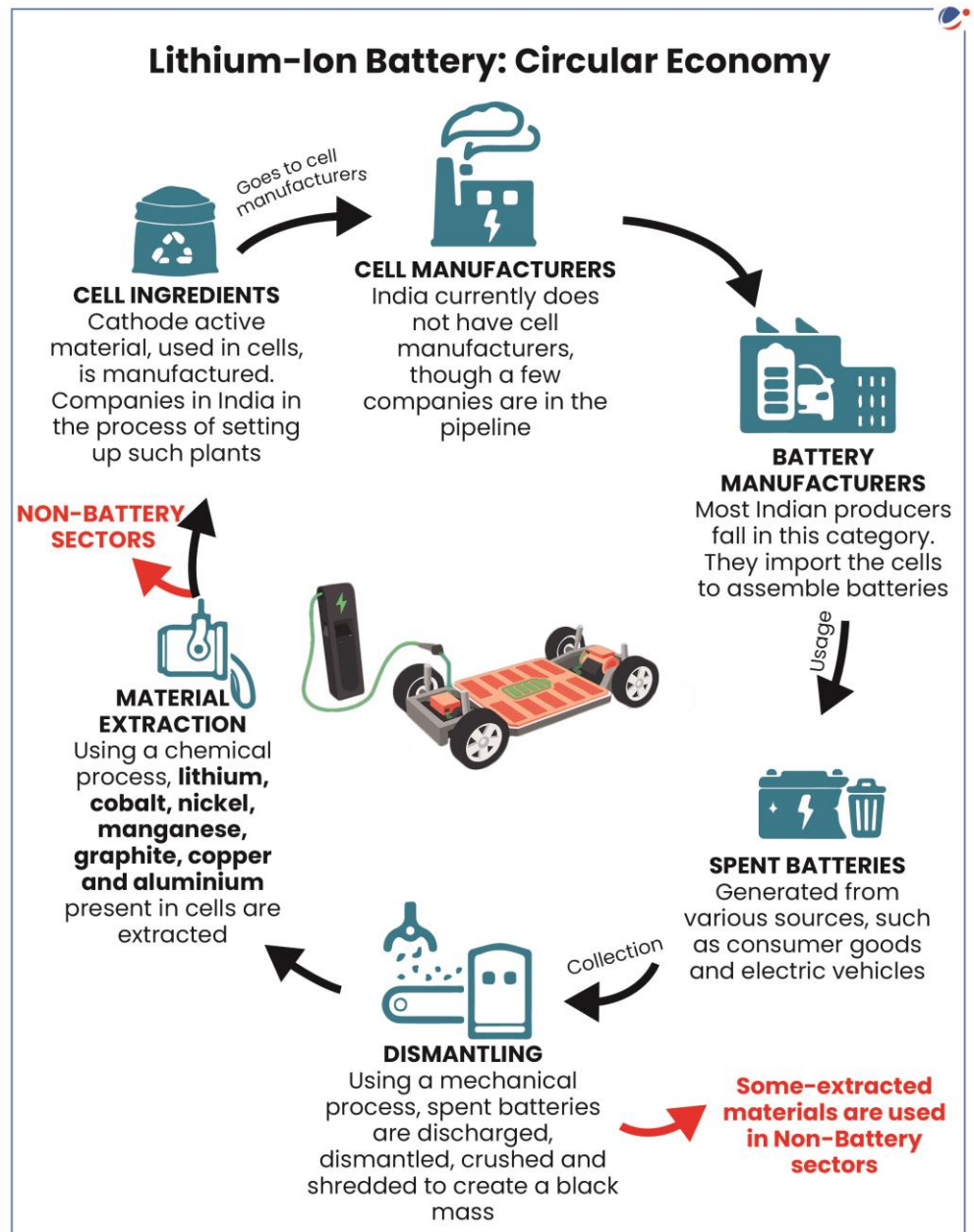
## 5.2. BATTERY WASTE MANAGEMENT (AMENDMENT) RULES, 2024

### Why in the News?

Recently, The Union Ministry of Environment, Forest, and Climate Change has recently made revisions to the Battery Waste Management Rules, 2022.

### Need for Battery Waste Management

- **Growth in Battery Use:** The surge in the utilization of **electronics, electric vehicles (EVs), renewable energy systems** etc., has led to a notable rise in the demand for batteries. This also leads to the corresponding battery waste generation.
  - For instance, in 2021, global annual demand for batteries was around **933 GWh**, which is expected to grow to **5,100 GWh** by 2030.
- **Informal Recycling Practices:** Currently, a very large share of used **Lead Acid Batteries** (more than 90%) is being recycled by informal recyclers which causes **lead pollution**.
  - These recyclers generally do not follow prescribed environmental standards and regulations.
- **Environmental Protection:** Batteries contain toxic substances such as **lead, cadmium, mercury, and lithium**, which can leach into soil and water if improperly disposed of.
- **Promotion of Circular Economy:** Recycling and reusing batteries contribute to closing the loop of materials, reducing the environmental footprint of battery production, and fostering a more sustainable economy.
- **Human Health:** Improper handling and disposal of batteries can lead to human exposure to hazardous chemicals, resulting in health risks like neurological damage, respiratory problems, kidney failure, reproductive disorders, etc.



## Current Governance framework of Battery Waste in India

- The Ministry of Environment, Forest and Climate Change, **published the Battery Waste Management Rules, 2022**, to ensure environmentally sound management of waste batteries **under the Environment (Protection) Act 1986**.
  - The rules **replaced the Batteries (Management and Handling) Rules, 2001**.
  - They were amended in 2023 and much recently in 2024.
- **Key Provisions of the Battery Waste Management Rules, 2022**
  - **Extended Producer Responsibility (EPR)**: Where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.
  - **Centralized online portal**: for exchange of EPR certificates between producers and recyclers/refurbishes.
  - **Mandatory recovery**: the minimum percentage of recovery of materials from waste batteries.
  - **Polluter Pays Principle**: Environmental compensation will be imposed for non-fulfilment of EPR target.
    - ✓ Funds collected shall be utilised in collection and refurbishing or recycling of uncollected and non-recycled waste batteries.

## Key changes introduced by the New Rules

Particulars	Battery Waste Management Rules, 2022	Battery Waste Management (Amendment) Rules, 2024
<b>Provision of Certificate for Waste Battery</b>	<ul style="list-style-type: none"> <li>• As per 2022 rules, <b>Extended Producer Responsibility (EPR)</b> certificates will be generated by Central Pollution Control Board (CPCB) through the <b>centralised online portal</b> based on the <b>recycled or refurbished</b> quantities and assigned to recyclers or refurbishes.                             <ul style="list-style-type: none"> <li>○ They can sell the assigned <b>EPR</b> certificates to Producer in exchange of waste batteries.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The <b>CPCB</b> shall fix the highest and the lowest price for <b>EPR</b> certificates.                             <ul style="list-style-type: none"> <li>○ It shall be equal to <b>100% and 30%</b>, respectively of the environmental compensation leviable on the <b>obligated entities</b> for non-fulfilment of <b>EPR obligations</b>.</li> </ul> </li> <li>• The exchange price of <b>EPR certificate</b> between <b>registered entities</b> through the portal shall be between the highest and the lowest prices.</li> </ul>
<b>Action on violations and imposition of Environmental Compensation</b>	<ul style="list-style-type: none"> <li>• <b>Committee for Implementation</b> constituted by <b>Central Pollution Control Board (CPCB)</b> shall prepare and recommend <b>guidelines</b> for imposition and collection of <b>Environmental Compensation</b> from producers and entities involved in recycling of waste battery, for non-compliance of rules.</li> <li>• The recommended guidelines shall be submitted to <b>Ministry of Environment, Forest and Climate Change</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• Now, The <b>CPCB</b> will prepare and recommend <b>these guidelines</b>.                             <ul style="list-style-type: none"> <li>○ The <b>CPCB</b> may consult the Committee for Implementation for the same.</li> </ul> </li> <li>• The recommended guidelines shall be submitted to the <b>Ministry</b>.</li> </ul>

## Way Forward

- **Policy Support**: For example NITI Aayog has suggested that,
  - there should be **provision of a separate licence for handling lithium ion batteries** separate from electronic waste to reduce the minimum requirement for entry in recycling
  - **disposal of batteries in landfills** should be made **illegal**.
- **Incentivizing manufacturers**: Incentives could be provided to manufacturers to meet recycling regulations, such as **green taxes**, in order to **enforce extended producer responsibility**.
- **Incentivizing Customers**: A **Deposit Refund System** can be implemented to provide incentives to customers to return batteries.
- **Improving collection system**: A **separate collection agency** could be established to help in streamlining both the collection and the recycling of batteries.
- **Financing for R&D**: Several research organizations can be funded to come up with commercially viable recycling processes with high recovery rates.

## 5.3. GREEN CREDIT PROGRAM

### Why in the News?

Ministry of Environment, Forests and Climate Change (MoEFCC) notified methodology for Calculation of Green Credits (GC) for Tree Plantation Activity" Green Credit Program (GCP) 2023 rules under Green Credit Program (GCP).

### About Green Credit (GC)

- It is a singular unit of an incentive provided for a specified activity, delivering a **positive impact on the environment**.
- These credits can be traded on a dedicated exchange, similar to how carbon credits are traded.

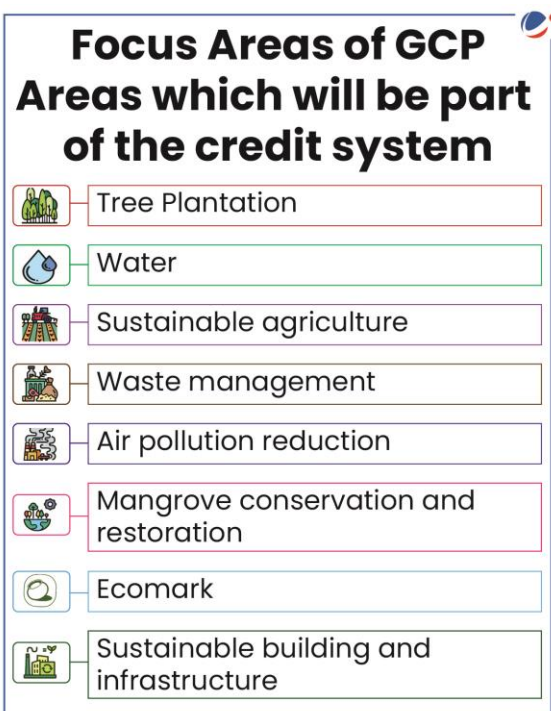
### About Green Credit Rules

- Forest Departments of all States and Union territories are required to **identify degraded land parcels under their control to enhance green cover**.
- Identified land parcels for plantation must be **free from encumbrances and should be at least 5 hectares in size**.
- ICFRE instructs Forest Departments to **conduct tree plantation within two years**.
- Green Credits (GCs) are issued by ICFRE**, with one GC awarded for each grown tree, subject to a minimum **density of 1100 trees per hectare**, and based on local silvicultural and soil conditions.

Green Credit	Carbon Credit
<ul style="list-style-type: none"> <li>Under the <b>Green Credit Program (GCP) operating under The Environment (Protection) Act, 1986</b>.</li> <li>Provides advantages to <b>individuals and communities</b>.</li> </ul>	<ul style="list-style-type: none"> <li>Under the <b>Carbon Credit Trading Scheme operating under The Energy Conservation Act, 2001</b>.</li> <li>Primarily <b>benefit industries and corporations</b>.</li> </ul>
<b>Green credit activities may qualify for carbon credits, leading to climate co-benefits like carbon emissions reduction, but not vice versa.</b>	

### About Green Credit Program (GCP)

- It is an **innovative market-based mechanism to incentivise environment positive actions by different stakeholders** such as Industries/institutions, State governments, philanthropies.
  - The participation to the GCP shall be based on **voluntary participation**.
- Aim:**
  - Aligned with the 'LiFE'-'Lifestyle for Environment' initiative, it promotes **sustainable living, environmental conservation, and eco-friendly development through grassroots engagement** and behavioural changes.
  - Encourage industries, companies, and other entities** to meet their existing obligations or other obligations (voluntary).
- Established under: "The Environment (Protection) Act, 1986"** with MoEFCC as Nodal Agency.
- Governance Structure**
  - The GCP's governance framework is supported by an **inter-ministerial Steering Committee**.
  - The Indian Council of Forestry Research and Education (ICFRE) serves as the GCP Administrator**, responsible for program implementation, management, monitoring, and operation.
  - GCP has established a user-friendly digital platform to streamline **Project Registration, Verification and Issuance of Green Credits**



## 5.4. UN ENVIRONMENT ASSEMBLY

### Why in the news?

The **Sixth session of the UN Environment Assembly (UNEA-6)** got concluded recently at the UN Environment Programme (UNEP) headquarters in **Nairobi, Kenya**.

## More about the News

- **Theme:** “Effective, inclusive and sustainable multilateral actions to tackle climate change, biodiversity loss and pollution”
- The **UNEA-7** is scheduled to be held in **December 2025 at Nairobi.**

### About United Nations Environment Assembly (UNEA)

- **Established in 2012**, at the United Nations Conference on Sustainable Development.
- **Roles and Functions:**
  - **The United Nations Environment Assembly (UNEA) of the UNEP** is the **world’s highest-level decision-making body on the environment**
  - It set the global environmental agenda; provide overarching policy guidance and define policy responses to address emerging environmental challenges in the world.
- **Organisational Structure:** It consists of a President and 8 Vice Presidents (forming the UNEA Bureau)
- **Membership:** Consists of all the **193 Members of the United Nations.**

## Key Outcomes of UNEA-6

- **Re-affirmed commitment to tackle triple planetary crisis through the adopted Ministerial Declaration**
- The **first Multilateral Environmental Agreements Day (28<sup>th</sup> Feb 2024)** dedicated to the international agreements on major environmental issues was observed.
- Draft resolution’s on Combating sand and dust storms, management of chemicals and waste, Cooperation on air pollution, Promotion of Sustainable lifestyle etc. were passed.

### Know the term

- **Triple planetary crisis** refers to the **three interlinked issues threatening the humanity** which include **Climate Change, Pollution and Biodiversity Loss**

## Other reports released and Awards announced in UNEA 6

Report released	Details
<b>Global Resource Outlook 2024</b>	<ul style="list-style-type: none"> <li>• The report warns that <b>without concerted action</b> to reduce global consumption, <b>the extraction of natural resources could rise by 60%</b> from 2020 levels.</li> <li>• The extraction would also <b>increase the climate damage and risks to biodiversity</b> and human health.</li> </ul>
<b>Global Waste Management Outlook 2024</b>	<ul style="list-style-type: none"> <li>• <b>Municipal solid waste generation is predicted to grow</b> from 2.3 bn tonnes (2023) to 3.8 billion tonnes by 2050.</li> <li>• Direct <b>cost of waste management would almost double</b> by 2050 from an estimated \$ 252 bn in 2020.</li> </ul>
<b>Used Heavy-Duty Vehicles and the Environment report</b>	<ul style="list-style-type: none"> <li>• It <b>highlighted the rise of emissions from the heavy polluters</b>, and their negative climate and health impacts.</li> </ul>
<b>Young Champions of the Earth Award</b>	
<ul style="list-style-type: none"> <li>• <b>Introduced in 2017</b>, It is a <b>flagship youth engagement initiative</b> of the UNEP</li> <li>• <b>Young people (Aged between 18-30 years)</b> are selected from <b>every region</b> of the globe and be named UNEP Young Champions of the Earth.</li> </ul>	

## 5.5. INTERNATIONAL BIG CAT ALLIANCE (IBCA)

### Why in the News?

The Union Cabinet recently approved the establishment of the **International Big Cat Alliance (IBCA)** with headquarters in India.



### More about News

- Centre will **provide initial budgetary** support of Rs. 150 crores for a period of five years, from 2023-24 to 2027-28.

### About International Big Cat Alliance (IBCA)

- It is a **multi-country & multi-agency coalition.**
- It **comprises of 96 big cat range countries, conservation partners, scientific organizations, and business groups.**

- It aims at **conservation of 7 big cats** namely **Lion, Tiger, Snow Leopard, Leopard, Cheetah, Jaguar, and Puma.**
- It recognizes the **importance of integrating biodiversity policies with SDGs** to achieve holistic and inclusive conservation outcomes.
- **Brief Background:**
  - In **2019** the Indian Prime Minister highlighted India's leadership in **big cat conservation and proposed an Alliance of Global Leaders.**
  - In **2023, on the 50th anniversary of Project Tiger,** the IBCA was officially launched.
- **Membership:**
  - **16 countries,** including **Brazil, Nepal, Bangladesh, and Malaysia,** have **officially joined the IBCA** led by India.
  - Additionally, **nine international organizations,** including the **International Union for Conservation of Nature (IUCN)** and the **World Wildlife Fund (WWF) International,** have given consent to join the IBCA.
- The framework is modelled after **the International Solar Alliance (ISA).**

Big Cats and their Conservation Status		
<p><b>TIGER</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Endangered</li> <li>• <b>CITES Listing:</b> Appendix 1</li> <li>• <b>WPA Listing:</b> Schedule 1</li> </ul>	<p><b>LION</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Vulnerable</li> <li>• <b>CITES Listing:</b> Appendix 1 (Only Indian population, Rest in Appendix 2)</li> <li>• <b>WPA Listing:</b> Schedule 1</li> </ul>	<p><b>JAGUAR</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Near Threatened</li> <li>• <b>CITES Listing:</b> Appendix 1</li> <li>• <b>WPA Listing:</b> Not Applicable</li> </ul>
<p><b>CHEETAH</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Vulnerable</li> <li>• <b>CITES Listing:</b> Appendix 1</li> <li>• <b>WPA Listing:</b> Schedule 1</li> </ul>	<p><b>PUMA</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Least concern</li> <li>• <b>CITES Listing:</b> Appendix 1</li> <li>• <b>WPA Listing:</b> Not Applicable</li> </ul>	<p><b>SNOW LEOPARD</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Vulnerable</li> <li>• <b>CITES Listing:</b> Appendix 1</li> <li>• <b>WPA Listing:</b> Schedule 1</li> </ul>
<p><b>LEOPARD</b></p>  <ul style="list-style-type: none"> <li>• <b>IUCN Status:</b> Vulnerable</li> <li>• <b>CITES Listing:</b> Appendix 1</li> <li>• <b>WPA Listing:</b> Schedule 1</li> </ul>		
<p><i>Note: All CITES listed species are also part of WPA schedule IV</i></p>		

## 5.6. GANGA RIVER DOLPHIN


### Why in the News?

India's first National Dolphin Research Centre (NDRC) was recently inaugurated in Patna, Bihar, aimed at conserving the endangered Gangetic River dolphin.


### About NDRC

- It facilitates in-depth studies conducted by scientists and researchers regarding the dolphin species.
- Additionally, the centre offers training to fishermen on effective dolphin conservation methods.


**PROTECTION STATUS OF GANGA RIVER DOLPHIN**




**WPA, 1972**  
**Schedule I**





**IUCN STATUS**  
**EN**



**CITES**  
Appendix I



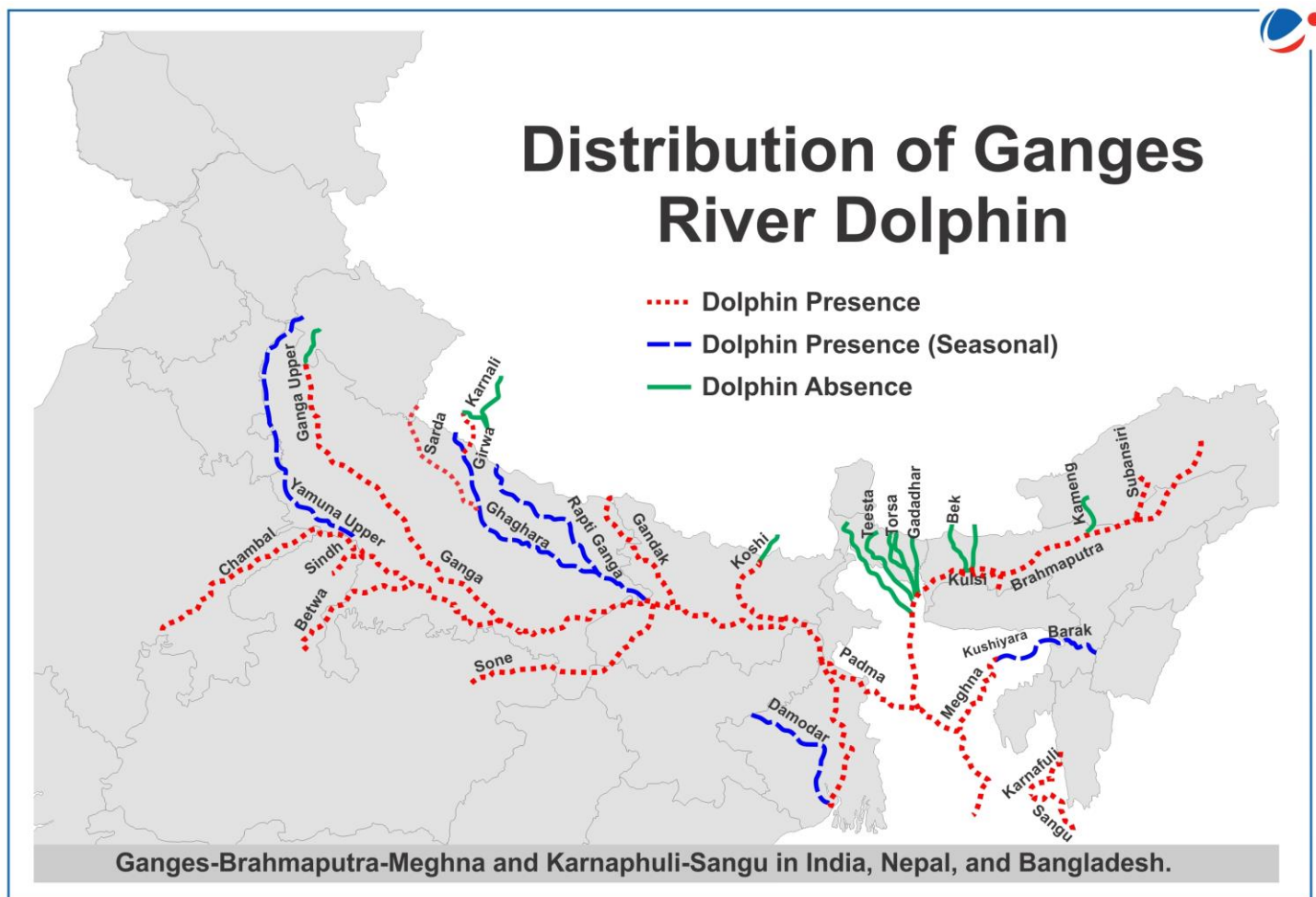
In list of 22 species covered under Species Recovery Programme? 



**CMS**  
Under Convention on Migratory Species

## About Ganga River Dolphin

- **Key features:**
  - **Ganga River Dolphin (*Platanista gangetica*)** commonly known as **Susu** is **endemic to the Indian sub-continent**.
    - ✓ Also known as **the Tiger of the Ganga**.
  - Long **thin snout, rounded belly, stocky body, and large flippers**.
  - **Slit similar to a blowhole** on **top** of its head, acting as a nostril.
  - **Females are larger than males** and give birth to one calf every two to three years.
  - **Calves have chocolate brown skin at birth**, while adults have grey-brown smooth, hairless skin.
- **Other Features**
  - Ganges River dolphins, **restricted to freshwater**, use **ultrasonic waves** for hunting and navigating.
  - Their **unique swimming behaviour aids in finding food**, and they emit the '**Susu**' sound while surfacing to breathe.



- **Major Threats:**
  - **Unintentional killing, overexploitation of prey due to fishing gear entanglement, poaching for dolphin oil.**
  - **Habitat destruction** from water projects, **pollution**, and **fragmented populations from dams**.
- **Initiatives for Dolphin Protection:**
  - **Vikramshila Gangetic Dolphin Wildlife Sanctuary, Bihar:** India's sole dolphin sanctuary.
  - **Project Dolphin: Modelled after Project Tiger**, focusing on special conservation measures for Gangetic River Dolphins, as **they are umbrella species**.
    - ✓ To conserve both **the marine and riverine dolphins** as well as associated Cetaceans.
    - ✓ It is funded by **the Ministry of Environment, Forests and Climate Change, India**
  - **National Aquatic Animal:** It was declared the **national aquatic animal on 5th October 2009**, which is celebrated as **National Ganga River Dolphin Day**.



## 5.7. ZERO BUDGET NATURAL FARMING

### Why in the News?

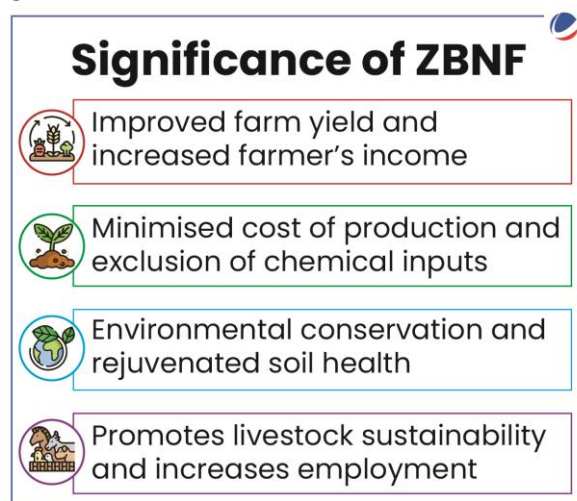
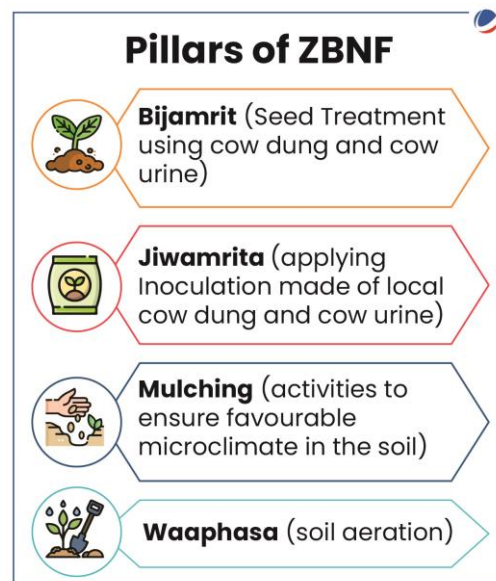
A research paper by the **National Bank for Agriculture and Rural Development (NABARD)** and the **Indian Council for Research on International Economic Relations (ICRIER)** has cautioned regarding “a complete switch” to natural farming

### More about the news

- Research was conducted as **part of agriculture project of ICRIER and financially supported by NABARD.**
- The paper **recommended long-term experimentation** before declaring ZBNF a nationwide practice.

### About Zero Budget Natural Farming (ZBNF)

- Formulated by **Subhash Palekar in India** on the basis of four essential elements namely **Beejamrit, Jeevamrita, Acchadana, and Waaphasa** (refer the info-graphic)
  - It was first practiced by a Japanese farmer and philosopher, **Masanobu Fukuoka.**
- **Other important principles in of ZBNF include,**
  - **Intercropping**, of a monocot and dicot crop on the same field
  - **Contours and bunds**, to preserve rainwater
  - **Revival of Local species of earthworms** through increased organic matter
  - **Use of Dung of indigenous cow** (*Bos-indicus*) with highest concentrations of micro-organisms
- **Promotes the usage of natural farming techniques** in which farming is done without-
  - **Use of chemicals and**
  - **Use of credit** or spending any money on purchased inputs
- It was renamed as **Bhartiya Prakritik Krishi Padhati (BPKP)** as a sub-scheme under **Paramparagat Krishi Vikas Yojana (PKVY)**, which aims at promoting Organic farming and soil health.
  - **BPKP** is a Centrally Sponsored Scheme, initiated for a period of six years (2019-25).
    - ✓ **Aims to cover 12 Lakh ha under ZBNF** in 600 major blocks of the country.
    - ✓ **Provides financial assistance of Rs.12,200/ha for 3 years** for Cluster formation and Capacity building.
- **Status of ZBNF in India**
  - Currently **eleven states practice ZBNF in over 6.5 Lakh hectares.**
  - States like **Andhra Pradesh (AP)** has adopted ZBNF over **1 lakh hectares** of land and aims to convert its entire agriculture land pool (80 lakh hectares) under ZBNF by 2027.



### Issues in ZBNF

- **Labour intensive form of agriculture**, which requires significant work in the farmland and livestock maintenance.
- **Debatable concept of Zero cost input** as it is **impossible to produce crops without cost inputs** as freely available inputs like rainwater and family labour also adds to the opportunity cost.
- **Yield variations** will become a common phenomenon as the natural factors during a particular season would completely decide the actual output.
- **Indigenous cow breeds** is an integral requirement for the farming practice and they incur high maintenance cost with low milk yield to the farmer.
- **No independent studies** to validate the claims that ZBNF plots have a higher yield than non-ZBNF plot.

## Conclusion

There is **need to emphasis on scientific studies**, across the country to find efficacy and efficiency of the farming technique across various landscapes and ecosystems. Also, **impetus to the indigenous cow breeds (like Punganur Cow, Red Sindhi etc.)** can also be done through various government and cooperative initiatives thereby increasing their numbers.

Comparison between Natural farming, Organic farming and Inorganic farming		
Natural farming	Organic farming	Inorganic farming
Advocates <b>zero external intervention</b> like tilling, fertilisers, etc	Advocates <b>minimal intervention</b> .	Advocates <b>maximum intervention</b> using tillers, fertilisers etc.
<b>Natural laws are applied</b> to agricultural activities.	Follows <b>accepted principles and practices</b> .	<b>Modifies the farm activities</b> to improve the output
<b>No usage of external fertilisers</b>	<b>Organic fertilisers</b> are allowed	Uses <b>Chemical fertilisers</b>
Apart from natural manure, it <b>encourages decomposition of organic matter</b> by microbes and earthworms	<b>Manures</b> like compost, vermin-compost are used on farmlands	May or may not use manures as they mostly utilise Chemicals for nutrients
<b>Low cost</b> , as it eliminates external input costs and machineries usage.	<b>Expensive</b> as compared to other forms	<b>Comparatively less costly</b> as compared to organic farming due to less usage of manpower
Encourages <b>usage of local varieties</b> of seeds	Encourages <b>certified organic seeds</b>	Encourages <b>usage of hybrid or genetically modified seeds</b>

Scan the QR code to know more about **Sustainable Agriculture**.

**Weekly Focus #67:** Sustainable Agriculture Part 1\_Understanding the concept and practices



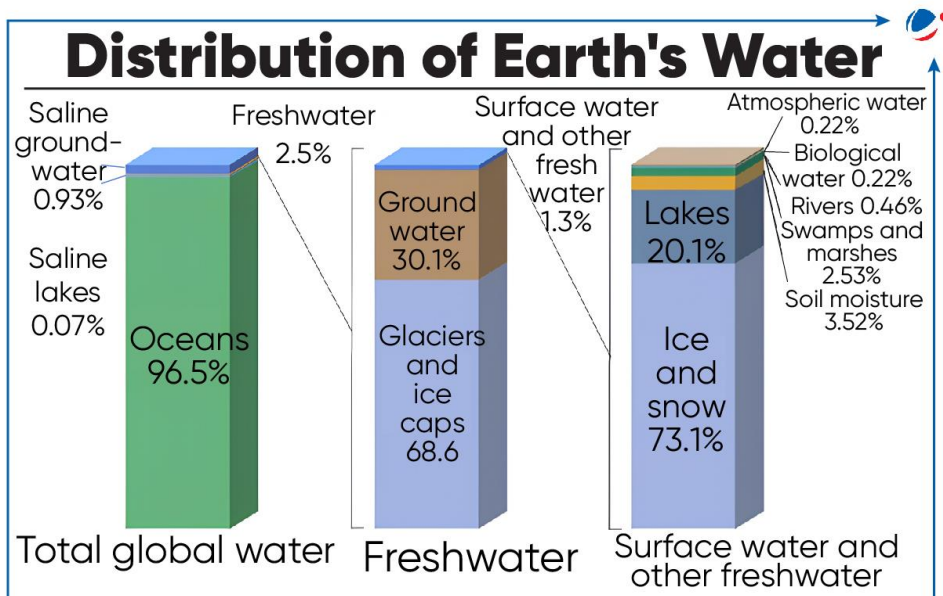
## 5.8. URBAN WATER CRISIS

### Why in the news?

Bengaluru is facing one of the worst water crises in recent years due to poor rainfall.

### Urban Water Crisis

- Water crisis refers to a situation where there is **inadequate access to clean and safe water** for various needs due to factors like pollution, overuse, and poor management.
- Water resources becoming scarce** because of **drought conditions** as **aggravated by climate change** has been referred to as 'Day Zero'.
  - Day Zero means **water levels in dams** supplying water to the city are **critically low**; it does NOT imply that there is no water in dams.
    - ✓ **Cape Town in 2018 and Chennai in 2019** have experienced 'Day Zero'.
- Water crisis is a key hindrance in **achieving sustainable Development Goals (SDGs)** particularly **SDG6** which calls for clean water and sanitation by 2030.



## Reasons behind the Urban Water Crisis

- **Unplanned urbanization:** The rapid erosion of green cover, encroachment of water bodies and overexploitation of natural resources have strained water availability in the city.
  - **Unplanned concretization prevents** water from percolating into the soil and **recharging the water table.**
    - ✓ In Bengaluru, the number of lakes has **decreased from 262 in 1961 to about 81 currently**
- **Pollution of water bodies:** For example, large water bodies like **Bellandur Lake (Bengaluru)** have become heavily polluted due to **industrial effluents and untreated sewage** flowing into them.
- **Over-extraction of groundwater:** In the **most populated cities**, groundwater levels have drastically decreased over the past two decades which further exacerbates the problem of water crisis.
- **Poor water supply infrastructure:** Many urban areas lack proper water supply infrastructure, including **distribution networks, treatment plants, and storage facilities.**
  - Because of these, leakage happens which in turn results in **high non-revenue water** (i.e., water "lost" before it reaches the customer).
- **Climate change:** Erratic monsoons and a rise in the frequency and intensity of floods and droughts could adversely affect the accessibility and availability of water.
- **Aquifer system:** Groundwater resources in South India are not able to sustain for very long in the event of a prolonged dry spell.
  - South India has a very different kind of aquifer system **which is very rocky** that don't hold a lot of water.

## Way Forward

- **Nature-Based Solutions:** Promoting **green-blue infrastructure** and **restoration of wetlands** can help absorb excess water during floods and store water during droughts.
- **Community based solutions:** The community play a critical role in efficiently managing water (preventing wastage, pollution and leakage), wastewater reuse, improving groundwater levels, etc.
  - For example, **Orange County in California (US)** has employed a **community education campaign** to create **acceptance of the recycled water.**
  - Community participation is also central to India's **Jal Jeevan Mission.**
- **Regulatory measures:** Regulatory policies should ensure the **adoption of sustainable urban water management practices** e.g., Rainwater harvesting (RWH), Grey-water recycling, and wastewater treatment.
  - For, example, in **Tamil Nadu** RWH is compulsory in all new buildings.
- **Use of Technology:** Technology could be helpful in leakages **detection, water quality monitoring,** and facilitate **targeted remediation** actions.
  - For example, **Clean Water AI** is a device that uses a deep learning neural network to detect dangerous bacteria and harmful particles in water.



## Data Bank

- **18% of world's population lives in India, but it has only 4% of world's water resources**
- **48% of India's urban water supply comes from Groundwater (CSE).**
- **By 2030 India's water demand would be double due to rapid urbanization and little infrastructure planning (UN Report).**

## Key Initiatives taken for tackling water crisis



**National Water Mission (NWM):** For conservation of water through **integrated water development and management.**



**Jal Shakti Abhiyan - Catch the Rain Campaign:** launched under NWM, by Ministry of Jal Shakti to promote water conservation and water resource management.



**Atal Bhujal Yojana:** For sustainable ground water management in seven States – **Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.**



**Mission Sahbhagita:** Launched by MoEF&CC, to encourage **participatory conservation and wise use of wetlands.**



**Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme, Pradhan Mantri Krishi Sinchai Yojana (PMKSY), etc.**

- **C2C learning in water governance:** The potential of city-to-city (C2C) learning to address water issues is largely untapped. One option that cities have is **to start networking and building learning alliances with other cities.**
  - For example, the **LOTUS-HR** program is a collaborative project between the Netherlands and India to treat sewage water in **Delhi.**
- **Leveraging the private sector:** For example, **Tata Steel** had commissioned the creation of the **Dimna Lake in Jamshedpur.**
  - Additionally, to **reduce freshwater consumption,** they conform to a **water audit and have real-time, online monitoring.**

## 5.9. UNITED NATIONS WORLD WATER DEVELOPMENT REPORT

### Why in the news?

The "UN World Water Development Report: Water for Prosperity and Peace" report was released on **World Water Day (22<sup>nd</sup> March),** at UNESCO Headquarters in Paris.

### More about the news

- The **United Nation's annual flagship report on water** is published by the **UNESCO World Water Assessment Programme (WWAP)** on behalf of the **UN-Water.**
  - **UN-Water is a 'coordination mechanism',** which comprises of United Nations members and international organizations working on water and sanitation issues.
- While the **SDG 6** aims to "ensure availability and sustainable management of water and sanitation for all" **None of the SDG 6 targets are appearing to be on track.**
  - **Around 2.2 bn people were without access to safely managed drinking water in 2022.**
- The latest report highlights how developing and maintaining water security and equitable access to **water services is essential to ensuring peace and prosperity** for all.

### Do you know?

- › **World Water Day (22<sup>nd</sup> March)** is being **celebrated since 1993,** based on the consensus achieved in **UN Conference on Environment and Development** in Rio de Janeiro (1992)



### Data Bank

- › **Nearly 50% of the world population experiences water scarcity** for at least a part of the year
- › **1% per year growth in Freshwater use**
- › **70% freshwater withdrawals is in Agriculture.**

Water and Prosperity	Water and Peace
<ul style="list-style-type: none"> <li>• <b>Water resources influence an economy in many ways,</b> and can have direct repercussions on the performance of local economies.</li> <li>• <b>Economic development depends on water infrastructure,</b> in low-income countries, around 80% of jobs are water-dependent, due to the dominance of agriculture.</li> <li>• <b>Economic Returns of WASH (Water, Sanitation and Hygiene) outweigh the costs,</b> as it can improve health, productivity, environment, and social outcomes in a society.</li> <li>• <b>Ensures gender equality in a society,</b> as water scarcity and droughts can increase the risks of violence against women and girls, and the rate of child marriages.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Peace and Social Stability of a society increases</b> with decrease in inequalities in allocation of water resources and access to water supply and sanitation.</li> <li>• <b>Water is either a tool or a target or a victim of warfare</b> in most parts of the world. <ul style="list-style-type: none"> <li>○ The <b>Office of the United Nations High Commissioner for Human Rights</b> has <b>accused Israel of using Water as a Weapon of War in Gaza.</b></li> </ul> </li> <li>• <b>Human-Animal conflicts are exacerbated by reduced water resources availability,</b> as the scarcity in water in their natural habitat drives the animals close to human habitations.</li> </ul>

### Challenges related to Water in Prosperity and Peace

- **Water-prosperity paradox:** While middle- and lower income countries require water to develop their economies, they require economic growth in order to finance water requirement.
- **Evolution of Water Pollution:** Water pollution does not disappear with the development of a country but evolves in form.
  - While **wastewater treatment issues** affects the water quality in **low income countries,** **runoff from agriculture** affects **high income countries** water resources.

- **Data Deficiency:** Lack of data and information on various parameters of water like surface and groundwater, soil moisture, and associated hydro meteorological parameters.
  - **Lack of ambient water quality data** indirectly affects the health of nearly 3 bn people in the low and lower-middle income countries.
- **Trans-boundary Water Management:** Lack of trans-boundary agreements and international basin establishment for the efficient management of trans-boundary rivers
  - **Only 32/153 countries with trans-boundary waters have an operational arrangement** to efficiently manage the water through a trans-boundary basin.
- **Water demand from emerging technologies:** Increased water consumption with new age technologies as large volumes of water are used in the liquid cooling systems of computers that run AI programmes.
  - It is estimated that **AI currently requires 500 ml of water to answer 10–50 queries.**

#### Recommendations of the Report

- **States to focus on responsible governance of water**, ensuring that all have secure and adequate access to water resources, irrespective of their locality.
- **Leverage WASH** (Water, Sanitation and Hygiene) as a **'politically neutral' service system** and act as a platform for communal collaboration and partnerships between citizens and government.
- **Decouple water from industrial productivity**, and replace the existing relationship between water and production in industries by encouraging water reuse and zero discharge.
- **Trans-boundary water management**, through equitable agreements and establishment of joint operational bodies for the river basins.
- **Equitable benefit sharing of water resources**, by moving away from mere volumetric water sharing to sharing the outcomes of the resource.




-  **Genesis:** Established in 2003, endorsed by the successor to UN Administrative Coordination Committee's (ACC) Subcommittee on Water Resources.
-  **About:** UN-Water is a **'coordination mechanism'**. It **coordinates United Nations' work on water** and sanitation.
-  **Composition:** United Nations entities (Members) and international organizations (Partners) working on water and sanitation issues.
-  **Mandate:** To ensure that **Members and Partners 'deliver as one'** in response to water-related challenges.
-  **Function:** UN-Water has **three lines of work:**
  - **Informing policy processes** and addressing emerging issues
  - Supporting **monitoring and reporting on water** and sanitation
  - **Building knowledge** and inspiring people to take action
-  **Governance:** UN-Water Senior Programme Managers provide the overall governance and strategic direction of UN-Water.

## 5.10. DAM SAFETY

### Why in the News?

**National Dam Safety Authority (NDSA)** has constituted an expert **committee** to examine the dam safety of the **Kaleshwaram Lift Irrigation Project (KLIP)**.

### More on the news

- The KLIP is the **world's largest multi-stage lift irrigation project**.
  - It is constructed on **Godavari River in Telangana**.
- The **NDSA**, a part of **4 tiered institutional structure under the Dam Safety Act, 2021** (refer to the box), established a six-member committee to probe the sinking of piers at the 'Medigadda (Laxmi) barrage' of the KLIP.
- **Led by J. Chandrasekhar Iyer, former chairman of the Central Water Commission (CWC)**, the committee will assess the **hydraulic, structural, and geotechnical aspects of the dam**.
  - **CWC is a premier Technical Organisation** in the country in the field of water resources.
  - It is as an **attached office** of the **Ministry of Jal Shakti**.

## About Dams

- Dam means **any artificial barrier and its appurtenant structure** (barrage, weir) constructed across rivers or their tributaries to **impound or divert water**.
  - **A large dam** refers to a dam with:
    - ✓ a **maximum height of more than 15 metres** from its deepest foundation to the crest or
    - ✓ a dam between **10 and 15 metres in height** from its deepest foundation that **fulfils some specified conditions**.
- **Key utility of dams:** Water for drinking, irrigation, and industrial use; flood control; hydropower generation; inland navigation; recreation, etc.
- **Dam constructions relates in displacement and cultural loss, loss wildlife and their habitats,** interstate conflict (over water safety, water sharing, etc.).
- **Major Dam Failures** across the globe include
  - **1975: Banqiao dam failure in China** resulted in collapse of 60 other downstream dams and killed more than 80,000 people.
  - **1979: Machchhu Dam failure in Morbi, Gujarat** claimed over 2,000 lives.
  - **2023: Derna dam collapse in Libya** claimed over 3,800 lives.

## Concerns associated with the safety of dams

- **Ageing dams:** Dams usually have a **defined lifespan** beyond which they may become unsafe or uneconomic.
- **Seismic vulnerability:** Large dams in India are often built in seismically active areas, making them vulnerable to earthquakes.
  - For example, the earthquake in **Bhuj** (Gujarat) in 2001, led to liquefaction in the foundation of **Chang Dam**.
- **Flood:** For example, in October 2023, **Chungthang Dam** Sikkim's highest dam was washed away during flash floods caused by a **glacial lake outburst of South Lhonak Lake**.
- **Overtopping:** Overtopping (gully erosion) failures result from the **erosive action of water** on the embankment.
- **Sedimentation:** Abrasive sediments **can damage hydroelectric turbines** and other dam components. It also **reduces the storage capacity** of dams.
  - Around 3700 dams in India will lose **26% of the total storage by 2050** due to the accumulation of sediments (United Nations).
- **Financial:** Poor financial situation typically translates into **irregular maintenance and upkeep** of other parts of the power plant.
- **Non-compliance with legislative mandates:** For example, the CAG audit report of Gandhi Sagar in Madhya Pradesh highlighted that the **SDSO did not comply with recommendations by the CWC on remedial measures**.

### About Dam Safety Act, 2021

- **Purpose:** Provides for **proper surveillance, operation and maintenance of the specified dams** to prevent dam failure.
- **Outlines responsibility of stakeholders:** Dams are **owned, operated and maintained** by **State Governments or Departments/Boards/CPSUs/Private Agencies, etc.**

### 4-Tiered Institutional Mechanism



#### National Committee on Dam Safety (NCDS)

- Constituted **by the Centre**.
  - ✓ **Headed by: Chairman of Central Water Commission** is the ex officio **Chairman of NCDS**
  - ✓ **Mandate:** To **evolve dam safety policies and recommend necessary regulations** as may be required
  - ✓ **Members:** Representatives of the **Central and State Governments** and **specialists** in the field of dam safety and allied field



#### National Dam Safety Authority (NDSA)

- Constituted **by the Centre**.
  - ✓ **Headed by:** An officer not below the rank (or equivalent to) of **Additional Secretary** to the Government of India
  - ✓ **Mandate:** Function as a **regulatory authority** to implement the policy, guidelines and standards evolved by the NCDS.



#### State Committee on Dam Safety (SCDS)

- To be **constituted by the State**.
  - ✓ **Mandate:** To discharge functions (mentioned in the Act) necessary to prevent dam failure reurted disasters



#### State Dam Safety Organisations (SDSO)

- To be constituted **by the State**.
  - ✓ **Mandate:** it is responsible to, and report to, the **technical head of the Department dealing with Dam Safety**.



### Data Bank

- **India is the 3rd largest dam-owning nation** in the world, after China and USA.
- There are around **5,700 large dams** in the country.
- **80% of the large dams** are already **over 25 years old**.
- **227 dams that are over 100 years old** are still functional.

### Initiatives for dam safety

- **National Register of Large Dams (NRLD):** It is the nationwide **register of Large Dams** compiled and maintained by CWC.
- **Dam Rehabilitation and Improvement Project (DRIP):** The **2<sup>nd</sup> and 3<sup>rd</sup> Phase of DRIP** envisages comprehensive **rehabilitation of 736 dams** across 19 States.
  - The Project will receive loans, both from the **World Bank and the Asian Infrastructure Investment Bank (AIIB)**, for disbursal among **States and three central agencies** (CWC, Damodar Valley Corporation & Bhakra Beas Management Board).
- **National Centre for Earthquake Safety of Dams:** Located at MNIT Jaipur (Rajasthan), the centre will **enhance the Structural and Earthquake Safety of Dams** in India.
- **India Water Resource Information System (WRIS):** It provides a single window solution **for all water resources** (including dams) **data** and information on the GIS framework.
- **Dam Health and Rehabilitation Monitoring Application (DHARMA):** Developed to capture important data for all dams. This is a step to move towards the application of **Artificial Intelligence (AI) in dam safety**.
- **Seismic hazard analysis information system (SHAISYS) tool:** Aims to ascertain the extent of seismic forces and their implication on the safety of the dam structures.
- **Dam Safety Review Panel:** Some states have created these panels **for comprehensive audit of their dams**.
- **Global**
  - **World Commission on Dams:** Established by the World Bank and IUCN in 1998 to **review the development effectiveness of large dams** and develop **guidelines** for the **planning, monitoring and decommissioning** of dams.
  - **International Commission on Large Dams (ICOLD):** It is a **non-governmental International** organisation founded in 1928. It provides a **forum for the exchange of knowledge** in dam engineering.
    - ✓ **Indian National Committee on Large Dams (INCOLD)** is the Indian Committee interacting with ICOLD.

### Way ahead to ensure dam safety

- **Decommissioning of ageing dams:** Generally, **decommissioning** refers to the complete removal of the dam and its associated structures or partial reduction or lowering of the dam's height.
  - Dam decommissioning is highly **site-specific and demand careful planning** to minimize public health and safety risks to downstream communities.
- **Planning, design and construction:** Design methods and criteria should conform with the **current state-of-the-art technology** related to dam safety.
  - Specific problems expected as a result of **severe weather conditions**, such as very low winter temperatures, **should be defined** in formulating design criteria and safety standards for dams.
- **Subsurface dams:** Countries like **Japan** have created multiple sub-surface dams as an alternative to surface dams. This could be **replicated in India as well**.
  - Sub-surface dams **capture ground waters** flowing fairly **near the surface of the ground**. This water can be accessed via wells upstream from the dam. Since the **water is stored within the aquifer**,
    - ✓ **submergence** of land can be **avoided**,
    - ✓ there will **not be any evaporation loss** from the reservoir,
    - ✓ **no siltation** takes place in the reservoir,
    - ✓ the potential **disaster like collapse of dams can be avoided**.

## 5.11. SUBDUCTION ZONE

### Why in the News?

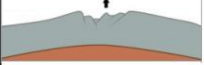
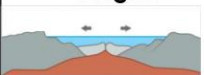
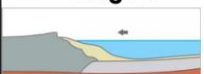



Portuguese scientists have predicted that the subduction zone beneath the Gibraltar Strait may lead to the Atlantic Ocean's closure in **20 million years**, reshaping the planet's geological landscape.

### More on the news

- Subduction zone in mature **Atlantic-type oceans** that have formed from the **breakup of a supercontinent** is believed to be difficult.

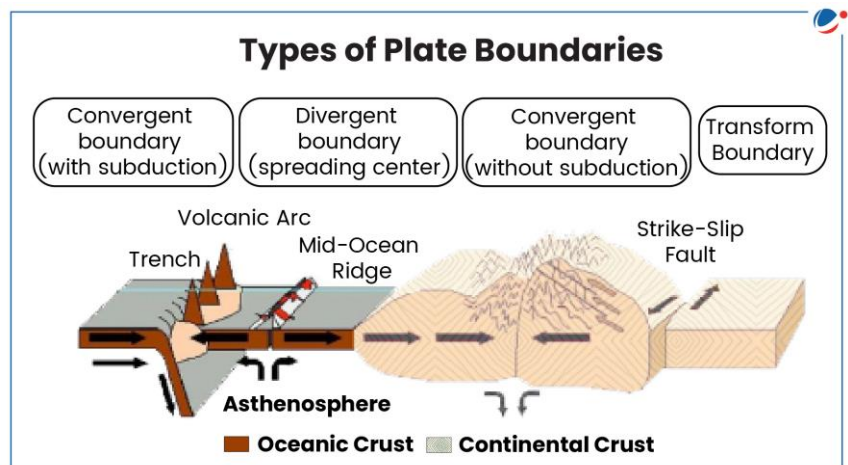


- This is because the aged **oceanic lithosphere is thick and strong, making it resistant to breaking and bending** (both are prerequisites for the start of subduction in an ocean surrounded by passive (no-subduction) margins).
- **The Atlantic Ocean already** has two subduction zones, the **Lesser Antilles and the Scotia arcs**.
  - The third zone, **Gibraltar Arc**, is another place where a subduction zone is invading the Atlantic, although its activity is debated.
    - ✓ The **Gibraltar Arc System** is located within the plate boundary zone that separates **Nubia** (NW Africa) from **Iberia** (SW Europe), marking the **western termination** of the Mediterranean belt.
    - ✓ The **Gibraltar Strait, a 10-mile gap separating Europe and Africa, marks the meeting point of the Eurasian Plate and the African Plate**.
    - ✓ The African Plate is currently subducting beneath the Eurasian Plate in this region, leading to seismic events and earthquake risks.

Wilson Cycle			
Stage, showing cross-essential view	Motion	Physiography	Example
<b>Embryonic Stage A</b> 	Uplift	Complex system of linear rift valleys on continent	East African rift valleys
<b>Juvenile Stage B</b> 	Divergence (Spreading)	Narrow seas with matching coasts	Red Sea
<b>Mature Stage C</b> 	Divergence (Spreading)	Ocean basin with continental margins	Atlantic and Arctic Oceans
<b>Declining Stage D</b> 	Convergent (Subduction)	Islands arcs and trenches around basin edge	Pacific Ocean
<b>Terminal Stage E</b> 	Convergent (Collision & uplift)	Narrow, irregular seas with young mountains	Mediterranean Sea
<b>Suturing Stage F</b> 	Convergence and uplift	Young mature mountain belts	Himalaya Mountains

### Key-Findings of the Study

- According to the **latest study**, the **Gibraltar subduction** is still active and it will propagate further into the Atlantic after a period of inactivity.
- Despite the slow **movement of the subduction zone beneath the strait**, experts believe it could grow and extend into other parts of the ocean, a phenomenon known as 'subduction invasion'.
- The study indicates that the subduction zone will progress westwards through the Gibraltar Strait, forming a **new Atlantic subduction system referred to as the 'Ring of Fire'**.
  - This process, similar to the **Pacific Ocean's Ring of Fire**, involves the **gradual pulling of the ocean floor beneath the continents**, leading to the closure of the ocean basin.
  - This is a cornerstone of the **Wilson cycle** (repetitive opening and closing of ocean basins due to the seafloor spreading and subduction respectively).





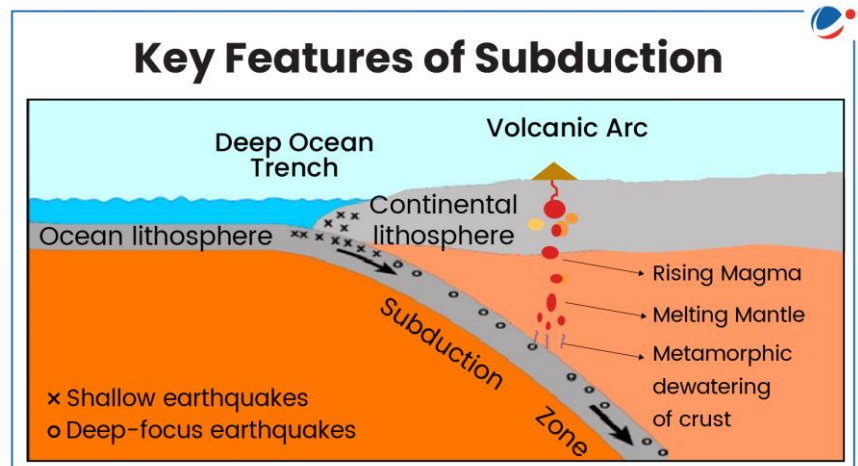
## About Subduction Zone

- According to the **Plate Tectonics theory**, the Earth is made up of number of lithospheric plates (~100 km thick) those float on the hot and ductile **asthenosphere**.
  - These plates are classified into three plate boundary types respectively, based on their movement:
    - ✓ **Convergent Boundary (towards each other)**
    - ✓ **Divergent Boundary (away from each other)**
    - ✓ **Transform Boundary (slide past each other)**
- **Subduction Zone**
  - When two plates **converge** towards each other, one plate which is heavier in density **subducts** (subducting plate) below the lighter plate (over-riding plate or stationary plate) and is **consumed or destroyed** in the mantle. The zone where subduction occurs is called as **Benioff Zone**.
  - For **e.g., Subduction zones** occur in a horseshoe shape around the edge of the **Pacific Ocean**, offshore of Washington state, Canada, Alaska, Russia, Japan and Indonesia and down to New Zealand and the southern edge of South America.
    - ✓ Called the "**Pacific Ring of Fire**," these subduction zones comprise "**the most seismically and volcanically active zone in the world**," responsible for more than **80%** of the world's biggest **earthquakes** and most of the planet's active **volcanoes**.

## Conclusion

The findings of the study shed light on the dynamic nature of Earth's tectonic processes and the long-term evolution of ocean basins.

The concept of the Atlantic Ocean shrinking and potentially ceasing to exist over a vast timeframe offers a glimpse into the geological forces shaping our planet.



## 5.12. NEWS IN SHORTS

### 5.12.1. FINANCING AGROCHEMICAL REDUCTION AND MANAGEMENT (FARM) PROGRAMME

- **Global Environment Facility (GEF)-funded Financing Agrochemical Reduction and Management (FARM) Programme** launched.
- **Key highlights of FARM**
  - **About:** One of the first such concerted efforts on a global scale, is a **\$379 million initiative** that will **realign financial incentives** to:
    - ✓ **Prevent the use** of harmful inputs in food production.
    - ✓ **Encourage the adoption** of low and non-chemical alternatives.
  - **Tenure:** 5 Years
  - **It will support:**
    - ✓ **Government regulation** to **phase out Persistent Organic Pollutants (POPs)** - containing agrochemicals and agri-plastics and adopt **better management standards**.
  - ✓ **Strengthening banking, insurance and investment criteria** to improve the availability of effective pest control, production alternatives and trade in sustainable produce.
  - **Members:** India, Ecuador, Kenya, Lao PDR, the Philippines, Uruguay and Vietnam.
  - **Implementing Agencies:** Led by **UNEP** and implemented by the ADB, UNDP, and UNIDO with execution carried out in-country by FAO.
- **Significance of FARM Initiative:**
  - **Nearly 4 billion tons of pesticides and 12 billion kg of agricultural plastics** are used every year which has a harmful impact on health and environment.
  - Highly **hazardous pesticides and mismanaged agricultural plastics** release **toxic POPs** (chemicals which do not break down in the environment and contaminate air, water, and food).

- ✓ However, currently farmers have little incentive to adopt better practices as these chemicals are generally cheaper than sustainable alternatives.



## Global Environment Facility (GEF)

Washington, D.C (US)

**Genesis:** Established during 1992 Rio Earth Summit.

**About:** GEF is a unique partnership of 18 agencies – including UN agencies, multilateral development banks, national entities and international NGOs working with member countries to address the world's most challenging environmental issues.

**Members:** More than 180 countries

Is India a member ✓

**Role:** Serves as financial mechanism for five international environmental conventions:

- Minamata Convention on Mercury,
- Stockholm Convention on POPs,
- UN Convention on Biological Diversity (UNCBD),
- UN Convention to Combat Desertification (UNCCD) and
- UN Framework Convention on Climate Change (UNFCCC)

**GEF Trustee:** World Bank

- **Need for ZCBAP:**
  - India's building related Greenhouse Gas (GHG) emissions have more than doubled from 2000 to 2017.
  - Over next 20-30 years, GHG emissions from India's steel and cement industry are estimated to increase by nearly three and six times respectively.
  - Brick kilns are another major source of carbon monoxide, sulphur dioxide, Nitrous Oxide (NOx), and other particulate emissions.
- Nagpur's ZCBAP builds upon national policy frameworks and initiatives supporting building decarbonization, which include:
  - India's Nationally Determined Contributions
  - India's Long-Term Low-Carbon Development Strategy
  - Energy Conservation Building Code, 2017
  - Green Building Rating Systems such as Indian Green Building Council (IGBC), Green Rating for Integrated Habitat Assessment (GRIHA) and
  - Eco-Niwas Samhita 2018

### 5.12.3. ETHANOL 100

- Ethanol 100 fuel was launched by the Ministry of Petroleum and Natural Gas.
- **About Ethanol 100:**
  - A cleaner and greener alternative to gasoline
  - It is a blend of 92 to 94 percent ethanol, 4 to 5 percent motor spirit to provide colour to flame and 1.5 percent Co-solvent higher saturated alcohol.
  - **Significance:**
    - ✓ It produces lower emissions of greenhouse gases, a reduction by around 63% on well to wheel basis.
    - ✓ Its high-octane rating makes it suitable for high-performance engines, ensuring enhanced efficiency and power output.
    - ✓ Significant reductions in foreign exchange savings.

### 5.12.4. PLANETARY BOUNDARIES FRAMEWORK

- The 2024 Tyler Prize for Environmental Achievement will be awarded to Johan Rockstrom for his work on the Planetary Boundaries framework.
- **About Planetary Boundaries framework**
  - First published in 2009, the Planetary Boundaries integrate nine systems that determine the functioning and the state of the planet.
  - Nine planetary boundaries include Climate Change, Biosphere Integrity, Land-System Change, Freshwater Change, Biogeochemical Flows, Novel

### 5.12.2. CITY-SPECIFIC ZERO CARBON BUILDINGS ACTION PLAN (ZCBAP)

- India's First City-Specific Zero Carbon Buildings Action Plan (ZCBAP) launched in Nagpur.
  - Zero carbon buildings are buildings that improve their lifecycle environmental performance through measures that reduce embodied, operational and end-of-life GHG emissions without compromising visual and thermal comforts.
- Nagpur's ZCBAP aims to achieve net-zero carbon emissions in all buildings by 2050, contributing to India's 'net zero by 2070' target.
  - ZCBAP in Nagpur has been developed jointly with implementing partners of Zero Carbon Building Accelerator (ZCBA) project.
  - ZCBA project was launched by World Resources Institute (WRI) in 2021 along with its global partners.
  - Nagpur is one of six global cities (other in Kenya, Costa Rica, Turkey, and Colombia) where ZCBA project is being implemented.

Entities, Stratospheric Ozone Depletion, Atmospheric Aerosol Loading, and Ocean Acidification.

- They provide **life-support to humans** and humanity is well **outside of safe operating space on first six planetary boundaries**.

#### 5.12.5. REPRESENTATIVE CONCENTRATION PATHWAYS (RCPs)

- RCPs have emerged as one of the **latest approach to determine emission scenario**.
- **About RCPs**
  - RCPs describe **four different 21<sup>st</sup> century pathways of greenhouse gas (GHG) emissions and atmospheric concentrations, air pollutant emissions, and land use**.
  - Developed using **Integrated Assessment Models (IAMs)** as input to a **wide range of climate model simulations** to project their consequences for climate system.
  - These climate projections, in turn, are **used for impacts and adaptation assessment**.

#### 5.12.6. NATURE RESTORATION LAW (NRL)

- European Parliament adopted NRL to restore 20% of EU's land and sea.
- NRL will **restore degraded ecosystems in all member states**, help achieve the EU's climate and biodiversity objectives, and enhance food security.
- It is a **key element of the EU Biodiversity Strategy**, which calls for **binding targets** to restore degraded ecosystems.
- **Objective:** Enable long-term and sustained recovery of biodiverse and resilient nature.
- **Implementation:** EU countries are expected to submit National Restoration Plans to the Commission within 2 years of the Regulation coming into force.

#### 5.12.7. PYROLYSIS

- Researchers find that **Bioenergy Trigeration (BioTRIG)** becomes technically feasible for pyrolysis.
- Pyrolysis is a process of **thermal decomposition of organic matter** in the **absence of oxygen**. ("Pyro-" means "fire" and "lysis-" means "loosening" in Greek, roughly translating to loosening with fire.)
- Pyrolysis can convert carbonaceous materials like waste biomass (crop residues, food waste and animal manure) into **biochar and bio-oil and generate syngas**.
- These pyrolysis products (**bioenergy trigeration**) can help overcome **three major challenges of rural communities** in India -

- Biochar can improve soil quality.
- Bio-oil can be used for electricity generation.
- Syngas can be used as a clean efficient cooking fuel.

#### 5.12.8. EARTH HOUR

- Earth Hour" is set to be observed on **March 23 from 8.30pm to 9.30pm (IST)**.
- **Earth Hour**
  - Earth Hour was famously started as a **lights-out event in Sydney, Australia in 2007**.
  - It is a global event observed **annually on the last Saturday of March**.
  - It is organized by the **World Wildlife Fund (WWF)**.
  - It is symbolic to **raise awareness about climate change** and promote energy conservation.
  - Beyond the hour, Earth Hour **inspires people to take further action for a sustainable future**.

#### 5.12.9. ECOCIDE

- **Belgium** has become the **first country in Europe to recognize 'ecocide' as a national as well as an international crime**.
- **Ecocide:**
  - It means **unlawful or wanton acts** committed with knowledge that there is a substantial likelihood of severe and either **widespread or long-term damage to the environment** being caused by those acts. **Ex:** Deforestation, Ocean damage etc.
  - Term was invented by **American Biologist Arthur Galston in 1970**.
- **India is yet to make it an offense**.

#### 5.12.10. ORAN LAND

- Communities, particularly those in western Rajasthan, are concerned about the state's proposal to classify **orans (sacred groves) as deemed forests**.
  - As per the directives of Supreme Court, **Oran, Devvans and Rundhs** as forest lands will be given the status of deemed forest.
- A sacred grove comprises patches of **natural vegetation ranging from a few trees to several acres** that are dedicated to local deities or tree spirits.
- **About Deemed Forest**
  - The concept of deemed forests has **not been clearly defined** in any forest law.
  - In the **Godavarman Thirumalpad (1996) case**, SC brought in the concept of 'deemed forests,'.
- It means an area that wasn't officially classified as forest by the government but looked like it.

### 5.12.11. LIVING ANIMAL SPECIES (REPORTING AND REGISTRATION) RULES, 2024

- Union **Ministry of Environment, Forest and Climate Change** notified Living Animal Species (Reporting and Registration) Rules, 2024.
- Rules were notified under **Section 63 of Wild Life (Protection) Act (WPA), 1972** for the purpose of **Section 49M of the WPA, 1972**.
  - **Section 49 M** provides for **registration of possession, transfer, and birth and reporting of death of living scheduled animal species** which are listed in **Appendices of CITES or Schedule IV of WPA, 1972**.
  - Section 49M was added through **Wild Life (Protection) Amendment Act, 2022**.
- **Key highlights of Rules**
  - **Application for registration of possession:** Mandatory electronic registration for any possession of any animal species within 6 months.
  - **Reporting and registration of birth:** Report birth of an offspring of animal species and apply for registration within a period of 7 days.
  - **Reporting and registration of transfer** within 15 days.
  - **Maintenance of stock for people involved in captive breeding** through regular health check-up of animals, inform any escape of the animal species, etc.
- **Wild Life (Protection) Amendment Act, 2022 and CITES**
  - 2022 Amendment sought to implement **CITES**.
    - ✓ **Schedule IV** of the WPA includes **specimen of Flora and Fauna listed under CITES**.
  - It also provides for **management authority** to grants export or import permits for trade of species.

### 5.12.12. GOLDEN LANGUR

- According to latest survey, **there are around 7,396 Golden langurs** in India.
- **About Golden langur**
  - **Protection Status:**
    - ✓ **IUCN:** Endangered
    - ✓ **CITES:** Appendix I
    - ✓ **Wildlife Protection Act:** Schedule-I
  - **Characteristics:**
    - ✓ Belong to a large **group of Old World monkeys** called the **colobines** (leaf-eating primates having a ruminant-like multi-chambered stomach).

- ✓ **Coat colour varies seasonally** becoming cream colored in summer and dark golden in winter.
- ✓ They are **diurnal** and **arboreal** in nature and live in troops (3-15).
- **Habitat:** Endemic to subtropical and temperate broadleaf forests in **Assam (Brahmaputra River Valley) and Bhutan**.



### 5.12.13. MELANOCHLAMYS DROUPADI (M. DROUPADI)

- Named after President of India, by Zoological Survey of India *M. droupadi* is a new **marine species of head-shield sea slug** discovered from **West Bengal and Odisha coast**.
- It shares habitat with **Melanochlamys bengalensis** which discovered in 2022, but differs morphologically.
  - *M. droupadi* is **smaller and has mottled brown to black colouration** with a **ruby red spot on the posterior shield**.
- The **sea slugs are rapid hunters**.
  - They **feed upon mobile prey** such as other shelled and unshelled sea slugs, roundworms, marine worms and small fishes.

### 5.12.14. STAR DUNES

- Scientists unveiled the **first in-depth study of Earth's magnificent desert star dunes** revealing the internal structure.
  - The study focused on a star dune in Erg Chebbi (eastern **Morocco**) called **Lala Lallia**, meaning "**highest sacred point**".
- **About Star Dunes**
  - Formed in **areas with complex wind regimes**, which means winds blowing from different directions.
  - They **make up just under 10% of the dunes** in Earth's deserts and are the tallest ones.
  - **Earth's largest star dunes** are found in the **Badain Jaran desert (China)**.
  - They also have been **spotted on Mars and Saturn's moon Titan**.

### 5.12.15. RED MUD

- **Researchers from IIT Madras** developed a method for treating **bauxite residue** (known as Red Mud) using phosphoric acid to **extract valuable materials from it**.
  - Some such materials like **ceramic** have **dielectric and optical properties**, with potential applications in electronic components and energy storage.
- Red Mud is a **byproduct of aluminium production**.
  - It contains **heavy metals** such as arsenic, lead, cadmium, chromium, vanadium and mercury.
  - Its high alkalinity makes it **extremely corrosive and damaging to soil and life forms**.

### 5.12.16. SEAMOUNTS

- Researchers discovered **four gigantic seamounts** in the deep sea off the **coast of Peru and Chile**.
- **About Seamounts**
  - A seamount is an **underwater mountain** with steep sides rising from the seafloor.
  - Most seamounts are **remnants of extinct volcanoes** and are **typically cone shaped**.
    - ✓ **Seamounts** with large **flat summits** are called **guyots**.
  - Seamounts are **found in every world ocean basin**.
  - Seamounts function as **oases of life or biological hotspots** with higher species diversity and biomass on and around it.
  - World's highest seamount is **Hawaii's dormant volcano Mauna Kea**.

### 5.12.17. ANTHROPOCENE EPOCH (HUMAN EPOCH)

- International Commission on Stratigraphy rejected **proposal to declare** the start of the Anthropocene Epoch in geologic time.
- **Anthropocene Epoch** is an **unofficial unit of geologic time**.
  - It describes the most recent period in Earth's history when **human activity started to have a significant impact** on Earth's climate and ecosystems, particularly since **industrialization**.
- **Current epoch** is called the **Holocene** which began 11,700 years ago after the last major ice age.
  - Currently, on geological time scale, we are living in

the **Phanerozoic Eon, Cenozoic Era, Quaternary Period, Holocene Epoch, and the Meghalayan Age**.

### 5.12.18. SHINKUN LA PASS

- **Border Road Organisation** has connected **strategically important road** from **Manali (Himachal Pradesh)** to **Leh (Ladakh)** through **Darcha and Nimmu** on Kargil–Leh Highway.
- Road is not only **shorter**, but crosses only **one pass—Shinkun La (approx. 16,500 feet)**.
  - Shinku La Pass **connects Lahaul and Spiti** in Himachal Pradesh with **Zaskar Valley** in Kargil, Ladakh.
- This will result in road having **all weather connectivity to Ladakh region**.

### 5.12.19. GREAT LAKES

- North America's Great Lakes have recorded **significantly below-average ice cover** for the second consecutive year in a row.
- **Great Lakes**
  - Great Lakes — **Superior, Michigan, Huron, Erie and Ontario** — form the **largest fresh surface water system** on Earth.
  - **Except for Lake Michigan**, the lakes provide a natural border between **Canada and United States**.
  - Water in the Great Lakes flows from **Lake Superior**, via Lake Huron, Lake Michigan, Lake Erie, into **Lake Ontario**, and into the **Atlantic Ocean** through the **Saint Lawrence River**.



**SMART QUIZ**

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








# Smart and Effective Notes Making for UPSC CSE Principles and Strategies



## Why Notes Making?

Note-making for the UPSC exam is a strategic tool that significantly enhances an aspirant's ability to understand, retain, and revise the vast curriculum effectively. This personalized study aid helps in breaking down complex topics into digestible pieces, facilitating easier recollection and efficient last-minute revisions.







## Principles of Notes Making

-  **Personalize Notes:** Understand your learning style for effective customization which should be prepared in an integrated manner for both Prelims and Mains examination.
-  **Format Choice:** Opt for digital, handwritten, or a hybrid approach based on learning ease.
-  **Summarization and Organization:** Condense passages, use bullet points for clear organization.
-  **Current Affairs Integration:** Enhance note relevance by integrating current affairs with static topics.
-  **Language Precision:** Emphasize keywords, concepts, and examples; avoid complete sentences.



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Resources.






## Smart Strategies for Effective Notes Making

-  **Reliable Sources**  
Choose reputable sources that meet the demands of the examination.
-  **Summarize and Organize**  
Highlight or underline important points while reading, then summarize these in your own words.
-  **Link to the UPSC Syllabus**  
To ensure easy referencing of subject, topic, and subtopic for efficient exam preparation.
-  **Integrate Visual Aids**  
Use diagrams, flowcharts, and mind maps to visualize complex relationships between topics.
-  **Current Affairs**  
Create a dedicated section and link it to corresponding static topics for a comprehensive understanding.
-  **Regular Revision**  
Frequently revisit your notes to reinforce your memory and improve your retention.

 **Use bullet points, headings, and subheadings to structure your notes clearly.**

## VisionIAS Smart Quality Content

Designed and developed for smooth understanding, learning, retention, and reproduction of content in the UPSC Examination. Further, it also facilitates smart and efficient note-making.

-  **Simplified Complex Topics:** Makes tough subjects easier and more digestible for better understanding.
-  **Up-to-date Information:** Offers latest, relevant study materials aligned with current exam requirements.
-  **Analytical Skills Development:** Boosts essential critical and analytical thinking through quizzes.
-  **Resource Optimization:** Uses infographics & smart presentations for more efficient time and resource utilization.
-  **Enriched Presentation:** Utilizes thematic colors and tables for fast information identification and recall.



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Content in your learning.

# 6. SOCIAL ISSUES

## 6.1. LIVE-IN RELATIONSHIPS

### Why in the news?

The recently introduced **Uttarakhand Uniform Civil Code (UCC) Bill** mandates **compulsory registration for all live-in relationships in the state**, irrespective of residency **with registrar**.

### More on the News

- Uttarakhand Uniform Civil Code (UCC) **requires compulsory registration with the state** while starting or ending a live-in relationship for heterosexual couples.
  - This record will be kept in a police station.
- There is also **provision for providing for maintenance to the woman when “deserted” by her partner**.
- It also prescribes **jail term of up to six months for not producing a “certificate” of the relationship**.
- It imposes **stringent terms on a consensual relationship between adults and raises constitutional concerns of privacy and personal liberty**.

### Live in Relationship in India

- In India, **live-in relationships are not explicitly governed by law or custom**.
- However, through judicial decisions, the **Supreme Court has expanded the recognition of live-in partnerships** and established guidelines for handling such relationships.
- **Supreme Court Judgements related to Live-In Relationships:**
  - **Badri Prasad v. Dy. Director of Consolidation (1978):** The Supreme Court observed **live-in relationships as legal if they meet the requirements of marriage, such as legal age, consent, and mental capacity**.
  - **Lalita Toppo vs The State Of Jharkhand (2018):** SC ruled under the provisions of the Domestic Violence Act, 2005 (PWDVA 2005) the live-in-partner would be entitled to more relief than what is contemplated under the Code of Criminal Procedure, 1973.
  - **Bharatha Matha vs R Vijay Renganathan & Ors (2010):** SC held that the children born through live-in relations will be considered legitimate children and will be allowed share in the ancestral undivided property.
  - **Indra Sarma v. VKV Sarma (2013):** The Court affirmed that entering into a **mutual live-in relationship is not illegal if both partners are unmarried**, and it does not constitute an offense.

### How is Live-in Relationship Affecting Marriage as Institution?

Social change, global influence, urbanization, and cosmopolitan norms have **increased acceptance of pre-marital cohabitation and live-in arrangements**, especially among younger generations.

- **Individual Autonomy:** The concept of live-in relationships is rooted in the desire for **personal autonomy and freedom of choice, especially in the face of historically prevalent arranged marriages and societal expectations**.
- **Evolving Views on Commitment:** The **concept of commitment has evolved to emphasize emotional connection, communication, and compatibility**, reducing the sanctity of marriage as the ultimate symbol of commitment.
- **Testing Compatibility:** Live-in relationships offer a **way to test domestic compatibility before marriage**, addressing concerns about restrictive or cumbersome marriage procedures.
- **Legal and Social Dynamics:** Despite legal recognition, societal acceptance of live-in relationships challenges traditional family structures and raises debates on legal reforms.
- **Family Impact:** Live-in relationships challenge traditional family structures, leading to generational conflicts and societal tensions, especially in conservative communities.
- **Economic Considerations:** Concerns about financial stability, asset division in case of divorce, and prenuptial agreements is nudging toward live in relationships.

### Conclusion

To address the ambiguity that often leads to conflicting opinions and judgments, it is imperative to enact separate legislation specifically addressing live-in relationships. Ambiguous clauses in current legislation must be revised to clearly define the status and rights of children born within such relationships.


## 6.2. DECLINING TOTAL FERTILITY RATE IN INDIA

### Why in the news?

Recently, the Global Burden of Disease Study 2021 published in Lancet highlighted that **India's Total Fertility Rate (TFR) is projected to fall to 1.29 and 1.04 in 2050 and 2100 respectively.**

### What is the Total Fertility Rate?

- Total Fertility Rate may be defined as **average number of children that would be born to a woman** if she experiences the current fertility pattern throughout her reproductive span (15-49 years).
  - **A TFR of 2.1 i.e., two children per women is considered the replacement rate for a population**, resulting in relative stability in terms of total population numbers.



## Data Bank

- **1.83 and 1.59 Global TFR** in 2050 and 2100 respectively.
- **1.91 India's TFR in 2021** is far **lower than replacement rate of 2.1.**
- **1.3 crore live-births** projected in **2050 in India**

### Reasons for declining Total Fertility Rate

- **Educational Opportunities: Increased education of women** leads to improved contraception use, child health, and workforce participation, consequently lowering fertility rates.
- **Family Planning (FP):** Government-led **FP initiatives enable couples to decide on child number** and spacing, resulting in declining TFR.
- **Delayed Marriage:** The average age of first pregnancy has **dropped from the mid-20 to mid to late 30's**, due to delays in the age of marriage.
- **Infertility:** The TFR rate faces a sharp decline due to **rising concern over lifestyle factors like obesity, stress, smoking, and increased pollution leading to infertility among couples.**
  - The general fertility rate in India has fallen 20 per cent in 10 years, with nearly 30 million people affected by infertility.
- **Child mortality:** With improvements in child health services, and immunisation programs, child mortality rates have declined, further leading to a decline in TFR.

### Impact of declining Total Fertility Rate

#### Negative impact

- **Increase in dependency ratio:** Sustained low fertility will **produce a contracting population with fewer young people relative to older people** as noted in China, Japan etc., leading to an increase in **the dependency ratio.**
- **Fiscal challenges:** A decreased working-age population, along with the increase in spending on social security, pensions, geriatric care etc. would put pressure on the fiscal resources of the country.
- **Labour Force:** Lower TFR can adversely **affect economic productivity and growth** due to a shortage of skilled workers, further leading to **labour market imbalances and potential economic stagnation.**
- **Migration:** Declining fertility rates can impact migration patterns. Countries with ageing populations may attract immigrants to address workforce shortages, fostering diversity and immigration policy tensions.
- **Shifting Family Dynamics:** Decreasing family size can **disrupt traditional support systems** like grandparental childcare, potentially increasing elder loneliness, psychological issues etc. due to the rise in nuclear families.

#### Positive impact

- **Resource mobilisation:** A falling fertility rate will lead to **lower pressure on land, water and other resources** and would contribute to achieving environmental goals.
- **Educational Efficiency:** Declining TFR could **improve educational outcomes without additional resources being spent per capita** by the state, as the number of enrolling children will decrease.



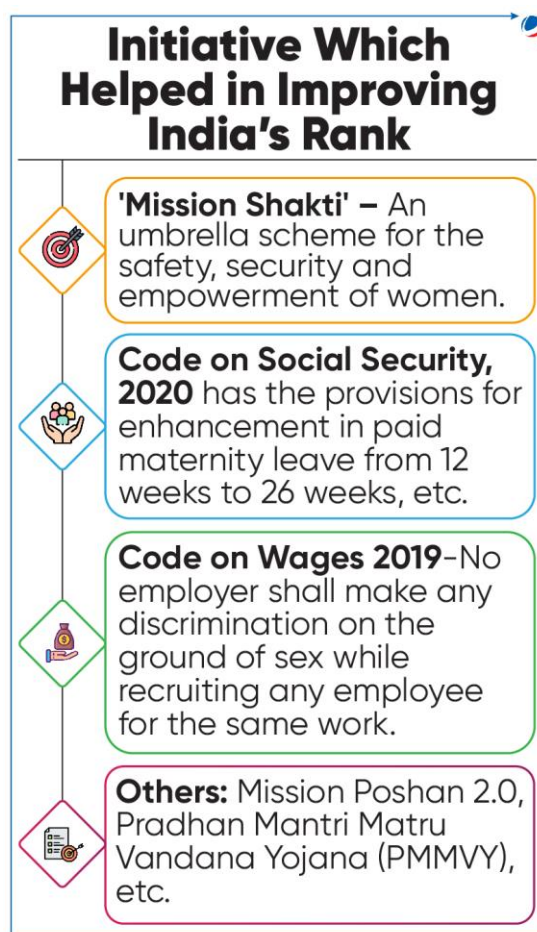
## Way ahead

- **Enhancing Support:** Governments and businesses should focus on childcare support, provide tax subsidies, improve parental leave entitlements etc. to make child-bearing affordable for the working parents.
- **Gender equity:** For women to be able to manage careers with motherhood, it would be crucial for men to take greater responsibility for household and care work.
- **Economic Policies:** To combat potential threats to public health, economic policies **stimulating growth and job creation, alongside social security and pension reforms**, will be essential in mitigating the impacts of declining fertility rates.
- **Skill enhancement:** To make sure that an ageing population does not become an economic disaster, the working-age population, regardless of its size, and age, should be equipped with the necessary skills to boost their productivity.

## 6.3. NEWS IN SHORTS

### 6.3.1. GENDER INEQUALITY INDEX (GII) 2022 RELEASED

- GII 2022 released by **United Nations Development Programme (UNDP)**.
- Index is Released by UNDP in their report **Human Development Report 2023/2024; Breaking the gridlock Reimagining cooperation in a polarized world**.
- **Key Highlights:**
  - Topped by **Denmark**, followed by **Norway** and **Switzerland**.
  - India has been ranked at **108 out of 193** countries with a score of 0.437.
    - ✓ In 2021 India stood at rank 122 out of 191 countries.
  - India's neighbouring nations such as Bhutan (80); Sri Lanka (90); and Maldives (76) have performed better.
- **GII** is a composite measure, reflecting inequality in achievements between women and men in **three dimensions:**
  - **Reproductive Health:** Use indicators namely the **maternal mortality ratio** and the **adolescent fertility rate**.
    - ✓ Also uses **Female reproductive health Index**.
  - **Empowerment:** Measured by the share of **parliamentary seats held** and at least **secondary attainment level** by both gender.
    - ✓ Also uses Female and male empowerment Index.
  - **Labour market:** Measured by **labour force participation rates** by both gender.
    - ✓ Also uses Female and male labour market Index.
- GII score varies between **0** (when women and men fare equally) and **1** (when men or women fare poorly compared to the other in all dimensions).



### 6.3.2. UN SYSTEM-WIDE GENDER EQUALITY ACCELERATION PLAN

- On International Women's Day (IWD), the UN Secretary-General launched the new UN System-Wide Gender Equality Acceleration Plan **to boost the empowerment of women and girls**.
  - In 2012, the United Nations Chief Executives Board approved a landmark System-wide Action Plan for Gender Equality and the Empowerment of Women (UN-SWAP) **to be applied throughout the UN system**.

- **UN-SWAP 2.0 (released in 2018)** raised the bar for accountability by strengthening existing indicators and anchoring the framework **within the 2030 Agenda for Sustainable Development**.
- UN chief also highlighted that targeted programmes and quotas are required to tackle “baked-in bias”, and dismantle obstacles to equality.
  - **Baked-in Bias** implies that bias against a particular gender, caste, or community is continuing and is deep-rooted, and embedded in society.
- **Three priority action areas suggested by the UN-Secretary-General**
  - **Increasing affordable, long-term finance** for sustainable development.
  - Governments to **prioritise equality for women and girls**.
  - **Increase the number of women in leadership positions**, which can help to drive investment in policies and programmes that meet the needs of women and girls.

### 6.3.3. THE HOLISTIC PROGRESS CARD (HPC)

- **PARAKH (Performance Assessment, Review and Analysis of Knowledge for Holistic Development)** a standard-setting body under the **National Council of Educational Research and Training (NCERT)**, has devised the HPC for the **foundational stage (Classes 1 and 2), preparatory stage (Classes 3 to 5) and middle stage (Classes 6 to 8)**.
- **HPC is a 360-degree, multidimensional report of progress**, detailing the uniqueness of each learner in the **cognitive, affective, socio-emotional, and psychomotor domains**.
  - It is in line with the recommendations of the **National Education Policy, 2020**.
- **Objective of HPC**
  - It helps to **map the status of each child's learning for foundation literacy and numeracy skills**.
  - It focuses on the **uniqueness of each learner**.
  - To document a **child's own expression of self as well as the teacher's assessment** of the child based on the competencies.
  - It will form an **important link between home and school and make parents an integral part** of a child's learning process.
- **Features of HPC**
  - **Asses through project-based and inquiry-based learning**, quizzes, role plays, group work, portfolios, etc
  - It includes **self-assessment, peer assessment and parent's feedback**.

- Builds on self-awareness and self-esteem by **communicating the strengths and areas of improvement**.
- **Based on three Developmental Goals**
  - ✓ Health and Wellbeing
  - ✓ Effective Communicators
  - ✓ Involved Learners

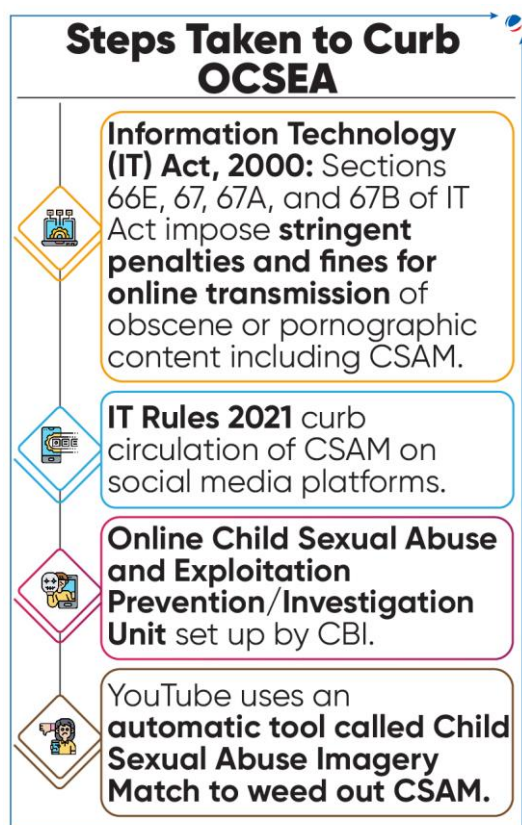
### 6.3.4. SWAYAM PLUS PLATFORM

- **Ministry of Education (MoE)** launched the **SWAYAM Plus Platform**.
- **SWAYAM is a Massive Open Online Courses (MOOCs) platform** providing educational opportunities for learners.
- **About the SWAYAM Plus platform**
  - In alignment with **National Education Policy 2020**, it will now include **courses supporting industry needs** that enhance learners' employability in collaboration with industry leaders.
  - It features innovative elements like multilingual content, AI-enabled guidance, credit recognition, and pathways to employment
  - **IIT Madras has been appointed as nodal agency** for implementing it.
  - **Funded by MoE, Department of Higher Education**.

### 6.3.5. ONLINE CHILD SEXUAL EXPLOITATION AND ABUSE (OCSEA)

- **United Nations Children's Fund (UNICEF)** released a **report** titled “Role of Social Media in facilitating Online Child Sexual Exploitation and Abuse”.
- **Online Child Sexual Exploitation and Abuse (OCSEA)** involve the **use of information and communication technology as a means to sexually abuse and/or sexually exploit children**.
  - As per **National Human Rights Commission**, **Child Sexual Abuse Material (CSAM)** has **increased by 250 to 300 percent on social media in India**.
- **How social media facilitates OCSEA?**
  - **Online predators:** Social media platform could be used by predators to entice and coerce children into posting graphic content.
  - **Access to Inappropriate Content:** Children may purposefully or unintentionally gain access to sexually explicit material, easily accessible on social networking sites.
- **Impact of Child Sexual Abuse Material on Child**
  - **Impair brain development, and cause psychological stress** like Anxiety, Post-traumatic stress disorder, etc.
  - Potential to normalize or **desensitize children to inappropriate behavior**.

- **Leads to communicable and non-communicable diseases** like sexually transmitted infections including HIV, cardiovascular disease, and unintended pregnancies etc.
- **Recommendations from report**
  - Make it **mandatory for online platforms to have clear, accessible, child-friendly mechanisms** for children to report concerns.
  - Social media platforms and service providers should **publish periodic transparency reports**.



To know more about Child Sexual Abuse Material (CSAM), kindly refer to Article 6.8 Child Sexual Abuse Material (CSAM) in the October 2023 edition of VisionIAS Monthly Current Affairs Magazine.

### 6.3.6. WORLD POVERTY CLOCK (WPC)

- Latest data on **World Poverty Clock** showed that India has managed to bring down **'extreme poverty'** below **3% of its population**.



- **About WPC**
  - Developed by **World Data Lab**, a global data enterprise.
  - Monitors **global progress against Ending Extreme Poverty**.
  - Funded by **International Fund for Agricultural Development (IFAD)** and **Federal Ministry for Economic Cooperation and Development of Germany**.

### 6.3.7. SWACHHATA GREEN LEAF RATING (SGLR) INITIATIVE

- The **Department of Drinking Water and Sanitation (Jal Shakti Ministry)**, in collaboration with the **Ministry of Tourism**, launched SGLR for the **tourism industry**.
- **Bison Resorts, Madhya Pradesh** obtained the first Five Swachhata Green Leaf Rating Certificate of Recognition.
- **About SGLR**
  - It is a **type of rating system, which evaluates various tourist facilities** based on their adherence to specific hygiene and sanitation standards.
  - **Aim:** Revolutionize **sanitation practices** within the country's flourishing **tourism industry**.
  - It aligns with the **Travel for LiFE (TFL) program** under **Mission LiFE**.

### 6.3.8. HOMOSEP ATOM

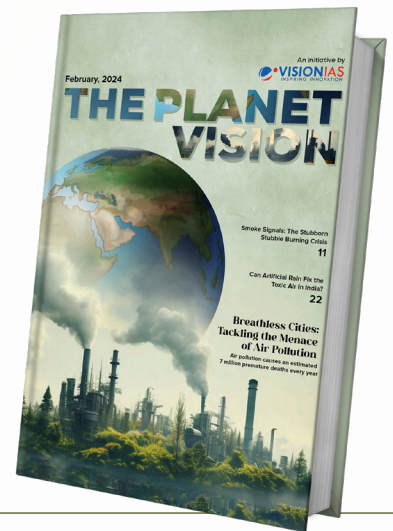
- **India's first septic tank/manhole cleaning robot** known as Homosep atom developed by the startup Solinas reached 16 cities.
  - Solinas was incubated in the **Department of Science and Technology (DST)-Technology Business Incubator (TBI)** of IIT Madras.
- **About Homosep Atom**
  - Robotic solution **integrated with Artificial Intelligence (AI)** to inspect, clean, and manage confined space for sanitation purposes.
  - **Features:** Extensive blade cleanings, solid waste desilting, suction, and storage at one device.
  - Offers end-to-end **solutions to eliminate manual scavenging**.

 <p><b>SMART QUIZ</b></p>	<p>You can scan this QR code to practice the Smart Quiz of Social Issues &amp; Social Schemes at our open test online platform for testing your understanding and recalling of the concepts.</p>	
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# THE PLANET VISION

In a world facing unprecedented environmental challenges, staying informed and empowered is more crucial than ever. VisionIAS brings you 'The Planet Vision', a simplified, informative, and interactive magazine to delve into the complexities of the environment.

With the belief, that individual efforts and awareness are the key to a sustainable future, the magazine seeks to inspire and educate people to develop a deeper understanding and appreciation for the environment, nature & planet.



## Objectives of 'The Planet Vision'



**Sensitise the young generation:** Highlighting pressing environmental issues and their multifaceted impacts.



**Inspire Action and Promote Sustainable Lifestyle:** Inspiring stories and case studies to motivate readers to make environmentally conscious choices.



**Bridge Environmental Science and Public Understanding:** Presenting complex scientific concepts in a simple and interactive manner.



**Showcase Solutions:** Spotlight innovative technologies, projects, and initiatives that offer solutions to environmental challenges.



**Highlight Local Efforts:** Showcase local conservation efforts, community initiatives, and grassroots projects that make a positive impact on the environment.

## Who is the magazine for?

The Magazine is designed for students, eco-conscious individuals, educators, environmentalists, and anyone who cares about the health of our planet.

## Key elements of the 'The Planet Vision'



**Cover Stories:** Thought-provoking articles about a critical ongoing environmental issue, along with the mitigation strategies adopted at the national and international levels.



**Briefing and Developments:** Stay informed about the latest environmental news, trends, and solutions.



**Protect and Preserve:** Inspirational stories of local conservation efforts.



**Environment and You:** Illustrating ways to make environmentally conscious choices in everyday life.



**Green Tech:** New and emerging technologies in the field of environment.



**Interactive elements:**

✓ **Snapshot:** Telling a story through capturing images.

✓ **Quizzes and crosswords:** To test your understanding and knowledge as a reader.

“

Look deep into nature, and then you will understand everything better. ”

—Albert Einstein



Scan the QR code, to download and read the Magazine:

# 7. SCIENCE AND TECHNOLOGY

## 7.1. INDIA AI MISSION

### Why in the news?

The Union cabinet has approved over Rs 10,300 crore for **IndiaAI Mission** to strengthen Artificial Intelligence (AI) Innovation Ecosystem.

### About IndiaAI Mission

- **Aim:**
  - ✓ Establish an ecosystem for AI innovation through **public-private partnerships**.
  - ✓ Deploying over **10,000 Graphics processing units (GPUs)** for advanced AI computing infrastructure.
  - ✓ Driving **responsible, inclusive growth of India's AI ecosystem** through democratization, data quality improvement, and indigenous AI capabilities development.
- **Ministry:** An umbrella programme by the Ministry of Electronics and Information Technology (MeitY).
- **Funding:** To be made available over **5 years** through a public-private partnership model.
- **Implementing agency:** 'IndiaAI' Independent Business Division under Digital India Corporation.

Pillars of IndiaAI and Related Schemes		
<b>AI in Governance</b> <ul style="list-style-type: none"> <li>• <b>BHASHINI - [BHASHa Interface for India]</b> an AI- based language translation tool for Indian languages.</li> <li>• <b>Digital India</b></li> <li>• <b>India Stack and AI</b></li> </ul>	<b>AI Compute &amp; Systems</b> <ul style="list-style-type: none"> <li>• <b>AIRAWAT:</b> India's AI supercomputer installed at C-DAC, Pune.</li> <li>• <b>National Supercomputing Mission</b></li> <li>• <b>MeitY Quantum Computing Applications Lab</b></li> </ul>	<b>Data for AI</b> <ul style="list-style-type: none"> <li>• <b>Data Management Office:</b> Helps in standardisation of data management.</li> <li>• <b>India Datasets Program and India Data Platform:</b> Provides access to non-personal datasets for start-ups and researchers.</li> </ul>
<b>AI, intellectual property (IP) &amp; Innovation</b> <ul style="list-style-type: none"> <li>• <b>Centre of Excellence for Artificial Intelligence</b></li> <li>• <b>MeitY Start-up Hub</b></li> <li>• Proposed <b>National Centre on AI (NCAI)</b></li> </ul>	<b>Skilling in AI</b> <ul style="list-style-type: none"> <li>• <b>Future Skills Prime:</b> Joint initiative by Nasscom &amp; MeitY for AI certification programs.</li> <li>• <b>Responsible AI for Youth:</b> Program for government making school students AI ready.</li> </ul>	<b>AI Ethics &amp; Governance</b> <ul style="list-style-type: none"> <li>• <b>RAISE:</b> Responsible AI for Social Empowerment</li> </ul>

### About Artificial intelligence (AI)

- It refers to **computer systems capable of performing complex tasks** that historically only a human could do, such as reasoning, making decisions, or solving problems.
- It encompasses a wide variety of technologies, including-
  - **Machine learning (ML):** Uses algorithms trained on data sets to create models that enable machines to perform tasks that would otherwise only be possible for humans.
    - ✓ **Generative AI (GAI)**, evolved from ML, as a class of algorithms capable of generating new data. It includes **Large Language Models (LLMs)** like **BharatGPT's 'Hanuman'** or **ChatGPT** and Generative Adversarial Network (GAN) used for generating deepfakes.
  - **Deep learning:** Trains computers to process information in a way that mimics human neural processes.
  - **Natural language processing (NLP):** Allows computers to understand human language. E.g., **BHASHINI**.

#### Generative Pretrained Transformer (GPT) vs LLM

- **A GPT is a type of LLM** that uses deep learning to generate human-like text.
- They are called-
  - **"generative"** because they can **generate new text** based on the input they receive,
  - **"pretrained"** because they are **trained on a large corpus of text data** before being fine-tuned for specific tasks, and
  - **"transformers"** because they **use a transformer based neural network** architecture to process input text and generate output text.

### Some New and Emerging applications of AI in India

- **Safety in Infrastructural Projects:** AI can be used for infrastructure monitoring and inspection.
  - E.g., **Bangalore Metro is using AI-powered cameras** to monitor track conditions, detect abnormalities, and raise alerts.
- **Personalised Assistants:** AI can simplify personal and professional tasks.
  - E.g., **Ola's Krutrim** is a personal generative artificial intelligence assistant that will comprehend around 22 Indian languages and generate text in 10 languages.
- **Improved Governance:** AI can help enhance the efficiency of government operations and public service delivery and make government initiatives more inclusive and accessible. Examples-
  - **Digital Sansad app** is an AI-powered platform to transcribe house proceedings at the new Parliament.
  - **Kisan-eMitra is an AI Chatbot for the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) Scheme** that provides farmers prompt, clear, and accurate responses to their queries.

### Challenges in AI Adoption in India

- **Lack of trained professionals:** According to NASSCOM, India houses a talent base of 416K AI professionals as opposed to the current demand of approximately 629K, a figure expected to surge to 1 million by 2026.
- **Impact on Jobs:** World Economic Forum has estimated that **artificial intelligence will replace some 85 million jobs by 2025.**
- **Infrastructural challenges- Physical and Digital:** Lack of AI-based infrastructure, such as cloud computing and **limited availability of quality and open-source data.**
- **Ethical and Integrity Concerns:**
  - AI-based decisions are susceptible to **inaccuracies, discriminatory outcomes, bias.**
  - Unequal access to AI for marginalized populations **can worsen the digital divide.**
- **Regulatory challenges:**
  - **Lack of universal definition** among regulators due to its global nature.
    - ✓ Also, keeping up with the evolving nature of AI can be challenging.
  - **Lack of transparency in AI systems** can lead to users being unaware they are interacting with automated systems, impacting trust.
  - **Liability issues:** The **black box nature and self-learning ability** of AI make it **difficult to justify decisions and assign liability for errors.**
    - ✓ The inability of seeing how deep learning systems make their decisions is known as the '**black box problem**'.
- **Growing Instances of misuse:** AI is being misused for **Malicious Intent** such as creation of **Deep fakes to spread misinformation.**

### Other Initiatives related to AI in India

- **IndiaAI portal:** It serves as a **one-stop digital platform for AI-related** developments in India.
  - It is a joint venture by the Ministry of Electronics and Information Technology (MeitY), National e-Governance Division (NeGD) and National Association of Software and Service Companies (NASSCOM).
- **Global Partnership on Artificial Intelligence (GPAI):** It is a multi-stakeholder initiative which aims to bridge the gap between theory and practice on AI by supporting cutting-edge research and applied activities on AI-related priorities.
  - **Secretariat:** Hosted at the **Organisation for Economic Cooperation and Development (OECD)** in France.
  - **Membership:** 29 international partners, including India.

### Way forward

- **Incorporate AI into curriculum,** boost teaching and learning and encourage AI ventures.
- **Firms can undertake upskilling of employees.**
  - As per a LinkedIn's report, **nearly 94% of companies in India are upskilling employees** due to advancing AI.
- **Incentivize Indian start-ups** to develop home-grown AI applications
- **Identify suitable policymakers and regulatory institutions** for AI governance laws.
- **Frame appropriate AI laws** drawing on existing national technology policies and international frameworks.

*Note: Global regulatory frameworks have been discussed in detail in the subsequent article.*

## 7.1.1. INTERNATIONAL REGULATORY FRAMEWORKS FOR AI

### Why in the news?

The **UN General Assembly (UNGA)** adopted a landmark resolution on the promotion of “safe, secure and trustworthy” artificial intelligence (AI) systems.

### Key highlights of the UNGA Resolution on Artificial Intelligence

- Calls for **same rights at offline and online** and “**to govern technology rather than let it govern us**”.
- Resolves to **bridge the artificial intelligence and other digital divides** between and within countries.
- **Supports regulatory and governance approaches** by encouraging Member States and stakeholders from all regions to develop safe, secure and trustworthy artificial intelligence.
- **Emphasizes on Human Rights Protection** throughout the life cycle of artificial intelligence systems.
- **Encourages private sector to adhere to applicable international and domestic laws** in line with the **United Nations Guiding Principles on Business and Human Rights**.
- **Calls for continued discussion on AI governance** so that international approaches keep pace with the evolution of AI system, promote inclusive research, mapping and analysis etc.

### Other International Regulatory frameworks for AI

- **European Union’s Artificial Intelligence Act:** It defines **4 levels of risk** for AI systems- Unacceptable risk, High-risk, Specific Transparency risk and Minimal risk.
  - Aims to ensure that rights, rule of law and environment are protected from high risk AI.
  - **Aims to tackle racial and gender bias** through training of AI with sufficiently representative datasets.
- **China’s Model:** Prompts AI tools and innovation with safeguards against any future harm to the nation’s social and economic goals
  - Focuses on content moderation, personal data protection, and algorithmic governance.
- **UK’s approach:** It has adopted a **cross-sector and outcome-based framework** for regulating AI with **core principles of safety, security and robustness**, transparency and accountability, and governance etc.
  - **Framework has not been codified into law for now**, but the government **anticipates the need for targeted legislative interventions in the future**.
  - **Balances innovation and safety** by applying the existing technology neutral regulatory framework to AI.
  - **AI & Digital Hub** will be launched as a multi-regulator advisory service to help innovators navigate multiple legal and regulatory obligations.

### Other Steps taken to promote AI Globally

- **Bletchley Declaration for AI:** It was signed by 29 countries including United States, China, Japan, United Kingdom, France, and India, and the European Union.
  - **Objective:** To address the **risks and responsibilities involved in AI comprehensively**
  - “**Frontier AI**” has been defined in the declaration as “highly capable foundation generative AI models that could possess dangerous capabilities that can pose severe risks to public safety”.
- **Hiroshima AI Process (HAP) by G7 to regulate AI:** It aims to promote safe, secure, and trustworthy AI. Hiroshima AI Process Comprehensive Policy Framework presents-
  - **Hiroshima Process International Guiding Principles for All AI Actors and**
  - **Hiroshima Process International Code of Conduct for Organizations Developing Advanced AI Systems**

## 7.2. GHOST PARTICLES

### Why in the news?

Scientists at **Ice Cube Neutrino Observatory in Antarctica** have detected seven tau neutrinos (ghost particles), which passed through the Earth.

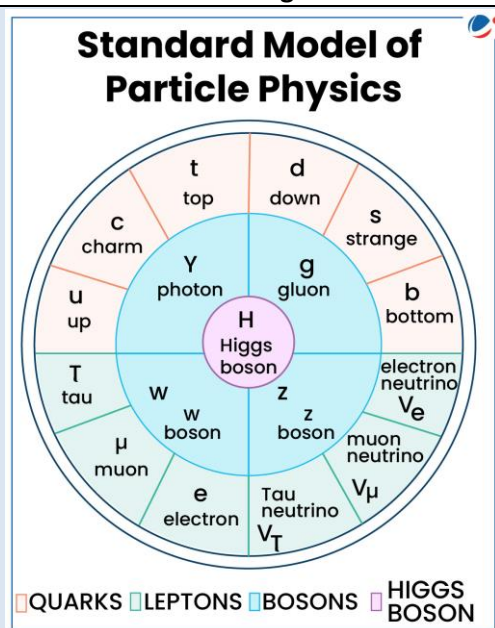
### What are neutrinos/Ghost Particles?

- **About:** They are **subatomic particles with no electrical charge and negligible mass**.

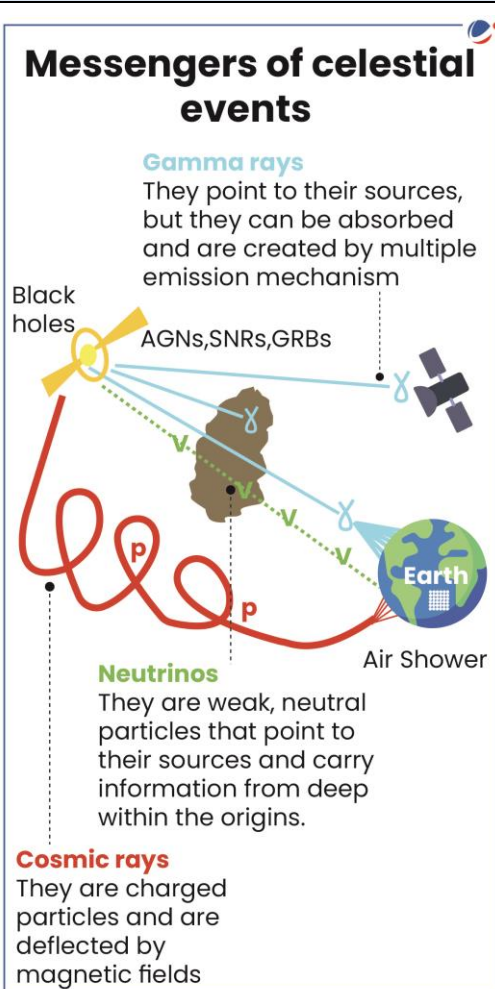
- High-energy neutrinos which are released from **cosmic sources at the Milky Way's edge** are known as "**astrophysical neutrinos**".
- They are also known as Ghost Particles because nearly 100 trillion of neutrinos pass through the human body every second without us noticing.
- **Classification:** Under the **Standard Model of particle physics**, they're classified as a "**lepton**."
  - Standard Model of physics is **the theory of particles, fields and the fundamental forces that govern them**.

#### The Standard Model of Particle Physics

- **Describe the most basic building blocks of the universe.**
  - Explains how particles called **quarks** (which make up protons and neutrons) and **leptons** (which include electrons) make up all known matter.
  - Also explains how **force carrying particles (bosons)** influence the quarks and leptons.
- Also, **explains three of the four fundamental forces** that govern the universe: electromagnetism, the strong force, and the weak force.
  - **Electromagnetism is carried by photons** and involves the interaction of electric fields and magnetic fields.
  - The **strong force, which is carried by gluons**, binds together atomic nuclei to make them stable.
  - The **weak force, carried by W and Z bosons**, causes nuclear reactions that have powered our Sun and other stars for billions of years.
  - The **fourth fundamental force is gravity**, which is **not adequately explained** by the Standard Model.



- **3 types or flavours: electron, muon, and tau**, and they oscillate between these flavours as they propagate.
- **Possible sources of high-energy neutrinos:** Events like supernovas and objects like active galactic nuclei and black holes.
  - **Sun's nuclear reactions, particle decay in Earth, Beta decay, particle accelerators and nuclear power plants** all release neutrinos.
- **Properties of neutrinos:**
  - Travel at **nearly the speed of light**.
  - Neither get deflected by magnetic fields, nor scattered or easily absorbed. Thus, are very difficult to detect.
  - Travel in **straight lines** from their source.
  - Neutrinos are the most abundant particles that have mass in the universe.
- Due to their properties, they are **excellent messengers of information** about the objects or events in which they originate.
  - Gamma rays and cosmic rays are other observed messengers.
- **Note:** It is **different from the 'God Particle' or Higgs boson**.
  - **Higgs boson** is the fundamental particle associated with the Higgs field which **gives mass to other fundamental particles**.
  - It was discovered in 2012 at the **Large Hadron Collider**, world's most powerful particle accelerator in the world, CERN, Switzerland.





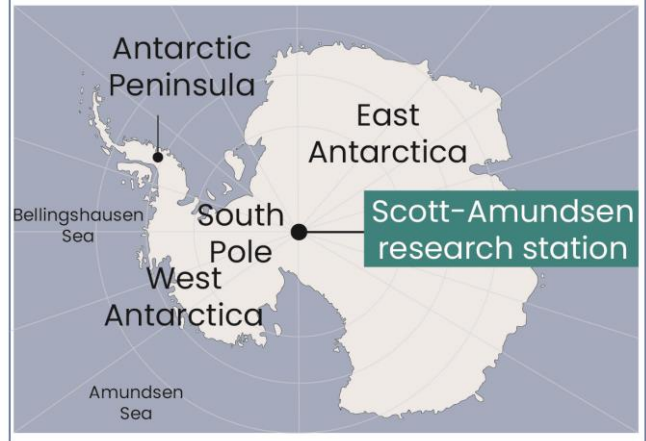
### About Ice Cube Observatory

- It is a **cubic-kilometre** neutrino particle detector buried deep **beneath the ice surface (~2500 metres)**.
- **Aim:** Observe cosmic rays that interact with the Earth's atmosphere and study the nature of dark matter and the properties of the neutrino.
- **Location:** Near the **Amundsen-Scott South Pole Station in Antarctica**.
  - The observatory was built on the South Pole as it needs **clear, pure, and stable ice** to make its discoveries and be **shielded from radiation at the Earth's surface**.
- It is the **first gigaton neutrino detector** ever built and was primarily designed to **observe neutrinos** from the most violent astrophysical sources.
  - The astrophysical neutrinos were **first detected by the observatory in 2013**.

### How does the Ice Cube Observatory detect neutrinos?

- Neutrinos are not observed directly, but through their **interaction with the other matter**.
- When neutrinos interact with molecules in the ice, **they produce electrically charged secondary particles traveling at high speeds** (faster than light in the ice).
- It leads to **emission of blue light (Cherenkov light)**.
- The observatory uses **strings/cables of digital optical modules (DOMs)** which are embedded deep into the Antarctic ice.
  - The instruments then convert the messages into light patterns which reveal the direction and energy of neutrinos.

## Amundsen-Scott South Pole Station, Antarctica



### Significance of studying neutrinos

- **Understanding universe's evolution:** They can provide us insights into the **early stages of the universe**, soon after the Big Bang.
  - E.g., China is using its supercomputer, Tianhe-2, to create a simulation involving neutrinos to understand the origin of the universe.
- **Better understanding of dark matter and dark energy:** 95% of our universe is comprised of dark matter (27%) and dark energy (68%).
- **Study the structure of nucleons:** Studying protons and neutrons present in nucleus of atoms may explain how matter evolved from simple particles into more complex ones.
- **Neutrinos emitted from stars:** Astronomers can study Neutrinos emitted from stars to understand the interior of stars, including the sun, and discover new planets.
- **Medical Applications:** They may have applications in medical imaging, similar to X-ray machines and MRI scans.
- **Monitoring of nuclear proliferation:** The process of fission inside of the nuclear reactor or from nuclear explosions leads to the birth of neutrinos through beta decay.
  - Distant nuclear reactions can be observed and monitored with detectors filled with purified water to spot these neutrinos.
  - E.g., **U.S.-U.K. collaboration- WATCHMAN** aims to demonstrate remote monitoring of nuclear reactors using neutrinos.

### Other Neutrino Observatories

- **Indian Neutrino Observatory (INO):** It is aimed at building underground laboratory for studying neutrinos.
  - Jointly funded by **Department of Atomic Energy and the Department of Science and Technology**.
  - **Location:** Bodi West hills of **Theni District of Tamil Nadu**.
- **China's TRIDENT (Tropical Deep-sea Neutrino Telescope):** It is new neutrino detector being built in the South China Sea, near the equator.
  - It will feature improved sensitivity and help in clearing the mystery around cosmic rays and their origins

## 7.3. FAST BREEDER REACTOR

### Why in the news?

Recently, core-loading process in the **indigenous Prototype Fast Breeder Reactor (PFBR)** was initiated at Madras Atomic Power Station in Kalpakkam, Tamil Nadu.

### More on news

- PFBR has been **designed and constructed indigenously by Bharatiya Nabhikiya Vidyut Nigam Ltd or BHAVINI** with significant contribution from more than 200 Indian industries.
- **Core loading** is the process of **placing nuclear fuel assemblies inside the core** of a nuclear reactor.
- The completion of core loading will effectively mark the **first approach to 'criticality'**.
  - Criticality means the initiation of a **self-sustaining nuclear fission reaction** that will eventually lead to the generation of power by the 500-megawatt electric (MWe) FBR.

### What is Fast Breeder Reactor?

- Fast Breeder Reactor (FBR) is a nuclear reactor that uses fast neutron to **generate more nuclear fuel than they consume** while generating power.
- FBR will use **Uranium-Plutonium Mixed Oxide (MOX)** fuel.
- The **Uranium-238 "blanket"** surrounding the fuel core will undergo nuclear transmutation to **produce more fuel**, which is why they are termed "**breeders**."

### Significance of FBR

- **Beginning of Stage 2 of nuclear programme:** The **operationalisation of PFBR** will mark the start of stage II of India's three-stage nuclear power programme.
- **Paves way for third stage:** In FBR, Thorium-232(Th-232) will also be used as blanket.
  - By transmutation (conversion of one element to another), Thorium will create fissile U-233 which will be used as fuel in the third stage.
  - FBR is thus a steppingstone for third stage of nuclear power program paving the way for the eventual full utilisation of the country's thorium reserves.
- **Technological advancement:** Once commissioned, India will be **second country after Russia** to have a commercial operating FBR.
  - China has a small programme on fast breeders; programmes in countries such as Japan, France, and the United States were **shut down** amid safety concerns.
- **Reduced waste:** As FBR uses the **spent fuel from the first stage**, it will also lead to significant reduction in nuclear waste, thereby avoiding the need for large geological disposal facilities.

### India's 3 stage Nuclear Power Programme

- India holds only **about 2-3% of the world's uranium reserves**, but it possesses one of the largest shares of global thorium reserves.
- **Dr Homi J Bhabha, father of India's nuclear programme**, therefore, devised a **three-stage nuclear power programme in 1950s** to make the most of India's limited uranium reserves and abundant thorium reserves.

#### Bharatiya Nabhikiya Vidyut Nigam Ltd or BHAVINI

- **About:** It is a **Government Company under administrative control of Department of Atomic Energy (DAE)**.
- **Genesis:** Incorporated in 2003 as Public Limited Company under Companies Act, 1956.
- **Objectives:**
  - **Constructing and commissioning the first 500 MWe Fast Breeder Reactor (FBR)** at Kalpakkam in Tamilnadu and
  - To pursue construction, commissioning, operation and maintenance of subsequent FBRs for generation of electricity under the provisions of **Atomic Energy Act, 1962**.

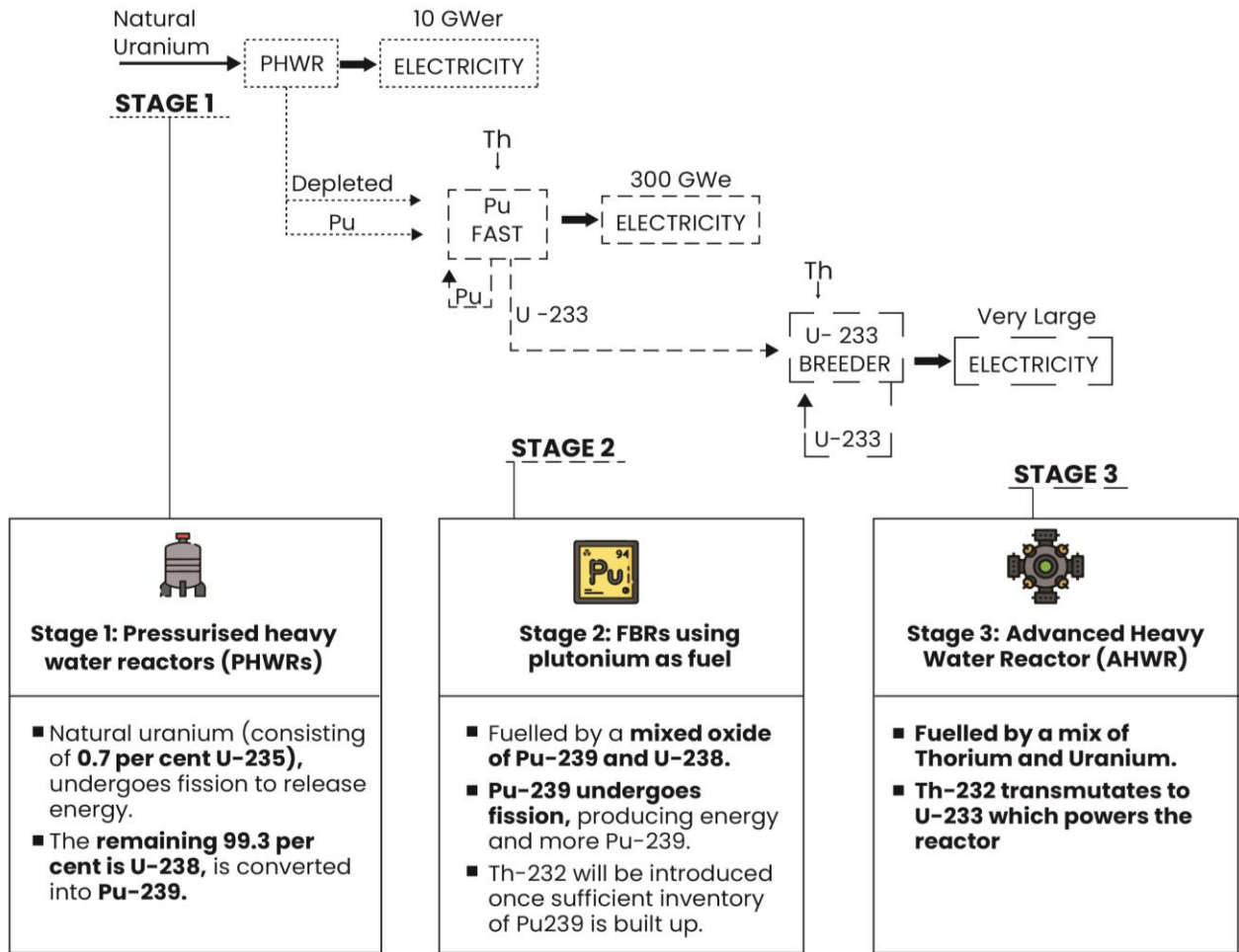
#### Thorium reserves in India

- Department of Atomic Energy (DAE), has so far established more than **11 million tonnes of in situ resources Monazite** (Thorium bearing mineral).
- Nearly **25% of world's thorium** ore is available in India.
- These are found in beach and river sands in **Kerala, Tamil Nadu, Odisha, Andhra Pradesh, West Bengal, Jharkhand** etc.

#### Do you know?

- > **Fissile materials** are materials that can undergo the fission reaction. On the other hand, **Fertile material** is a material, which is **not itself fissile**, but can be converted into a fissile material by irradiation in a reactor.
  - For example, **U238** and **Th-232** are fertile materials that have to be converted into fissile **Pu-239** and **U233**, respectively.
- > The **three-stage nuclear power programme** involve the conversion of fertile material into fissile material.

## India's Three-Stage Nuclear Power Program



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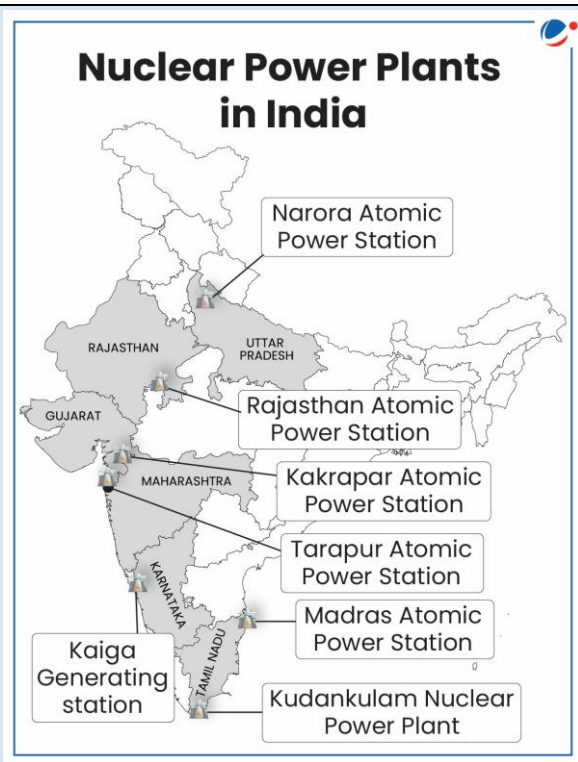
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### Nuclear Power generation in India

- Presently, installed nuclear power capacity in the country is **7.5 GW comprising of 23 nuclear power reactors**. (19 PHWR, 2 Boiling Water Reactors (BWR) and 2 Pressurised Water Reactors (PWRs)).
  - **Two indigenously designed 700 MW PHWR have been recently added** at the Kakrapar Atomic Power Plant.
- **Share of nuclear power** in the total electricity generation in the country was about **2.8% in 2022-23**.
- **Target:** India aims to achieve **tripling nuclear power generation capacity** by 2030.
- **Other Key developments:**
  - **India is taking steps for development of Small Modular Reactors (SMR)**
    - ✓ SMRs are advanced nuclear reactors that have a **power capacity of up to 300 MW(e) per unit**.
    - ✓ SMRs offers significant **savings in cost, construction time and simpler and safer** as compared to large nuclear plants.
  - **India has adopted closed fuel cycle** which aims at **reprocessing of spent fuel for recovery of Uranium and Plutonium** and recycling them back to reactor as fuel, thereby reducing **Nuclear Wastes**.



### Related news: Nuclear Energy Summit

- **First ever Nuclear Energy Summit** was held at Brussels (Belgium).
- **Hosted by:** International Atomic Energy Agency (IAEA) and the Belgian government.
- **Genesis:** It is organised in the wake of historic **inclusion of nuclear energy in the Global Stocktake** agreed at UN Climate Change Conference (COP28) in Dubai in 2023.
  - The Summit calls for accelerating deployment of **nuclear energy** along with other low carbon energy sources.
- **Objective:** To highlight **role of nuclear energy in addressing the global challenges** to reduce use of fossil fuels, enhance energy security and boost economic development.
- **Participants:** Leaders and **Representatives from 32 countries** (including India).

## 7.4. HUMAN GENOME SEQUENCING

### Why in the news?

Department of Biotechnology (DBT) announced the completion of GenomeIndia project.

### About GenomeIndia Project

- **Launched:** by DBT under **Ministry of Science and Technology (2020)**.
  - India had announced its **first complete human genome in 2009**.
- **Aim:** To collect **10,000** genetic samples from citizens across India and create a **Reference Genome** for Indian Population.
  - **Human genome reference sequence** is an accepted representation of the human genome sequence, made up of a combination of several people's DNA.
- **About the mission:**
  - Comprises researchers from 20 national institutes led by **Centre for Brain Research Bengaluru**.
  - Datasets generated will be stored at **Indian Biological Data Centre in Faridabad**.
  - It was inspired by the **Human Genome Project (HGP)**, the First international research effort to determine entire human genome DNA sequence.

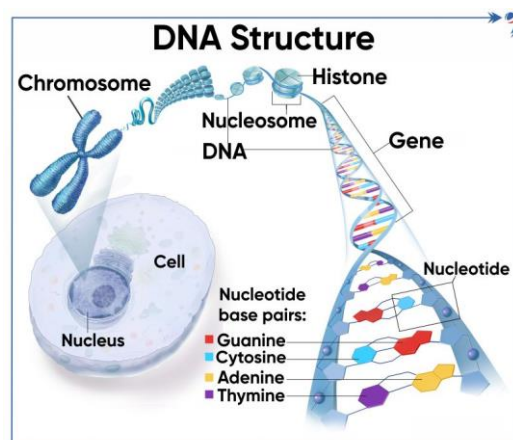
### Other Initiatives for Genome sequencing

- **IndiGen programme:** It took whole genome sequencing of thousands of individuals representing diverse ethnic groups from India.
  - It was funded by the Council for Scientific and Industrial Research (CSIR).
- **Global Alliance for Genomics and Health (GA4GH):** Formed in **2013**, it is a **not-for-profit alliance** that sets standards to expand genomic data use within a human rights framework.

- ✓ HGP was launched in **1990, completed in 2003** and covered **~92% of total human genome sequence**.
- ✓ It was led by the 'International Human Genome Sequencing Consortium' which involved scientists from 20 institutions in six countries: **France, Germany, Japan, China, the UK and the US**.
- It will create a **database representative of India's diverse population**, in addition to the other benefits offered by genome sequencing.

### What is genome and genome sequencing?

- The genome is a **complete set of genes of an organism** and includes all the chromosomes, which house the DNA and genes.
  - A gene is a **basic unit of heredity** made up of a sequence of nucleotides in DNA or RNA.
- **Genome sequencing** means determining the exact order of base pairs in a strand of DNA in an individual.
  - DNA molecules are polymers of long chains of nucleotides, which are **sugar molecules attached to a phosphate group and a nitrogen-containing base**.
  - DNA bases are Adenine (A), Cytosine (C), Guanine (G), and Thymine (T).
- Human genome contains approximately **3.2 billion nucleotides and 23,500 genes**.



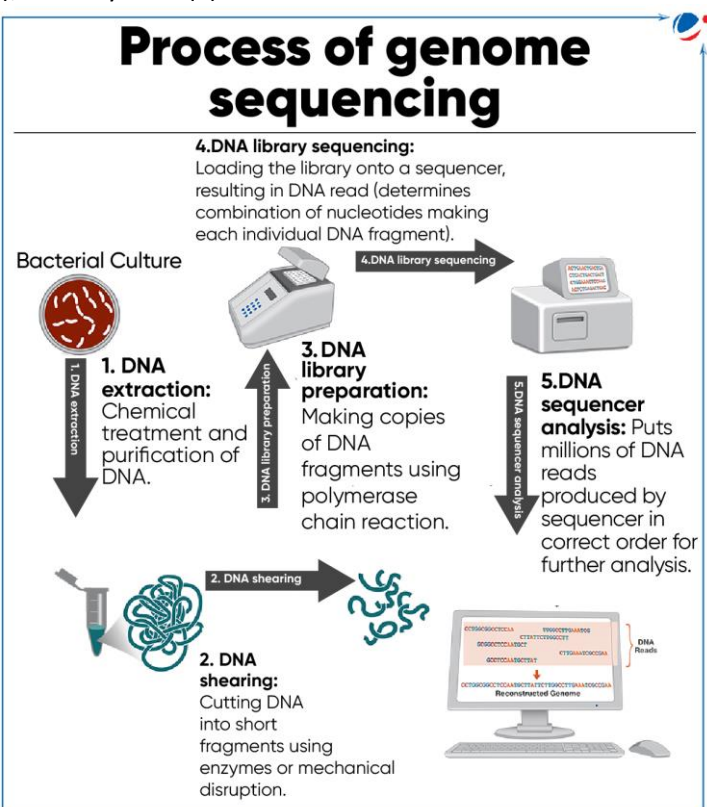
### Significance of Genome sequencing

- **Enable treatments for genetic diseases:** Genome sequencing is useful in-
  - **Prenatal screening** to identify genetic disorders in foetuses.
  - **Liquid biopsies** to diagnose cancer early.
  - **Pharmacogenetics**- study of how genes affect a person's response to drugs to prevent adverse drug reactions.
- **Development of Predictive diagnostics and personalized healthcare:** Through customised drugs and gene therapies based on genome sequencing.
- **Facilitate Advanced Analytics and Artificial Intelligence integration:** To enhance understanding of genetic causative factors and develop disease treatments.

**Note: The application 'Gene therapy' of genome sequencing is discussed in detail in the subsequent article.**

### Challenges related to genome sequencing

- **Lack of regulatory framework:** It limits quality and proficiency standards and leads to misuse of data.
  - Instances of samples from India sequenced and analysed abroad have been observed due to inadequate regulation.
- **Privacy and data issues:** Due to technology involving sensitive information such as personal data, medical history, and family history with diseases.
- **Fragmentation of genetic data:** With data remaining in silos, it prevents its access to public health decision-making.
- **Ethical issues:**
  - **Inequity and low diversity:** Unregulated market forces may create barriers to better healthcare access, especially for the poor and ethnic minorities.
  - **Discrimination based on genetic information:** It may prevent access to health benefits such as insurance.



- **Technological challenges:** Cyber threats, Problems of sample contamination and viable run quality etc.
- **Other issues:**
  - **Financial constraints** in establishing and maintaining sequencing facilities.
  - **Limited skilled personnel** for sequencing facilities.

### Way Forward

- **Establish clear regulations for fair competition and stakeholder trust.**
- **Prioritize genomic research funding** and establish centralized sequencing facilities
- **Develop advanced training programs** for researchers at both experimental and computational levels
- Improved access of up-to-date genomic data through collaboration with scientific publishers and **open access publication models.**
- **Utilize modern sequencing technologies** to minimize infrastructure requirements
- **Follow best practices** to curb data misuse and ensure ethical technology use, E.g. Genetic Information Non-discrimination Act in the U.S.A.

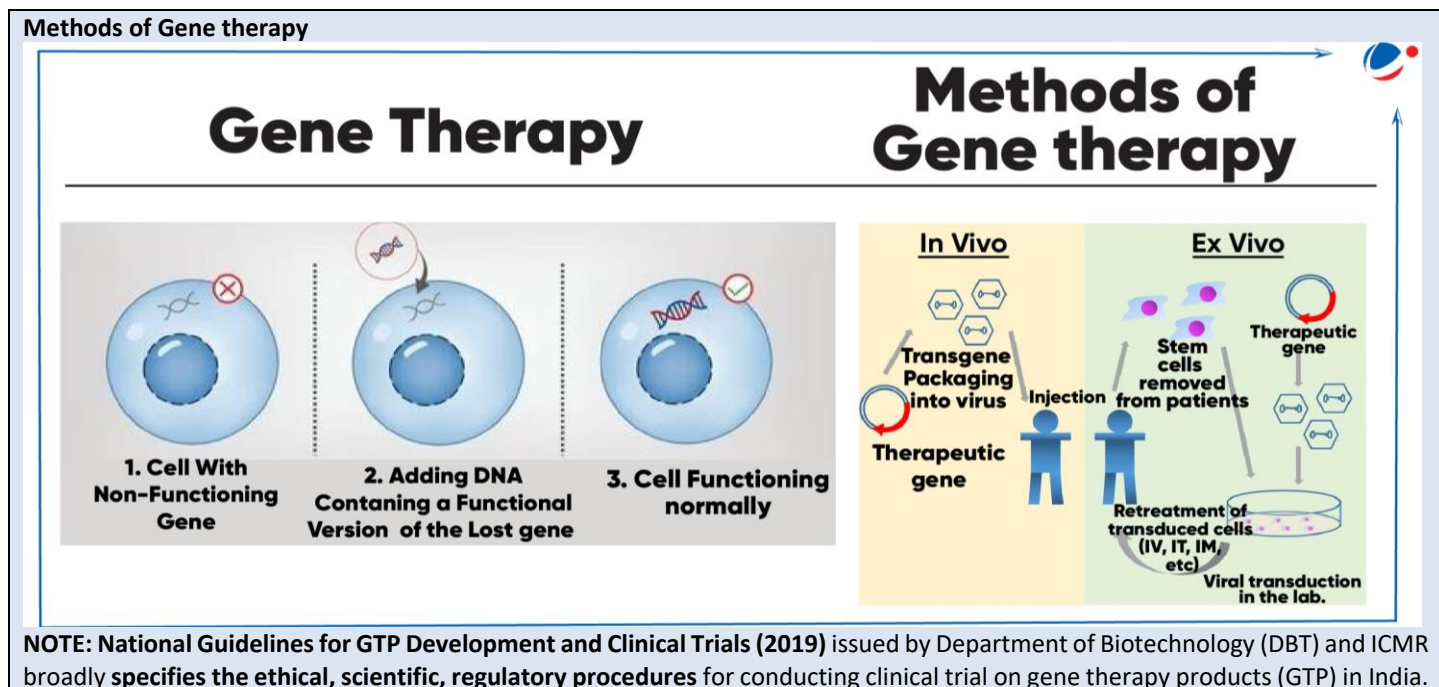
## 7.4.1. GENE THERAPY

### Why in the news?

India has conducted the first human clinical trial of gene therapy for **Haemophilia A (FVIII deficiency)** at Christian Medical College (CMC) Vellore (Tamil Nadu).

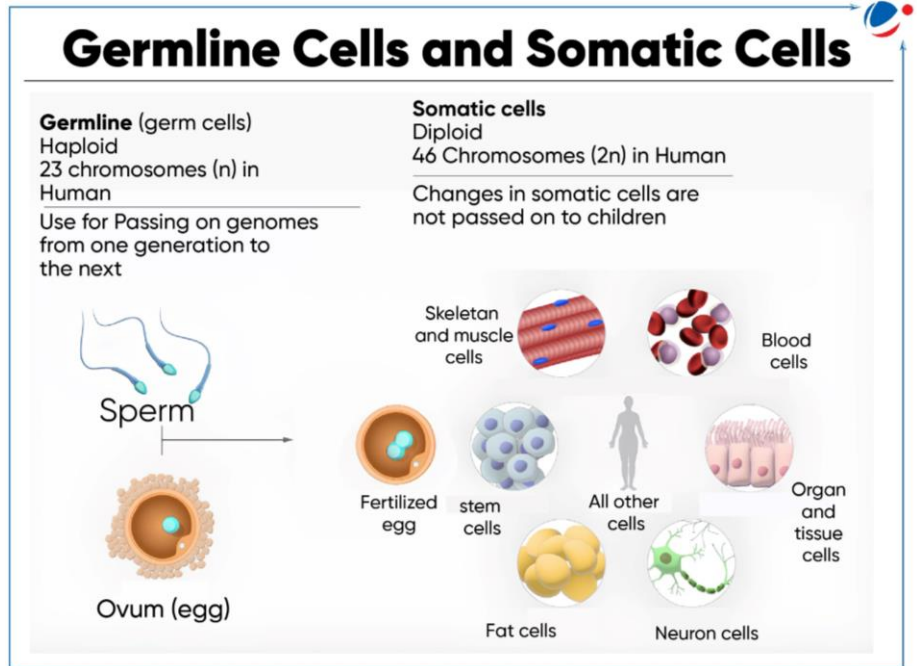
### About Gene Therapy

- **Definition:** It is a technique that **uses a gene(s) to treat, prevent or cure a disease** or medical disorder.
  - In most gene therapy, a **normal gene is inserted into the genome** to supplement an abnormal disease-causing gene and **restore the target cell to a normal state.**
- **Vectors:** Vector refers to the **carrier used for delivering the therapeutic gene** to the patient's target cells. It is of two types:
  - **Viral vector** (viruses like adenoviruses, retroviruses, adeno-associated viruses, etc. are used).
  - **Non-Viral vector** where in chemical and physical methods are used to insert DNA into cells.
    - ✓ Particle bombardment, use of liposomes, polymers, Nanoparticles etc. are used in this method.
- **Application:** Both **inherited genetic diseases** (e.g., haemophilia and sickle cell disease) and **acquired disorders** (e.g., leukaemia) could be **treated** with gene therapy.



## Types of Gene Therapy

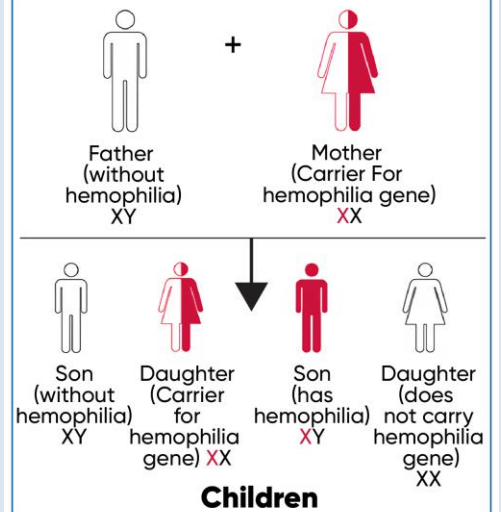
- **Germline gene therapy:** In germline gene therapy, the **Germline Cell** (egg or sperm) are **modified** by the introduction of **functional genes**, which are **integrated into the genome**.
- **Somatic cell gene therapy:** In this, therapeutic gene are **transferred to a patient's somatic cells** (cells other than germline cells). Any modification and any effects are **restricted only to that patient** and are **not inherited** by future generation.



## About Haemophilia

- **Definition:** Haemophilias are **inherited, life-long, sex-linked bleeding disorders** occurring **predominantly in males**.
- **Symptoms:** People with haemophilia can **bleed for a longer time** which can lead to serious health problems. However, they **do not bleed any faster than normal person**.
- **Causes:** It is caused by a **mutation in one of the genes, that provides instructions for making the clotting factor proteins** needed to form a blood clot.
  - Blood contains proteins **factor VIII (8) or factor IX (9)** which is necessary for **clotting that facilitates help to stop bleeding**.
- **Type:** The following two are the most common:
  - **Haemophilia A (Classic Haemophilia):** Due to a lack or decrease of clotting factor VIII.
  - **Haemophilia B (Christmas disease):** Due to a lack or decrease of clotting factor IX.
- **Inheritance:**
  - Haemophilia is **inherited through an X chromosome**.
  - **Male are more vulnerable** to haemophilia, since males have **only one copy of X chromosome (XY)**.
  - Females are **haemophilic in rare cases** since they have **two copies of X chromosome (XX)**.
    - ✓ For a female to be haemophilic, both of their X chromosome should have haemophile genes.
    - ✓ If **one of the X chromosomes** in women **has haemophile genes** then its **effect will be masked** by another normal X chromosome.
      - **Such female can be carrier** to the haemophilia and pass on the defective gene to their off springs.

## Inheritance of Hemophilia from Carrier Mother



## 7.5. CERVICAL CANCER

### Why in the news?

First ever **Global Cervical Cancer Elimination Forum** took place in Colombia, recently.

### More on News

- It was **organised by WHO, World Bank, UNICEF, Bill & Melinda Gates Foundation** and others.
- Forum aims to **catalyse** governments, donors, civil society, and various stakeholders to commit to cervical cancer elimination and galvanize global community.

## About Cervical Cancer

- Cancer is a disease in which **cells in the body grow out of control**. When cancer starts in the **cervix**, it is called cervical cancer.
  - The cervix **connects the vagina (birth canal) to the upper part of the uterus** (or womb where a baby grows during pregnancy).
- It occurs **most often in women over age 30** and is the **fourth most common cancer** in women globally.
  - It is the **second most common cancer among females in India**.
- Main cause of cervical cancer is the **persistent infection with the human papillomavirus (HPV)**.

### HPV Types

- HPV is a **group of more than 200 related viruses** and fall into two groups: **low risk and high risk**.
- **Low-risk HPVs** rarely cause cancer.
- **High-risk HPVs** can cause several types of cancer including anal, cervical, oropharyngeal, penile, vagina and vulvar cancer.
- There are **12 high-risk HPV types**. Two of these, **HPV 16 and HPV 18**, are responsible for most HPV-related cancers.

## About HPV

- HPV is a **common sexually transmitted infection** which can affect the skin, genital area and throat.
- In **most cases** the immune system clears HPV from the body.
- **Persistent infection with high-risk HPV** can cause abnormal cells to develop, which go on to become cancer.
  - There is currently **no treatment for HPV infection**.

## HPV vaccination and other prevention steps

- There are **6 HPV vaccines available globally**. All protect against the high-risk HPV 16 and 18, which cause most cervical cancers.
- **HPV vaccines** (1 or 2 doses) should be **given to all girls aged 9–14 years**.
- **Screening**, every 5-10 years, from the age of 30 (25 years in women living with HIV) can detect cervical disease, which when treated, **also prevents cervical cancer**.
- **Early detection followed by prompt quality treatment**. There is no treatment for the virus itself. However, there are treatments for the health problems that HPV can cause like Cervical Cancer.

### Do you know?

> **Cervavac** is the **first indigenous vaccine against cervical cancer in India**, developed and manufactured by Serum Institute of India.

## Initiatives for prevention

- **Cervical Cancer Elimination Initiative (by World Health Organization): WHO has outlined the '90-70-90' targets for each country by 2030-**
  - **Vaccination:** 90% of girls fully vaccinated with the HPV vaccine by the age of 15;
  - **Screening:** 70% of women screened by the age of 35, and again by the age of 45;
  - **Treatment:** 90% of women with pre-cancer treated and 90% of women with invasive cancer managed.
- **Vaccination to prevent Cervical Cancer:** Union Government in India proposed it in Interim Budget 2024-25. The programme will be for girls in the age group of 9 to 14 years for prevention of cervical cancer.

## 7.6. SUBMARINE CABLE SYSTEM (SMC)

### Why in the news?

An incident in the Red Sea has resulted in damage to **three submarine cables-Asia-Africa-Europe-1, Europe India Gateway, and Tata Global Network**.

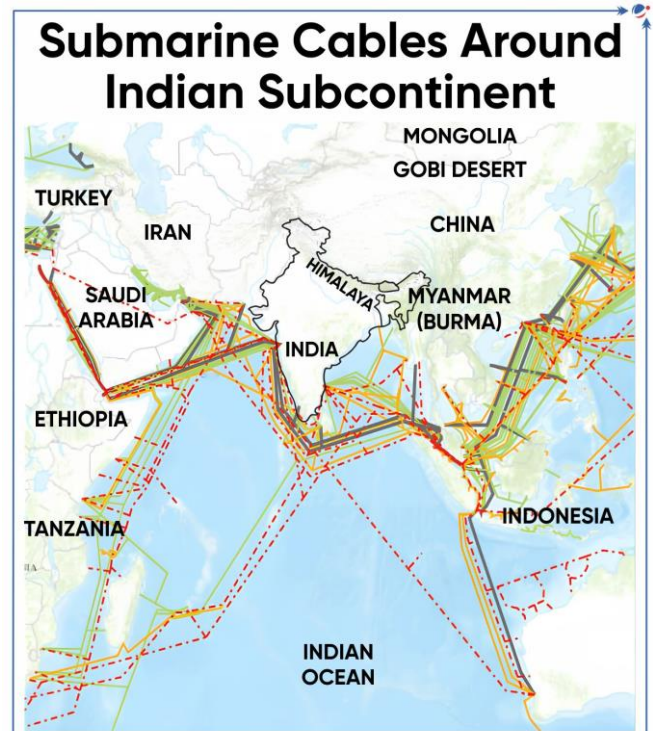
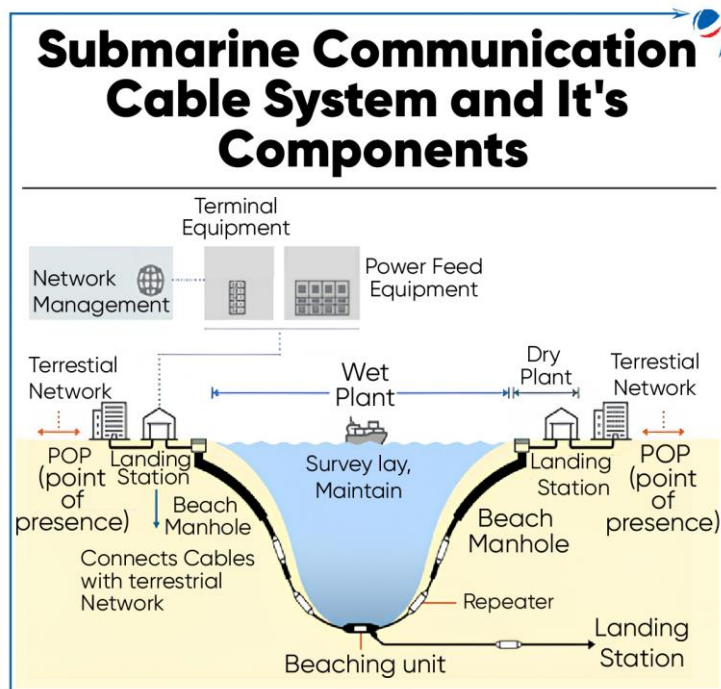
### About SMCs

- SMCs are **fibre optic cables** laid on the ocean floor that connect countries across the world to provide internet and telecommunications.
- They are laid using ships that are modified specifically for this purpose.
- **Significance:**
  - International cables carry around **99% of the world's international Internet traffic**.
  - United Nations General Assembly (UNGA) in 2010 described SMCs as a "**critical communication infrastructure**".
- **Other threats to SMCs:** Fishing and anchoring; Environmental factors like earthquakes, Damage by marine animals, etc.



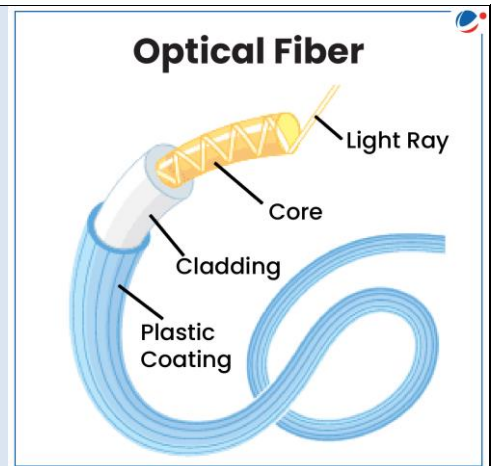
## SMC connectivity in India

- India has **17 International SMCs**, landing at **14 Cable Landing Stations (CLS)** in 5 cities near the coast.
- **Mumbai and Chennai** have the **maximum concentration of SMCs**.
- **India also has domestic submarine cables such as:**
  - **Chennai-Andaman and Nicobar Island Cable (CANI)** connecting Port Blair along with seven other Islands of Andaman & Nicobar
  - **The Kochi-Lakshadweep Island (KLI) cable system** for a direct communication link between Kochi and 11 Islands of Lakshadweep.
- **Regulation:** Department of Telecommunications (DoT) issues International Long-Distance (ILD) licenses.
  - ILD licensees, with prior approval of DoT, are authorized to set up their CLS and to lay submarine cables in India.
  - Internet Service Licensees under Unified license is also allowed to install operate and commission International Internet Gateway using submarine cable as medium.



### About Optical Fibre

- Optical fibres are made of glass or plastic that are used to transmit **information as light pulses**.
- It works based on a principle called '**total internal reflection**'-where the light in a fibre-optic cable travels through the core (hallway) by constantly bouncing from the cladding (mirror-lined walls).
- These cables enable the **transmission of huge amounts of data rapidly from one point to another** without a significant loss of optical power.
- **Dr. Narinder Singh Kapany, a U.K. based scientist** (born in India) is known as the father of Optics.



## 7.7. SATELLITE-BASED TOLL COLLECTION SYSTEM

### Why in the news?

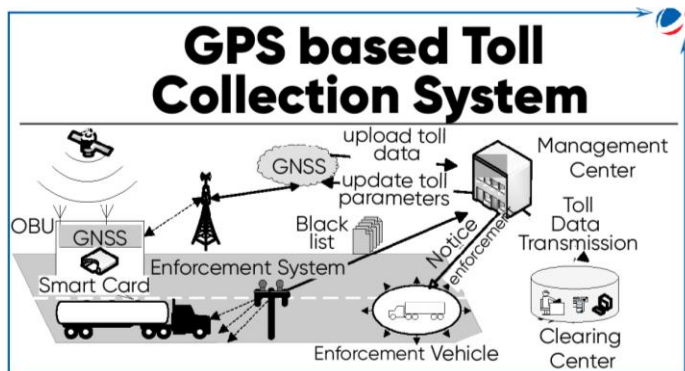
Government of India is planning to pilot-test a Global Navigation Satellite System (GNSS)-based Electronic Toll Collection (ETC) system on national highways.

### More on the news

- It will be implemented as an added facility along with the **FASTag**, which was made **mandatory in January 2021**.

### About GNSS-based toll collection

- **Working:** It uses satellite-based imaging to track the position of the vehicle and collect tolls based on the distance travelled.
- **Main components:**
  - **Online board Unit (OBU):** GNSS-enabled device installed in a vehicle to determine vehicle route and calculate toll.
  - **Automatic number plate reader (ANPR) cameras:** Installed on the highways to recognize vehicle's number plate and deduct toll money.
    - ✓ ANPR uses **optical character recognition on images** to read vehicle registration plates to create vehicle location data.
- **Benefits:** Decrease the need for roadside tolling infrastructure; reduce congestion; enhance toll collection effectiveness, etc.
- **Challenges:** Signal interference or inaccurate readings; Privacy Concerns; need to equip older vehicles with GNSS technology etc.
- GNSS-based toll systems have already been implemented in countries like **Germany and Singapore**.



Difference between FASTags & Satellite-based toll collection		
Parameters	FASTags	GNSS-based Toll collection
Technology	'Radio Frequency Identification' (RFID)	Satellite-based imaging and <b>Automatic number plate reader (ANPR) cameras</b>
Equipment needed to be installed in Vehicles	FASTag (RFID Tag) affixed on the windscreen	OBU with GNSS connectivity
Calculation of Toll tax	Fixed rates	Based on real-time vehicle movement data
Requirement of Toll Plazas	Physical toll booths required for scanning <b>FASTag</b>	Not required

- India has its own **satellite navigation systems**, namely **GAGAN** (GPS-Aided GEO Augmented Navigation) and **NavIC** (Navigation with Indian Constellation).

## 7.8. MULTIPLE INDEPENDENTLY TARGETABLE RE-ENTRY VEHICLE (MIRV) TECHNOLOGY

### Why in the News?

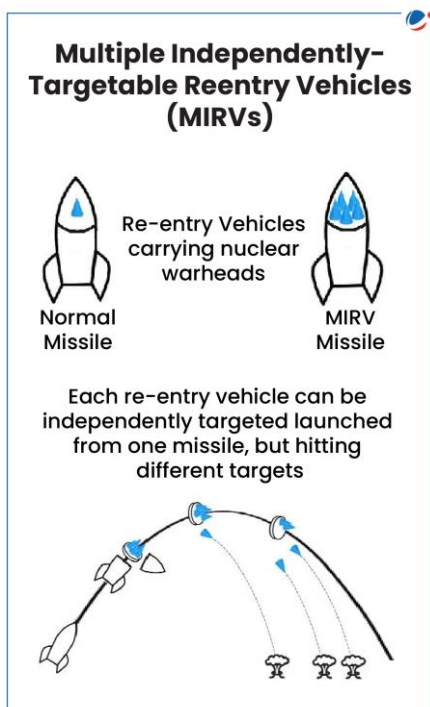
DRDO has conducted first successful flight test (named Mission Divyastra) of indigenously developed Agni-5 missile with Multiple Independently Targetable Re-Entry Vehicle (MIRV) technology.

### About MIRV technology

- **Genesis:** Originally developed in the early 1960s to allow a single missile to **carry multiple nuclear warheads**, each capable of striking different targets independently.
  - Warheads can be released from the **missile** at different speeds and in different directions.
- **First country:** The **United States of America** was the first country to develop MIRV technology.
  - Russia, United Kingdom, France, and China also have MIRV Technology.
  - In 2017, Pakistan reportedly tested a MIRVed missile, the Ababeel.
- **MIRVs** can be launched from land or sea platforms (with submarine).
  - The use of MIRVs on submarines is considered less destabilizing than on land-based missiles as nuclear submarines (carrying these missiles) is difficult to locate.
- Although MIRVs were **not initially intended to defeat ballistic missile defences (BMD)**, they are much more difficult to defend against than traditional missiles and are considered **effective BMD countermeasures**.

## Challenges in MIRV technology

- **Vulnerable:** Land-based MIRVs are particularly **destabilizing** because many warheads on fewer missiles are vulnerable to attack, incentivizing an adversary to strike first in a time of crisis.
- **Arm-race:** MIRVs held open the possibility of a damage-limiting first strike against an adversary's strategic nuclear forces, thereby exacerbating both **arms-race and crisis instability**.
- **Other Challenges:** miniaturisation of warheads, development of advanced guidance systems, requirement of additional fissile material like plutonium etc.



## Significance of MIRV for India

**Enhanced Deterrence:** Align with India's objective of **nuclear doctrine** which emphasizes massive **retaliation in response** to a nuclear first strike.

**Accuracy:** Strengthen India's ability to evade any current and future **ballistic missile defense (BMD)** systems

**Force Modernization:** In the future MIRVs can be installed on India's other ballistic missiles as well

**Regional Balance of Power:** Strengthens India's position vis-à-vis its neighbors (China, Pakistan) and reinforces its role as a major **regional power**

## Conclusion

While affirming its commitment to global disarmament, India must navigate the delicate balance between technological advancements, regional power dynamics, and international perceptions. As India stands at the forefront of MIRV-capable nations, the road ahead calls for strategic foresight, diplomatic acumen, and a steadfast commitment to maintaining a stable and secure global order.

### Agni-5 Missile

- **About:** It is **Surface to Surface** Ballistic Missile indigenously developed by DRDO.
  - A ballistic missile is a type of missile that uses projectile motion to deliver warheads on a target.
- **Range:** Greater than 5,000 km with a very high degree of accuracy.
- **Fuel:** It uses **three-stage** solid fuelled engine.
- **Developed** under Integrated Guided Missile Development Programme (IGMDP)
- **IGMDP was** launched in **1983** headed by Dr. APJ Abdul Kalam to enable India attain self-sufficiency in the field of missile technology.
  - **The missiles developed under the programme:**
    - ✓ **Prithvi:** Short-range **surface-to-surface** ballistic missile.
    - ✓ **Agni:** Intermediate-range **surface-to-surface** ballistic missile.
    - ✓ **Trishul:** Short-range low-level **surface-to-air** missile.
    - ✓ **Akash:** Medium-range **surface-to-air** missile.
    - ✓ **Nag:** Third generation **anti-tank** missile.

## 7.9. NEWS IN SHORTS

### 7.9.1. ESTABLISHMENT OF END-TO-END QUANTUM COMMUNICATION LINK

- In a first for India, C-DOT and PRL demonstrated **integration** of C-DOT's indigenous **Fibre-based Quantum Key Distribution (QKD)** system with PRL's **Free Space QKD**.
  - Centre for Development of Telematics (**C-DOT**) is telecom **Research and Development** arm of Department of Telecommunications.
  - Physical Research Laboratory (PRL) is a **research institute** under Department of Space.
- QKD is a **technique of quantum communications** which enables future-proof **security of communication networks** using a **cryptographic protocol** involving components of quantum mechanics.

- It enables two parties to produce a **shared random secret key** known only to them, which can be used to **encrypt and decrypt messages**.
- Any **intervention or tampering** in quantum channel **gets detected** and key distribution can be aborted.
- QKD can be deployed through **different mediums viz. optical fibre, free space** as well as **satellite** to establish secure communication network.
- **Quantum communications** is one of the **four verticals of Quantum Technology** along with Quantum Computing, Quantum Sensors and Quantum Materials.
  - Quantum technology is based on principles of **Quantum mechanics** such as superimposition, entanglement, tunnelling etc.
  - Its **applications** are in secure communication, computing, simulation, chemistry, healthcare, cryptography, imaging among others.
- **RLV-TD Programme** aims at **developing essential technologies** for a **fully RLV** to enable low-cost access to space
  - **RLV** is essentially a space plane which can travel to low earth orbits to deliver payloads and return to earth for use again.
  - This vehicle will be scaled up to become the **first stage of India's reusable two-stage orbital (TSTO) launch vehicle**.
  - **NASA is using RLV for long time** and private space agencies such as Space X demonstrating partially reusable launch systems.
- **Advantages:** RLV is considered a low-cost, reliable, and on-demand mode of accessing space.
- **Challenges:** Selection of materials like special alloys, composites, and insulation materials and the crafting of its parts is very complex and demands highly skilled manpower.

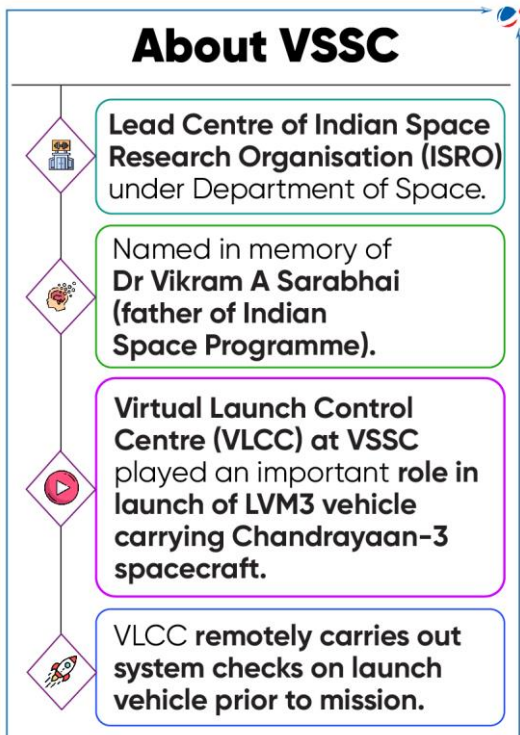


### 7.9.3. THREE SPACE INFRASTRUCTURE PROJECTS INAUGURATED IN KERALA

- During Prime Minister's visit to **Vikram Sarabhai Space Centre (VSSC)** in Thiruvananthapuram, projects were launched to reform country's space sector.
- **Three projects include**
  - **SLV Integration Facility (PIF) at Satish Dhawan Space Centre, Sriharikota to boost frequency of Polar Satellite Launch Vehicle (PSLV) launches** from 6 to 15 per year.
    - ✓ It also caters to **launches of Small Satellite Launch Vehicle (SSLV)** and other small launch vehicles designed by private space companies.
    - ✓ **SSLV is a 3-stage Launch Vehicle** capable of launching satellites in **low earth orbit at low cost**.
    - ✓ PSLV is a **four-stage launch vehicle** capable of launching satellites into **Geosynchronous and Geostationary orbits**.
  - **Semi-cryogenics Integrated Engine and Stage Test facility at ISRO Propulsion Complex at Mahendragiri** will enable development of semi-cryogenic engines and stages, which will **increase payload capability of present launch vehicles**.
    - ✓ Facility is equipped with **liquid Oxygen and kerosene supply systems** to test engines up to 200 tons of thrust.
  - **Trisonic Wind Tunnel at VSSC** for aerodynamic testing for characterisation of rockets and aircraft during flight in atmospheric regime.
- PM also reviewed Gaganyaan Mission (India's **first human spaceflight mission**) progress and **bestowed 'astronaut wings' to four astronaut-designates**, which symbolize trust, courage, and discipline.

### 7.9.2. PUSHPAK REUSABLE LANDING VEHICLE (RLV) LEX 02 LAUNCHED SUCCESSFULLY

- ISRO successfully conducted the Pushpak Reusable Landing Vehicle (RLV) LEX 02 Landing Experiment
- **RLV LEX 02** is the **second of the series of experiments** conducted by the ISRO under the **Reusable Launch Vehicle Technology Demonstration (RLV-TD) Programme**.
  - RLV LEX 02 re-validated the **indigenously developed technologies** for performing high speed autonomous landing of a space returning vehicle.
  - In it, the winged body and all flight systems used in RLV-LEX-01 were reused.
    - ✓ In 2023, RLV-LEX-01 mission was successfully conducted.



- **Benefits**
  - monitor health of astronauts and provides information of blood pressure, heart rate etc.
  - seamless communication link by keeping crew connected with onboard computer and ground-based stations.
  - Helps in maintaining a log on mission in multiple formats including voice records, texts and images.

### 7.9.6. STATIO SHIV SHAKTI

- International Astronomical Union (IAU) has approved the name 'Statio Shiv Shakti' for the landing site of Chandrayaan-3's Vikram lander.
- Name was included in Gazetteer of Planetary Nomenclature, which documents planetary names approved by IAU.
  - Planetary nomenclature uniquely identifies a feature on surface of a planet or satellite.
- IAU was founded in 1919 with its Secretariat in Paris, France.
  - Its mission is to promote and safeguard the science of astronomy in all its aspects.
  - 92 member countries including India.
  - It serves as international authority for assigning designations to celestial bodies and surface features on them.

### 7.9.7. UNCOVER PROGRAM

- Researchers, as part of the James Web Space Telescope (JWST) UNCOVER program, finds a clue about the end of 'dark ages' in early universe.
  - Dark ages refer to a period when sources of light were cloaked in a dense fog of neutral hydrogen gas.
  - It was followed by 'epoch of reionization' that arose because of arrival of first stars and galaxies.
- UNCOVER (Ultra-deep NIRCam and NIRSpect Observations Before the Epoch of Reionization) aims at addressing two core JWST science goals:
  - Identifying first-light galaxies during the Dark Ages.
  - Studying the ultra-low luminosity galaxies that were responsible for reionization.

### 7.9.8. GARBHINI-GA2

- Translational Health Science and Technology Institute (THSTI) and IIT Madras researchers have developed Garbhini-GA2.
  - It is an India-specific model to precisely determine the age of a foetus in a pregnant woman in the second and third trimesters.
- Garbhini-GA2 is a part of the Interdisciplinary Group for Advanced Research on Birth Outcomes –

### 7.9.4. KULASEKARAPATTINAM SPACEPORT (KS)

- Recently, PM laid the foundation stone of Kulasekarapattinam spaceport in Thoothukudi district of Tamil Nadu.
- About Kulasekarapattinam spaceport
  - It will be used to launch SSLVs, (Small Satellite Launch Vehicles).
  - It has several advantages in comparison to Sriharikota facility in Andhra Pradesh, such as
    - ✓ Located more close to the equator and will save fuel
    - ✓ Rockets can now head straight in the southern direction.
      - From Sriharikota facility, the rocket first heads east, and then turns south to avoid the airspace of Sri Lanka.
    - ✓ Nearby ISRO's Propulsion Research Complex location makes it easier to transport the rocket components safely, and in a shorter period.

### 7.9.5. SPACE-BORNE ASSISTANT AND KNOWLEDGE HUB FOR CREW INTERACTION (SAKHI) APP

- Vikram Sarabhai Space Centre (located at Thumba in Thiruvananthapuram) has developed it to help astronauts on Gaganyaan mission.
  - Gaganyaan project envisages demonstration of human spaceflight capability by launching crew of 3 members to an orbit of 400 km.

Department of Biotechnology (DBT) India Initiative (GARBH-Ini) program.

- **About (GARBH-Ini) program**
  - It is a **cohort study of pregnant women** initiated in 2015.
  - **Objectives:** to identify clinical, epidemiologic, genomic, and generate a risk-prediction algorithm for preterm birth.

### 7.9.9. INDIA TO RESTART PENICILLIN G MANUFACTURING

- **Union Minister for Chemicals & Fertilizers** said that India will restart Penicillin G manufacturing after a gap of 30 years.
- Penicillin G is an **Active Pharmaceutical Ingredient (API)** used in manufacturing antibacterial drugs to treat **pneumonia, meningitis, gonorrhea, syphilis.**
  - It is also known as **benzylpenicillin, or benzylpenicillanic acid.**
  - In **1928, Scottish Biologist Alexander Fleming** isolated the **first specific form of penicillin** from **Penicillium fungi.**
    - ✓ For this he shared **Nobel Prize in Physiology/Medicine for the discovery in 1945.**
  - It is administered intravenously or intramuscularly due to **poor oral absorption.**
  - Like many other APIs, **manufacturing of Penicillin G** was phased out from India due to **cheaper imports from China** after globalization.
- **About API**
  - API or bulk drug, is **key ingredient of a drug or medicine**, which lends it the **desired therapeutic effect** or produces the intended **pharmacological activity.**
  - Despite India being 3rd largest pharmaceutical industry by volume in world, it is **primarily dependent on bulk drug import particularly from China.**
  - **Key issues** in established API manufacturing unit include **huge initial costs, intense global competition,** etc.
- **Initiatives for self-reliance in API:** Ministry of Chemicals and Fertilizers has launched:
  - Scheme for **Promotion of Bulk Drug Parks**
  - **Production Linked Incentive (PLI) Scheme** for Pharmaceuticals covers APIs.
  - **PLI scheme** for domestic manufacturing of **key starting material (KSMs)/Drug Intermediates (DIs) and API.**

### 7.9.10. NATIONAL ACTION PLAN FOR PREVENTION AND CONTROL OF SNAKEBITE ENVENOMING (NAP-SE)



- Launched by **Ministry of Health and Family Welfare**, NAP-SE aims at systematic reduction of snakebite envenoming risk through **sustained availability of anti-snake venom, capacity building, referral mechanism and public education.**
  - Its **vision** is to **reduce snakebite deaths and disability cases by half by 2030**, through ‘**One Health**’ approach.
    - ✓ **One Health** is an integrated approach which highlights that **health of people, animals and ecosystems is interrelated.**
  - It envisages step-wise approach for **states/ union territories to develop their own action plan** as per their needs.
- **Key strategic actions identified by NAP-SE for**
  - **Human health component:** Ensuring provision of anti-snake venom at all health facilities, strengthening surveillance of snakebite cases, institutionalization of Regional Venom Centre’s etc.

- **Wildlife health component:** Education awareness, systematic research and monitoring, snake venom collection and snake relocation etc.
- **Animal and agriculture component:** Prevention of snakebites in livestock, community engagement, production and use of Anti-Venom etc.
- **Snakebite envenoming is a neglected tropical disease** caused by **bite of venomous snake**.
  - In India, **around 90% of snakebites** are caused by '**big four**' among crawlers - **Common Krait, Indian Cobra** (spectacled cobra), **Russell's Viper** and **Saw Scaled Viper**.

#### 7.9.11. YAOUNDE DECLARATION

- **Ministers of Health from African countries** signed the Yaounde Declaration **to end malaria deaths**.
- **Signed at the Yaoundé conference** co-hosted by the World Health Organization (WHO) & **Cameroon**.
- **11 African nations**, which account for the majority of global malaria infections and fatalities, **signed it**.
- It includes the commitment to **allocate 15 percent of annual budgets for the health sector**.
- It's **aligned with the “High burden to high impact” WHO approach**.

#### 7.9.12. PARTHENOGENESIS

- Scientists have genetically modified a fruit fly to reproduce asexually through Parthenogenesis.
- **Parthenogenesis (PG)**
  - It is an **asexual reproduction** in which a **female can produce an embryo without fertilizing an egg with sperm**.
  - **Two forms of Natural PG**
    - ✓ **Automixis:** It, **observed mostly in sharks, slightly shuffles mother’s DNA** to produce children who are close to but not identical clones of mother.
    - ✓ **Apomixis:** A type of **genetic copy-and-paste** where offspring generated are genetically identical clones of their parents. **Plants are more prone to this type of parthenogenesis**.

#### 7.9.13. INDELIBLE INK (VOTER’S INK)

- **Mysore Paints and Varnish Ltd (MPVL)**, the sole manufacturer of indelible ink, received its largest order

yet from Election Commission for 26.55 lakh vials of marker.

- **Under rule 49K of Conduct of Elections Rules, 1961** every elector shall allow his **left forefinger** to be **inspected** by Presiding officer or Polling Officer and an **Indelible ink mark to be put** on it.
- Once applied, **Purple-coloured ink cannot be removed by any chemical, detergent, soap or oil** for several months.
- Ink **contains silver nitrate**, which on reaction with nail and on exposure to light gets darker.

#### 7.9.14. DRY ICE

- Diners at Gurgaon eatery hospitalised after mistakenly being served dry ice.
- **About Dry Ice**
  - It is common name for **solid carbon dioxide (CO<sub>2</sub>)**.
  - It gets this name because it does **not melt into a liquid when heated**; instead, it changes **directly into a gas** (a process known as sublimation).
  - It is manufactured by **compressing** and cooling gaseous CO<sub>2</sub>.
  - It is considered lethal for human health.
  - **Applications:** Hospitals & Clinics, Food Processing & Distribution, Industrial Cleaning and Technical Processes and Theatrical and Special Effects.

#### 7.9.15. ASBESTOS

- **USA’s Environmental Protection Agency banned** all forms of deadly carcinogen **asbestos**.
- **Asbestos** is a group of naturally occurring fibrous minerals having extraordinary tensile strength, poor heat conduction and resistance to chemical.
  - **Main forms of asbestos** are chrysotile (white asbestos) and crocidolite (blue asbestos).
  - **Applications:** Building materials, insulation, automobile parts etc.
  - **Health impact:** All types of asbestos are carcinogenic, causing **lung cancer, mesothelioma, cancer of larynx and ovary, and asbestosis** (fibrosis of the lungs).
  - **India has not banned** use of any type of asbestos.



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# 8. CULTURE

## 8.1. LACHIT BARPHUKAN

### Why in the news?

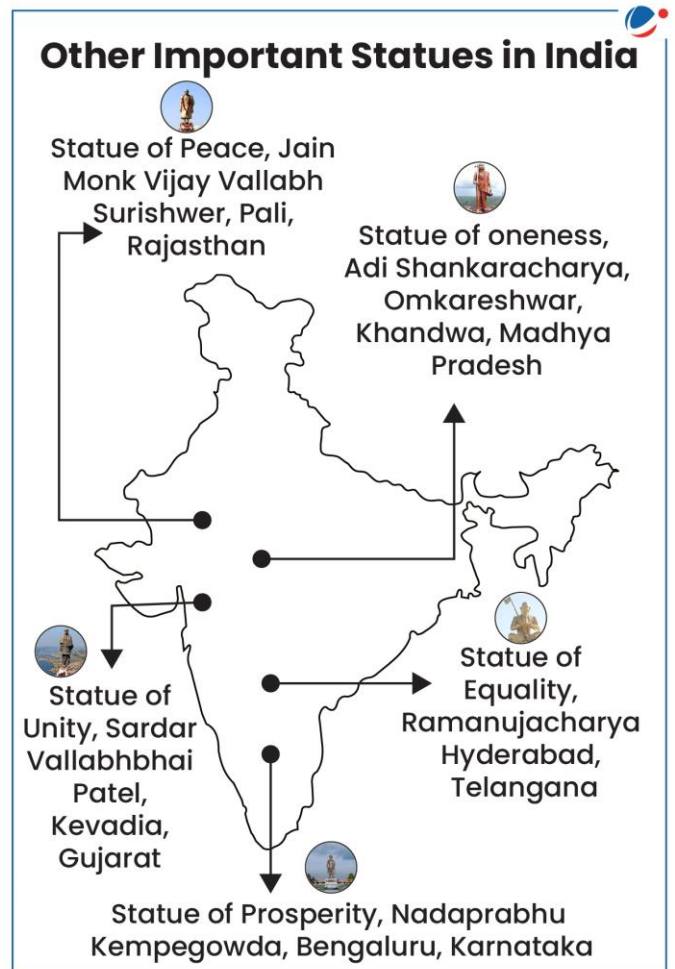
Prime Minister recently unveiled the "**Statue of Valour**", a 125-foot bronze statue of Ahom general **Lachit Barphukan** in **Jorhat, Assam**.

### About Lachit Barphukan (1622 - 1672)

- **Place of Birth:** Charaideo district of Assam.
- **Mother:** Kunti Moran
- **Father:** Momai Tamuli Barbarua
  - He was the **first Barbarua** (military and judicial head) in the Ahom Kingdom.
  - As a **Barphukan** (commander-in-chief) of the Ahom army, he led successful **campaigns against the Mughals** during the reigns of Emperor **Jahangir and Shahjahan**.
  - He was the **founder of the Paik practices** (a system of forced labour in the Ahom kingdom).
- **Clan:** Lachit Barphukan belonged to Lukhurakhun clan (Ahom kingdom had many clans).
- **Role as Military Chief:** King Swargadeo Chakradhwaj Singh appointed Lachit **Barphukan**.
  - In this authority Lachit Barphukan led the Ahom forces to **victory in the Battle of Saraighat**.

### Battle of Saraighat (1671)


- **Background:**
  - In **1662**, under the leadership of **Mir Jumla** the **Army of Mughal** Emperor Aurangzeb defeated the Ahom kingdom and **included it in the Tax-based state**.
  - In **1669**, Mughal forces led by **Ram Sigh** annexed **Guwahati** in the **Battle of Alaboi**.
- **Location:** It took place on the **Brahmaputra River** at Saraighat, near the city of Guwahati in the present-day Indian state of Assam.
- **Combatant:** The battle was **largely a naval war**. The **Ahom forces** were led by **Lachit Barphukan**, while the **Mughal forces** were commanded by the **Mughal general Ram Singh**.
- **Outcome:** The **Ahom forces** under Lachit Barphukan decisively **defeated the larger Mughal army**, effectively ending the Mughal attempts to conquer the Ahom kingdom.
- **Significance:** The battle **stopped the Mughal advance to Assam**, and the **rest of today's Northeast India**.



### Do you know?

- > Since 1999 in the **National Defence Academy (NDA)**, Lachit Barphukan Gold Medal is given to the best cadet

## About Ahom Kingdom (1228 to 1826)

<p><b>Kingdom</b></p>	<ul style="list-style-type: none"> <li>• <b>Founder:</b> Sukaphaa, a Shan prince of Mong Mao who came to Assam after crossing the Patkai Mountains.</li> <li>• <b>Establishment:</b> Ahoms migrated to the Brahmaputra valley from present-day Myanmar in the 13<sup>th</sup> century.</li> <li>• <b>Expansion of territory:</b> In the 16<sup>th</sup> century, under the rule of Suhungmung, Ahom captured territories of the Chutiya and Koch-hajo kingdoms.</li> <li>• <b>Capital:</b> Charaideo (east of Guwahati) was the first capital of the Ahom dynasty</li> </ul>	 <p>The map, titled 'Ahom Kingdom in Final Years', shows the geographical extent of the Ahom Kingdom in the late 18th century. The kingdom is highlighted in green and covers a large area in Assam, India, and parts of northeastern India. Key locations marked include Jorhat, Charaideo (the capital), and various other towns like Guwahati, Dimaapur, and Kacha Nagas. Neighboring regions like Jaintia Kingdom, Kacha Nagas, and Manipur are also shown. The map includes geographical features like the Patkai Bumdiar range and the Brahmaputra river valley. Surrounding countries like Bhutan, Tibet, and Myanmar are also indicated.</p>
<p><b>Society</b></p>	<ul style="list-style-type: none"> <li>• <b>Clan:</b> Ahom society was divided into <b>clans or khels</b>. A <b>khel</b> often <b>controlled several villages</b>. <ul style="list-style-type: none"> <li>○ The <b>peasant was given land by his village community</b>. Even the king could not take it away without the community's consent. <ul style="list-style-type: none"> <li>✓ People from heavily populated areas were shifted to less populated areas, thus <b>Ahom clans were broken up</b>.</li> </ul> </li> </ul> </li> </ul>	
<p><b>Political Features</b></p>	<ul style="list-style-type: none"> <li>• <b>Suppression of Older Political Systems:</b> Ahom created a new state by suppressing the <b>older political system of the bhuiyans</b> (landlords).</li> <li>• <b>Forced Labor System – Paiks:</b> Ahom state depended upon <b>forced labourers called Paiks</b>. <ul style="list-style-type: none"> <li>○ A <b>census of the population</b> was taken. Each village had to send several paiks by rotation.</li> </ul> </li> </ul>	
<p><b>Administration</b></p>	<ul style="list-style-type: none"> <li>• <b>Centralized Administration:</b> By first half of seventeenth century <b>administration became quite centralised</b>.</li> <li>• <b>Council of Ministers</b> <ul style="list-style-type: none"> <li>○ The <b>king</b> was assisted by a council of ministers referred to as <b>Patra Mantris</b>.</li> <li>○ The <b>foremost Patra Mantris</b> were the <b>Great Gohains</b> (the Buragohain, Borgohain and Barpatragohain).</li> </ul> </li> <li>• <b>Important officers:</b> Barbarua (military and judicial head) and Barphukan (military and civil head) <ul style="list-style-type: none"> <li>○ The <b>position of Barphukan</b> was similar to that of a <b>Viceroy</b>.</li> </ul> </li> </ul>	
<p><b>Economy</b></p>	<ul style="list-style-type: none"> <li>• <b>Artisans:</b> There were very <b>few castes of artisans</b>. Hence, artisans in the Ahom areas came from the adjoining kingdoms.</li> <li>• <b>New agricultural practices:</b> The Ahoms also introduced <b>new methods of rice cultivation</b>.</li> </ul>	
<p><b>Military Strategy</b></p>	<ul style="list-style-type: none"> <li>• <b>Mandatory military services:</b> Almost <b>all adult males served in the army during war</b>.</li> <li>• <b>Military Tactics</b> <ul style="list-style-type: none"> <li>○ <b>Deployment of spies</b> to monitor enemy movements and utilization of guerrilla warfare tactics was also used.</li> <li>○ A class of officials known as <b>Kataki acted as messengers</b> in the enemy camp.</li> </ul> </li> <li>• <b>Naval Strength:</b> The Navy constituted the <b>most important and powerful force</b> within the Ahom military system.</li> <li>• <b>Military Divisions:</b> The military division included an <b>elephant cavalry</b>, commanded by an officer named <b>Hatibaruah</b>.</li> </ul>	
<p><b>Religion</b></p>	<ul style="list-style-type: none"> <li>• Originally, Ahoms worshipped their <b>tribal gods</b>. But, in the <b>reign of Sib Singh (1714-1744)</b>, <b>Hinduism</b> became the <b>predominant religion</b>.</li> </ul>	
<p><b>Burial System (Charaideo Maidams)</b></p>	<ul style="list-style-type: none"> <li>• <b>About:</b> Charaideo Maidams are <b>mounds containing remains of royalty of the Ahom dynasty</b>. Mounds are located along the <b>foothills of the Patkai range</b>.</li> <li>• <b>Lachit Maidam:</b> It has remains of <b>Lachit Barphukan</b>. It was built in 1772 by <b>Swargadeo Udayaditya Singha</b> at Hoolungapara near Jorhat.</li> <li>• <b>World recognition</b> <ul style="list-style-type: none"> <li>○ Charaideo Maidams are commonly known as the <b>Pyramids of Assam</b>.</li> <li>○ They are included in the <b>tentative list of UNESCO's World Heritage</b>.</li> </ul> </li> </ul>	

<b>Art and Culture</b>	<ul style="list-style-type: none"> <li>• <b>Artists: Poets and scholars</b> were given <b>land grants</b>.</li> <li>• <b>Buranjis:</b> The buranjis are a <b>genre of historical chronicles</b> of Ahom dynasty. <ul style="list-style-type: none"> <li>○ These were <b>initially written in Tai-Ahom language</b> but later were mostly produced in <b>Assamese language</b>, presumably after the Ahoms converted to Hinduism</li> </ul> </li> <li>• <b>Translations of Sanskrit books:</b> Important works of Sanskrit were translated into the local language.</li> </ul>
<b>End of rule</b>	<ul style="list-style-type: none"> <li>• The rule of this dynasty ended with the <b>Burmese invasion of Assam</b> and the subsequent <b>annexation by the British East India Company</b> following the <b>Treaty of Yandaboo in 1826</b>.</li> </ul>

## 8.2. GEO-HERITAGE SITES

### Why in the News?

**Pandavula Gutta** and **Ramgarh Crater** were recognised as Geo-Heritage Sites

### About Geo-Heritage Sites

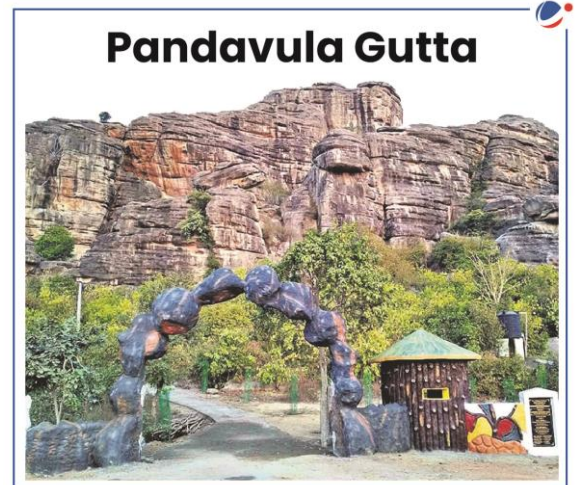
- Geo-heritage sites are **sites of rare and unique geological, geomorphological, paleontological, and stratigraphic significance**.
  - These includes caves, natural rock-sculptures, sediments, rocks, minerals, meteorites or fossils
- **Geological Survey of India (GSI)** recognizes, declares and maintains the Geo-heritage sites in India (refer map)

### About Pandavula Gutta


- Located in **Telangana (Jayashankar Bhupalpally district)** is considered to be **older than Himalayas**.
- Discovered in the year 1990.
- It **houses Palaeolithic Paintings** which depict:
  - **Wild life** (Bison, Antelope, Tiger, and Leopard etc.),
  - **Geometric shapes** (swastika symbol, circles and squares) and
  - **Weapons** (bows, arrows, sword and lancer etc.)
- These cave paintings offer a rare glimpse into **the prehistoric man's rock art identified on walls and ceilings of caves, rock shelters and isolated boulders**.

### About Ramgarh Crater (Ramgarh Astrobleme)


- **"Astrobleme"** is used to describe a **geological feature formed by the impact of a meteorite**.
- Located in **Rajasthan (Baran district)**, situated on the **old course of river Parbati**.
- **First discovered by the Geological Survey of India in 1869** and was recognised as a 'Crater' by the **Geological Society of London**.
- The now eroded crater in the Vindhyan Supergroup of sedimentary rocks **dates back to the Mesoproterozoic age** (roughly 1600 to 1000 million years ago)
- **One of the three Meteorite Impact Craters of India**
  - The other two being **Lonar in Maharashtra and Dhala in Madhya Pradesh**.
  - The **presence of coesite**, a high-pressure polymorph of Silicon dioxide (SiO<sub>2</sub>) **indicates that the site has an impact origin and confirms the meteorite strike**.
- **Diameter of around 3.2 kilometres** and has an **elevation of more than 200 metre**.
- The middle of the crater consists of a **10<sup>th</sup> Century temple** dedicated to lord Shiva **'Bhand Devara Temple'** (built in the style of Khajuraho).
  - Crater hill also comprises of **cave temples dedicated to a local goddess Kisnai and Annapurna**.



- Currently protected under **the Wildlife (Protection) Act, 1972** and its **Crater Lake (Pushkar Talab)** is notified under "wetland" under **Wetland (Conservation & Management) rules, 2017**.
- The Crater was **recognised** and added to the "Earth Impact Database" by the **Planetary and Space Science Centre (PASSC)** in Canada.
  - **The PASSC was established in Canada (2001)** and the "Earth Impact Database" provides information about confirmed meteoroid impact structures in the world



## Geological Survey of India



**Genesis:** Established in **1851** by **Thomas Oldham**, primarily to find Coal deposits for the railways.

**Ministry:** Ministry of Mines.

**Organisational Structure:** It is headed by a **Director General** along with Additional and Deputy Generals in six Regional offices of Lucknow, Jaipur, Nagpur, Hyderabad, Shillong and Kolkata

**Functions:**

- Creation and Updation of national Geo-scientific information and mineral resource assessment.
- It is the **authorized curator and repository of all the meteorites fall on the Indian soil** and presently possesses about 700 meteorites of different kinds.



**ENGLISH MEDIUM**  
**15 FEB | 5 PM**

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- 📖 Specific targeted content: oriented towards Prelims exam
- 📖 Doubt Clearing sessions and mentoring
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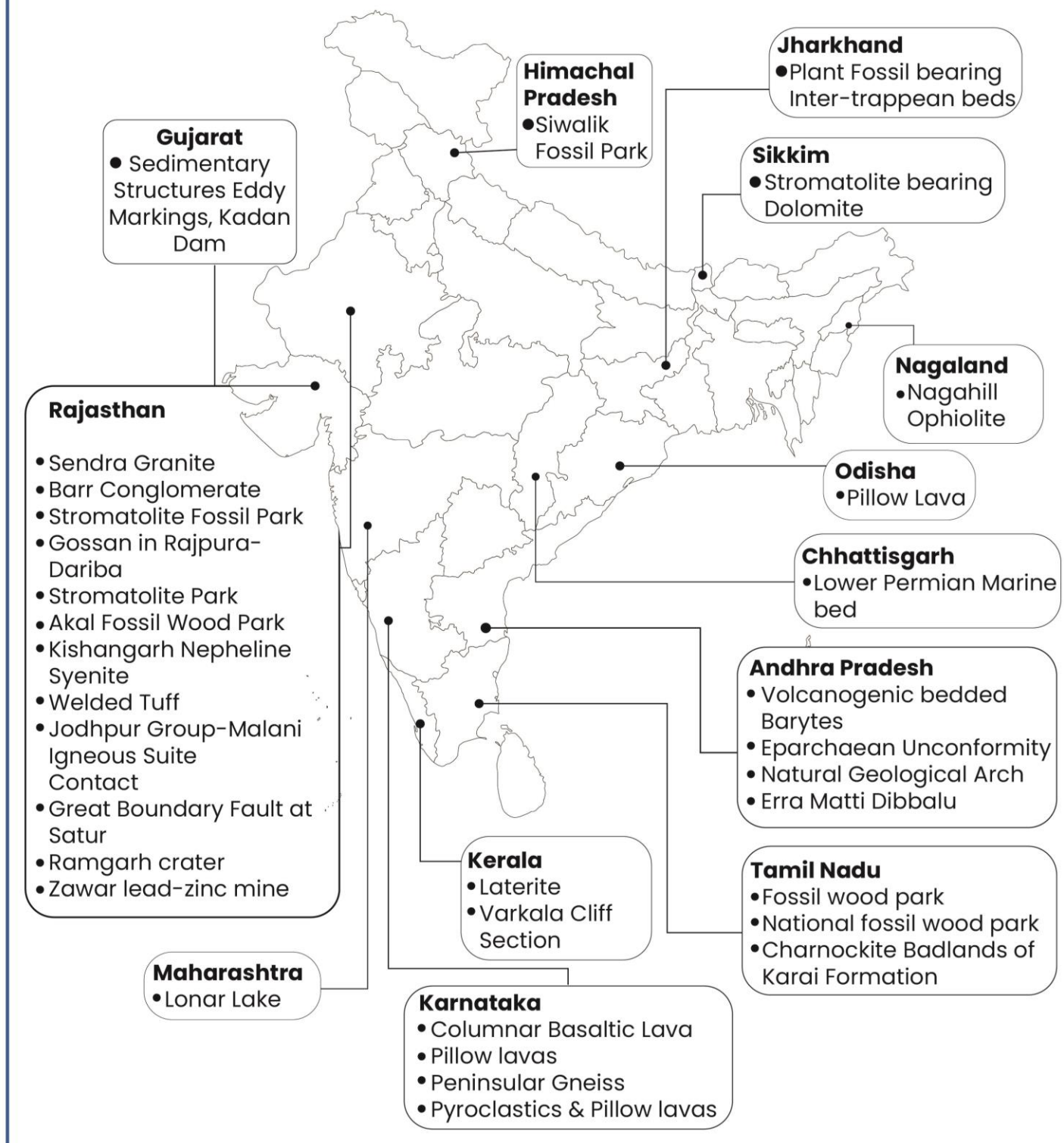
# One Year

# CURRENT AFFAIRS

## FOR PRELIMS 2023 IN 60 HOURS



## GEO-HERITAGE SITES OF INDIA



### 8.3. NEWS IN SHORTS

#### 8.3.1. GI TAG FOR 10 NEW PRODUCTS

- Geographical Indication (GI) tag was accorded to following products:

State	Product and Description
Odisha	<ul style="list-style-type: none"> <li>• <b>Cuttack Rupa Tarakasi (Silver Filigree)</b> <ul style="list-style-type: none"> <li>○ It was incorporated into <b>jewellery</b> around <b>3500 BCE</b> in Mesopotamia where</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>it is practiced even today as <b>Telkari work</b>.</li> <li>It reached Cuttack from <b>Persia through Indonesia</b>.</li> </ul>
Bengal	<ul style="list-style-type: none"> <li><b>Banglar muslin</b> which is a traditional handloom craft made of cotton.</li> </ul>
Andhra Pradesh	<ul style="list-style-type: none"> <li><b>Narasapur crochet lace products</b> were brought by missionaries to Narsapur.</li> </ul>
Madhya Pradesh	<ul style="list-style-type: none"> <li><b>Ratlam Riyawan Lahsun (Garlic)</b></li> </ul>
Assam	<ul style="list-style-type: none"> <li><b>Majuli Mask and Majuli Manuscript Painting.</b></li> </ul>
Tripura	<ul style="list-style-type: none"> <li><b>Risa Textile.</b></li> </ul>
Telangana	<ul style="list-style-type: none"> <li><b>Hyderabad Lac Bangles.</b></li> </ul>
Gujarat	<ul style="list-style-type: none"> <li><b>Kutch rogan craft</b> a.k.a. Nirona</li> <li><b>Ambaji White Marble</b> <ul style="list-style-type: none"> <li>formed when limestone is re-crystallised under the earth's crust.</li> </ul> </li> </ul>

- A **GI** is a sign used on products that have a **specific geographical origin** and possess qualities or a reputation that are due to that origin.
- **International Recognition:**
  - Under the **Paris Convention for the Protection of Industrial Property**, GI is covered as an element of **Intellectual Property Rights (IPRs)**.
  - Also covered under the **WTO's Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement**.

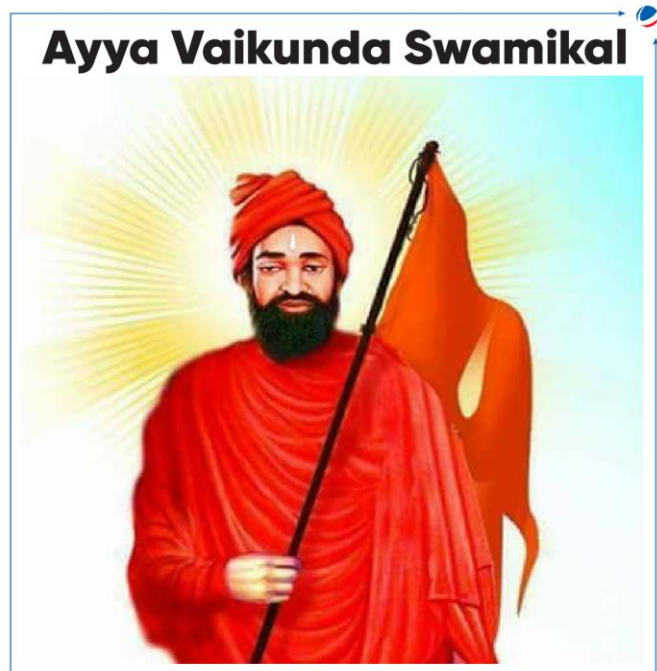
### 8.3.2. SIX HERITAGE SITES OF MADHYA PRADESH INCLUDED IN UNESCO'S TENTATIVE LIST

Sites on UNESCO's Tentative List	Description
<b>Gwalior Fort</b>	Completed in <b>8th century AD</b> by <b>Raja Surya Sena</b> , consisting of Man Mandir Palace, Gujari Mahal, Sas Bahu temples etc.
<b>Khooni Bhandara, Burhanpur</b>	<ul style="list-style-type: none"> <li><b>Underground water management system, built by Abdur Rahim Khan-i-Khanan</b> during Jahangir's reign. Based on <b>Persian qanat approach</b>.</li> </ul>
<b>Rock Art Sites of Chambal Valley</b>	Rock art in hilly areas of <b>Vindhyan, Satpura, and Kaimur ranges</b> .
<b>Bhojeshwar Mahadev Temple, Bhojpur</b>	<ul style="list-style-type: none"> <li><b>Lord Shiva temple</b>, built during <b>11<sup>th</sup> century</b> under <b>Raja Bhoj</b>.</li> </ul> Built in <b>Bhumija style</b> (evolved form of Nagara style during Paramara period).
<b>Gond Monuments of Ramnagar, Mandla</b>	Architectural complexes built by <b>Gond rulers</b> consisting of <b>Moti Mahal, Raibhagat ki Kothi, Begum Mahal</b> etc.
<b>The Historical Ensemble of Dhamnar</b>	Rock cut site consisting of <b>51 monolithic Buddhist caves (5<sup>th</sup>-7<sup>th</sup> century CE)</b> and <b>hindu temple complex (Dharmarajeshwara temple)</b> .

- Inclusion in tentative list is **first step towards nominating** a site for inscription on the **UNESCO's World Heritage List**.

- World heritage is designation for **places of outstanding universal value to humanity**.
- Currently, there are **42 UNESCO World Heritage Sites in India** (34 cultural, 7 natural and 1 mixed).

### 8.3.3. AYYA VAIKUNDA SWAMIKAL



- The Prime Minister, Shri Narendra Modi has paid tributes to Sri Ayya Vaikunda Swamikal on his birth anniversary
- **About Ayya Vaikunda Swamikal (Early 19<sup>th</sup> Century)**
  - **Birth:** Born in a poor Nadar family in village of Poovandan Thoppu, near **Kanyakumari (Tamil Nadu)**.
  - **Parents:** Ponnu Nadar and Veyilal Ammaiyaar.
- **Key Contributions**
  - **Among the Pioneer of Indian Renaissance:** His famous slogan was "**One Caste, One Religion, One Clan, One World, One God**" which makes all caste people to feel equality.
  - **Founded Ayyavajhi Sect:** Taught the virtue of non-violence, charity, tolerance and love among the people.
  - **Temple Reformation**
    - ✓ **Created new temples (Pathis and Nizhal Thankals)** for those who were denied permission to enter the temple.
    - ✓ **Introduced Thottu Namam**, encouraging priests to apply sacred paste on devotees' foreheads, regardless of caste.
  - **Social Initiatives**
    - ✓ Initiated the **Thuvayal Panthy program** to promote vegetarianism

- ✓ **Organized Samapanthi-bhojana** (community eateries)
- ✓ Undertook the digging of common wells, known as **Muthirikinarus**, to provide water access to lower castes who were barred from using upper caste wells.
- **Authored books:** Akila thiruttu; Arulnool; Ammamai

#### 8.3.4. NANA JAGANNATH SHANKARSETH

### Nana Jagannath Shankar Seth



- Maharashtra cabinet has recently decided to ask the Ministry of Railways to rename Mumbai Central station after Nana Jagannath Shankarseth.
- **Early life of Nana Jagannath Shankarseth (1803-1865)**
  - **Birth:** Born in a Brahmin family in **Murbad in Thane district**, Maharashtra.
  - **Father:** Shankar Murkute
  - **Mother:** Bhawanibai Murkute.
  - **Ideals and Influences:** He was greatly inspired by the merchant and philanthropist **Sir Jamsetjee Jeejeebhoy**.
- **Key Contributions**
  - **Architect of Mumbai:** He led major projects to plan buildings, streets, and avenues in Bombay. This earned him the title "architect" of Mumbai.
  - **Education Patronage:** He **donated family-owned land** for the establishment of schools, particularly emphasizing education for girls.

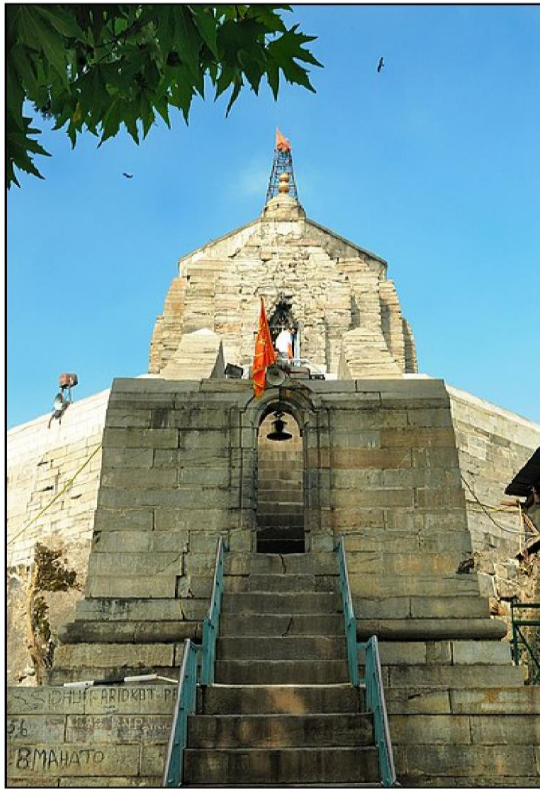
- ✓ He founded the **Native School of Bombay**, which later evolved into the prestigious **Elphinstone College in 1856**.
- **Cultural and heritage:** Played a significant role in **promoting the Dr. Bhau Daji Lad Museum** in Byculla, constructed, The **Bhawani Shankar Temple and a Ram temple**.
- **Railway Project:** He was member of the committee that gave impetus to the project for the **first train** in India that ran **between Boribunder and Thane on April 16, 1853**.
- **Political Contributions:** He was the first"
  - ✓ **Indian nominated to the Legislative Council of Bombay.**
  - ✓ **President of the Bombay Association.**
    - The association was founded in 1852 by notable figures like Naoroji Furdunji, Narryan DinanathJi, Dr. Bhau Daji, and Dadabhai Naoroji.
  - ✓ **Indian Member of Asiatic Society of Mumbai.**
    - The society was established in **established in 1804** by **Sir James Mackintosh** to promote **investigation and encouragement of Oriental Arts, Sciences and Literature.**
- **Legacy and influence**
  - Described as '**Architect of Modern India**' by the renowned scholar of economics, **Gangadhar Gadgil**.
  - **Influenced** freedom fighters like **Dadabhai Naoroji and Justice Ranade**, who adopted his vision of economic nationalism in their pursuit of India's independence.

#### 8.3.5. WORLD MONUMENTS FUND WATCH

- **The Eri (tank) network** in the Kazhuveli watershed region in **Tamil Nadu** is to be proposed for **nomination to the World Monuments Fund Watch 2025 program**.
  - **The World Monuments Watch** is a nomination-based program that connects local heritage preservation to global awareness and action.
- **About WMF**
  - It's the leading **independent organization** devoted to **safeguarding the world's most treasured places**.
  - **Headquarters in New York, also has an office in India.**
  - It has preserved **more than 700 sites in 112 countries**.

### 8.3.6. SHANKARACHARYA TEMPLE

#### Shankaracharya Temple



- PM has offered his reverence to the **Shankaracharya Hill** and the temple atop it, on his recent visit to Kashmir.
  - The hill located in the **Zabarwan Range**, houses the **Shankaracharya Temple**.
- **About the Temple**
  - The temple is **dedicated to Lord Shiva** and is located at a height of 1100 feet.
  - It is considered as the **oldest shrine for worship in Kashmir valley**.
  - The temple got its name from the visit of the philosopher and saint **Adi Shankaracharya**.
    - ✓ He propounded the **Doctrine of Advaita** and
    - ✓ He **established the four maths** namely Dwarka, Joshimath, Puri, and Sringeri.

### 8.3.7. KOCHRAB ASHRAM

- Prime Minister visited **Sabarmati Ashram** and inaugurated redeveloped **Kochrab Ashram on 12<sup>th</sup> March**.

- On 12<sup>th</sup> March 1930, Gandhiji started **Salt Satyagraha March or Dandi March** from Sabarmati Ashram to the coastal town of Dandi.
- At Dandi, Gandhiji broke the British government's salt law by gathering natural salt on the sea shore.
- **Kochrab Ashram in Ahmedabad** was the first Ashram established by **Mahatma Gandhi after coming to India from South Africa in 1915**.
  - **Jivanlal Desai**, a fellow lawyer, helped Gandhiji setup the Ashram.

### 8.3.8. GORSAM KORA FESTIVAL

- Recently, Gorsam Kora festival was concluded in the Tawang district of Arunachal Pradesh.
- **About Gorsam Kora festival**
  - An **annual festival** held at **Gorsam Chorten**, a 93 feet tall Stupa, built during 13th Century CE by a **local monk- Lama Pradhar**.
  - Theme (2024): **'Zero Waste Festival'**
  - Organized by **local community of Zemithang in collaboration with civil authorities**.
    - ✓ Zemithang Valley holds historical significance as **14th Dalai Lama found refuge upon his escape from Tibet in 1959**.
  - **Devotees including Bhutanese nationals** visit during the festival to observe virtuous occasion during **last day of first month of Lunar calendar**.

### 8.3.9. SANGEET NATAK ACADEMY (SNA) AWARDS

- **President of India** conferred SNA Fellowships and Awards for the years 2022 and 2023.
- **About SNA Awards**
  - Akademi awards are being **conferred since 1952**.
  - Symbolizes highest achievement in music, dance and drama.
  - **Awards in Hindustani and Carnatic music** were instituted in **1951**, even before SNA was set up and these were known as **Presidential Awards**.
  - Honour of **Akademi Fellow** carries purse money of **₹3 Lakh** while **Akademi Award** carries purse money of **₹1 lakh**, besides a **Tamrapatra and Angavastram**.
  - **SNA, setup in 1953**, is the apex body in the field of performing arts for the preservation and promotion India's intangible cultural heritage.



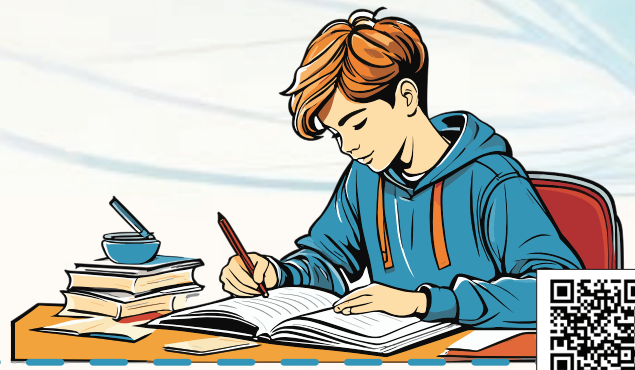
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# 9. ETHICS

## 9.1. HAPPINESS

### Introduction

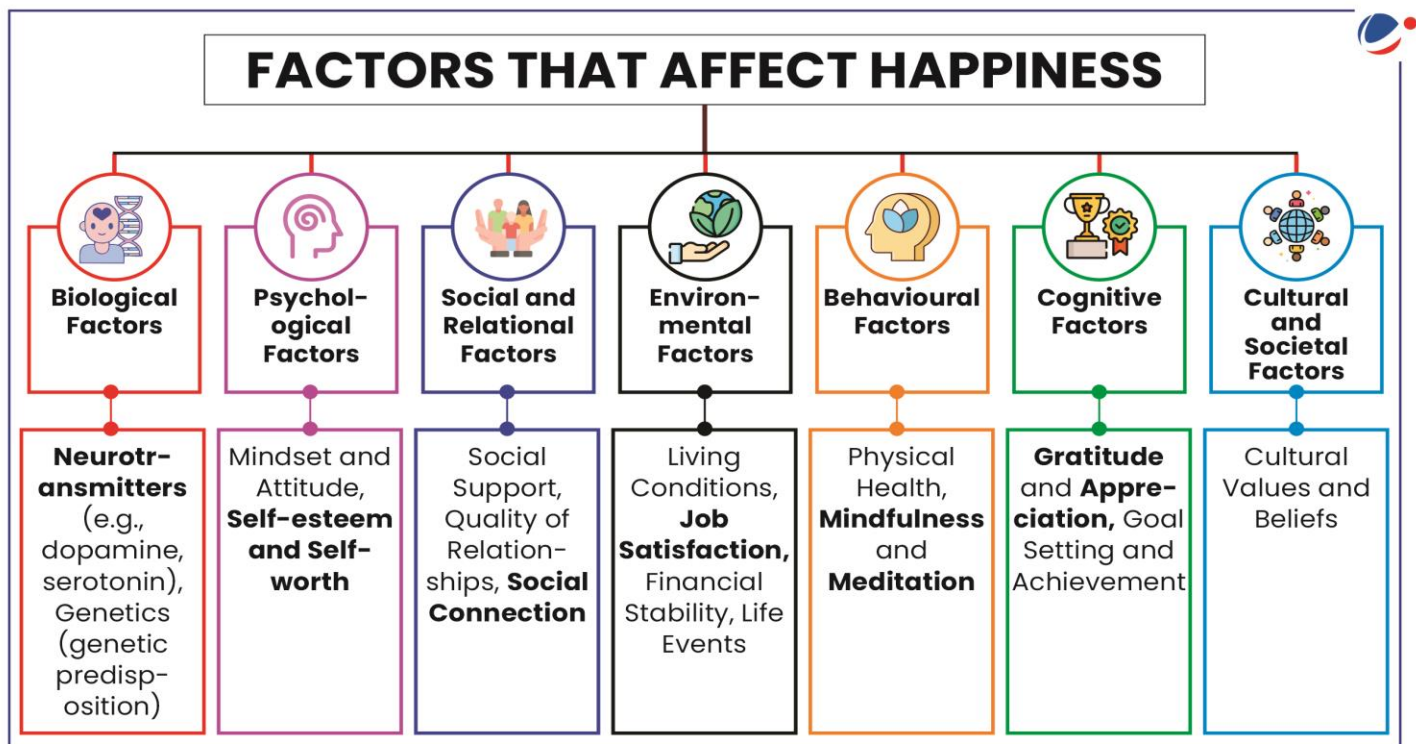
**UN Sustainable Development Solutions Network (SDSN)** in partnership with Gallup, and Oxford Wellbeing Research Centre released the **World Happiness Report (WHR) 2024**. Finland topped in the rank for the seventh successive year whereas India was ranked 126th out of 143 nations.

### What is the Happiness?

There is **no universally accepted definition of happiness**, however, Ananda, or pure bliss, is an idea deeply rooted in Indian culture. It represents a profound and transcendent state of happiness and well-being that goes beyond fleeting pleasures and is considered the ultimate goal of human existence.

### How does money affect happiness?

- **Financial security meets basic needs, but wealth has diminishing returns on happiness.** Material goods correlate weakly with true fulfilment.
- **Case Study:** Despite a significant increase in wealth in America during the latter half of the twentieth century, surveys revealed that the average level of happiness among Americans remained largely unchanged. Personal well-being or happiness increases substantially as income rises from extreme poverty to approximately \$20,000 annually, but the rate of increase slows significantly beyond an income of \$50,000.



### Different philosophical theories explaining happiness

- **Upanishadic tradition:** Ananda is one of the three essential attributes of Brahman, the ultimate reality, along with Sat (existence) and Chith (consciousness). These three aspects form the core of Brahman's nature and are often expressed as "Sat-Chit-Ananda." ( Taittiriya Upanishad).
- **Epicureanism (Epicurus):** Happiness was the complete absence of bodily and especially mental pains (Ataraxia), including fear of the Gods and desires for anything other than the bare necessities of life.
- **Buddhism:** Happiness is achieved through the cessation of desires and the practice of mindfulness and compassion (Karuna).
- **Eudaimonism (Aristotle):** True happiness comes from living a virtuous and fulfilling life, actualizing one's potential.
- **Utilitarianism (Jeremy Bentham, John Stuart Mill):** Happiness is the greatest good, and actions should maximize overall happiness for the greatest number.
- **Nihilism (Friedrich Nietzsche):** Happiness is an illusion, and individuals must create their own subjective meaning to find happiness.

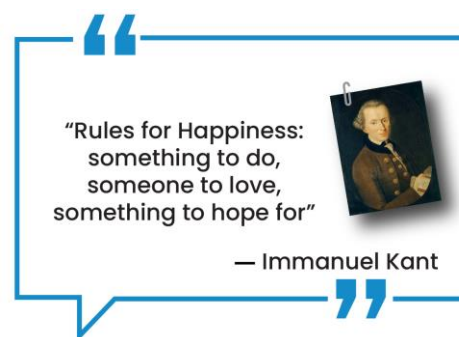
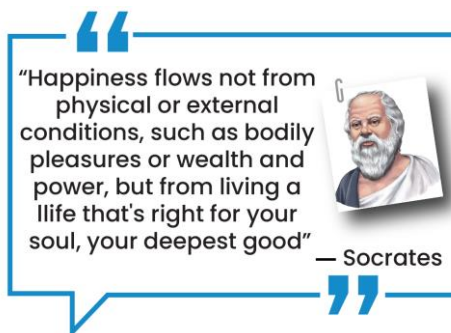
## Happiness: A Multifaceted Pursuit with Far-Reaching Impacts

Happiness is a fundamental human pursuit and plays a crucial role at various levels of human existence.

- **Individual-Level Benefits of Happiness:** Happiness is closely linked to improved mental health, increased productivity, and stronger, more satisfying relationships.
  - Studies show that happiness can lead to a 12% **boost in productivity** and is positively correlated with marital satisfaction.
- **Social-Level Impacts:** At the societal level, happiness fosters a sense of belonging and social cohesion, contributing to lower crime rates.
  - Happier communities also tend to exhibit **higher levels of civic engagement** and trust in political institutions.
- **National-Level Implications:** Happiness is associated with political stability, the adoption of sustainable practices, and economic growth.
  - Countries that have integrated "**Gross National Happiness**" schemes into their development plans have seen a boost in their economic performance.
- **Global Ramifications:** On an international scale, happiness is linked to greater global peace and cooperation, as well as more equitable distribution of resources and reduced deprivation.
  - The **Global Peace Index** suggests that countries with higher levels of happiness tend to score higher on measures of peacefulness and international collaboration.

### How do Ethical Values Cultivate Happiness?

- **Altruism and Compassion:** Ethical values that promote concern for others, such as altruism and compassion, have been shown to increase feelings of meaning, purpose, and overall well-being.
- **Integrity and Authenticity:** Living with integrity, by aligning our actions with our values, can foster self-respect, confidence, and a sense of authenticity. This tends to promote happiness and life satisfaction.
- **Fairness and Justice:** Upholding ethical principles of fairness, justice, and equality helps create a more harmonious and stable society, reducing sources of conflict, resentment, and unhappiness.
- **Self-Regulation and Discipline:** Ethical values that encourage self-discipline, impulse control, and emotional regulation can help people make healthier choices and manage stress more effectively.
- **Positive Relationships:** Ethical values that prioritize honesty, trust, and respect in our relationships tend to foster more meaningful, supportive, and mutually fulfilling connections.



#### Instant Gratification vs. Lasting Happiness

- Instant gratification **offers fleeting pleasure but fails to deliver sustained fulfilment.**
- **True happiness requires embracing delayed gratification**, developing patience, and investing in long-term pursuits that provide genuine and enduring rewards.

#### Check your Ethical Aptitude

In pursuing economic growth and development, many nations prioritize material prosperity over human well-being and sustainable practices. This approach often overlooks the broader determinants of happiness at individual, societal, and global levels.

In the context of above idea, answer the following questions

- Analyze the potential conflicts between traditional measures of development (e.g., GDP) and the multidimensional factors contributing to genuine happiness and flourishing.
- Propose a comprehensive framework that integrates economic, social, environmental, and ethical considerations to guide global development efforts toward fostering sustainable happiness for all.

## 9.2. BARE NECESSITIES AND SCARCE RESOURCES

### Introduction

Recently, the Supreme Court ordered all states and union territories to issue ration cards to 80 million migrants and unorganized workers under the National Food Security Act (NFSA) 2013. They need ration cards to claim government food grain, it is considered as a part of their basic need. However, sometimes Governments cannot fulfill basic needs in resource-scarce times presents one of humanity's most fundamental ethical dilemmas.

### Different Stakeholders involved in the fulfilment of bare necessities

Stakeholder	Role/Interests	Ethical issues.
<b>Individuals and Communities</b>	<ul style="list-style-type: none"> <li>Recipients of <b>essential resources and services.</b></li> <li>Survival with <b>good health and well-being.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Inequity and Unjust distribution</b> of resources.</li> <li>Denial of <b>human rights and dignity.</b></li> </ul>
<b>Government</b>	<ul style="list-style-type: none"> <li>Policymaking for fulfilment of necessities.</li> <li>Regulating <b>resource allocation.</b></li> <li>Ensuring economic growth and pursuing national goals.</li> </ul>	<ul style="list-style-type: none"> <li><b>Lack of transparency and accountability</b> in decision-making.</li> <li>Managing <b>fiscal constraints.</b></li> </ul>
<b>Civil Society</b>	<ul style="list-style-type: none"> <li>Providers of <b>aid and direct relief.</b></li> <li><b>Watchdog on government</b> and corporate actions.</li> <li><b>Filling the gap</b> in fulfilment of bare necessities.</li> </ul>	<ul style="list-style-type: none"> <li>Dependence on <b>external funding</b> and potential for bias.</li> <li><b>Priority to urgent needs</b> rather than focus on long-term development.</li> </ul>
<b>Corporations</b>	<ul style="list-style-type: none"> <li>Influence <b>over resource uses and employment opportunities.</b></li> <li>Fulfilling <b>corporate social responsibility.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Overconcentration and overexploitation</b> of resources</li> <li>Environmental degradation.</li> </ul>
<b>International Organizations</b>	<ul style="list-style-type: none"> <li>Promoting <b>Universal human rights.</b></li> <li><b>Reducing inequalities</b> and ensuring fulfillment of bare necessities across the globe.</li> </ul>	<ul style="list-style-type: none"> <li>Slow bureaucratic process</li> <li><b>Unequal power dynamics</b> between nations</li> </ul>

### What are Bare Necessities?

Bare necessities are the **fundamental requirements** that are **necessary for human survival** and well-being. These needs are **essential for maintaining life** and ensuring that individuals can function and thrive in their daily lives.

They are not universally defined and vary due to regional, social, economic, and political differences. Economic Survey 2020-21 introduced Bare Necessities Index (BNI) which used 26 indicators based on **five dimensions – water, sanitation, housing, micro-environment and other facilities.**

### Why government is responsible for providing bare necessities?

- Social Contract theory** is about what kind of relationship a government should have with its citizens for instance **citizens restrict certain freedoms** in exchange for public services and security.
- Constitutional mandate:** The Constitution of India mandates the government to fulfil basic necessities and aspirations of its citizens.
  - For instance, **Article 39(a)** requires the State to secure for its citizens the right to an adequate means of livelihood while **Article 47** envisions raising level of nutrition and standard of living.
  - The **Supreme Court has increased the scope of fundamental right.** Ex. Right to life has been expanded to include Right against the adverse effects of climate change, Right to Food, etc.
- Expanding Nature of rights:** Laws have evolved with the needs of the populace to increase the threshold of bare necessities. For instance, **Right to Education, Right to Information, etc**
- International commitments:** aimed at fulfilling the basic needs of its citizens such as the **Sustainable Development Goals (SDGs) set forth by the United Nations.**



- **Public goods:** The government is capable of providing basic necessities that benefit society as a whole, such as clean water and sanitary infrastructure.

#### What are the Ethical Approaches for fulfillment of bare necessities by the government?

- **Justice-based approaches:** Ensuring fair distribution of scarce resources which is as equitable as possible, and minimizing exploitation.
- **Utilitarianism:** Prioritize resource allocation based on need and potential impact, aiming to maximize the benefits derived from limited resources.
- **Capability Approach:** Prioritize enhancing individuals' capabilities to access education, healthcare, and other essential services, empowering them to overcome poverty and deprivation.
- **Deontology:** Focus on respecting and protecting human rights.
- **Rights-Based Approach:** Recognizes basic necessities as fundamental human rights and calls for governments and institutions to fulfil their obligations to fulfill these rights.

#### Ways to balance between bare necessities and scarce resources

- **Global public goods:** The COVID-19 pandemic, refugee crises, climate change—these global problems have shown the need for public goods at the global level.
- **Prioritization and efficient allocation:** Encourage practices that reduce resource wastage, are sustainable, and promote harmony between nature and human activities.
  - Also, resource allocation should focus on the needs of the marginalized and vulnerable population as envisaged by Gandhiji's Sarvodaya.
- **Principles to define bare necessities:** For defining bare necessities, the principle of provisioning of public goods can be utilized to identify the core set of basic necessities.
  - The Netherlands provides a good example of defining the bare necessities through the provision of public goods; these goods should be socially just, economically efficient, and consistent with democratic principles.
- **Technological innovation:** Advancement and integration of technology in resource management can help in spreading limited resources and their effective utilization.
- **Convergence of Resources:** Effective resource management requires collaboration between different levels of government, Civil societies, corporate social responsibility fund of industries and international institutions.

The test of our progress is not whether we add more to the abundance of those who have much; it is whether we provide enough for those who have too little.



— Franklin D. Roosevelt

#### Check your ethical aptitude

The government is providing a new type of health insurance cards of up to 5 lakhs. The program has the potential to benefit a large section of society by providing them security via reducing the cost of health and also promoting the right to health. While the program has been successful in protecting the poor, critics argue that the increasing financial burden strains the government's budget, potentially limiting resources for other essential services.

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

- Discuss various stakeholders and their interests involved.
- Discuss how the government can balance between bare necessities and scarce resources in such situations.

## 9.3. RELIGIOUS BELIEFS AND EVOLVING SCIENTIFIC ADVANCEMENTS

### Introduction

The relationship between religion and science is quite dynamic. Interaction between them has long been a source of tension, debate, and often, conflict. Both provide different approaches to understanding the world and reality. Religious ideas are often challenged by new realms of knowledge and scientific advancements. Despite these challenges, religion holds an integral and constructive role in people's lives. This dichotomy begs a question, can religious beliefs coexist harmoniously with scientific progress?

### Understanding Religious Belief System

- **Based on Faith:** A religious belief system is shaped by the faith of the person. Faith involves a deep, personal conviction in the unseen, the transcendent, or the divine.


- It is a **foundational element** that **provides meaning, purpose**, and a **sense of connection** to the sacred.
- **Brought in practice by collective wisdom:** These beliefs often stem from **ancient texts, oral traditions, and spiritual experiences** that have shaped the collective consciousness of civilizations.

### Scientific Advancements Challenging Religious Belief

Scientific ideas have a significant transformative impact on long-held beliefs. This can be showcased in many areas of life-

- **Life and death:** The very notion of bringing life into this world is being challenged by the advancement in the sphere of biotechnology.
  - **Genome editing** can be used to change a baby's genetic characteristics and cloning of animals has tampered the belief that life and death are in the hand of God.
- **Evolution:** The theory of evolution by Charles Darwin (promoted the idea of Natural Selection) discredits several **religious beliefs** about the **origins** and development of human life on Earth.
- **Space:** Big Bang theory suggests that the universe originated from a singular event approximately 13.7 billion years ago.
  - It is contrary to religious belief which propagates different theories regarding the formation of the Universe, particularly Earth.

“ Gravity explains the motions of the planets, but it cannot explain who sets the planets in motion ”




— Isaac Newton

### Scientific Enquiry: Limitation and Boundaries

- **Limitations of Empirical Evidence:** The basic foundation stone of Science, empirical evidence, has led to several new discoveries and inventions. However, there are certain limitations in it.
  - For instance, various human-specific elements such as **consciousness, spirituality** etc. cannot be empirically measured or compared by scientific enquiry.
    - ✓ These elements involve **personal experience** and **subjective interpretation**.
- **Ethics and conduct are not the primary focus:** Scientific developments may provide information about the **cause or consequences of certain actions or behaviours**, but they cannot explain **moral values** or **ethical principles** associated with them.
  - Advancements in the sphere of biotechnology have also raised complex ethical questions about the boundaries of genetic engineering and its potential implications for human evolution and the natural order.
  - Also, Scientific developments are not able to answer a lot of questions or mysteries such as the **nature of the soul, the existence of an afterlife**, or the **ultimate purpose of human existence**.

“ There may be a conflict between softminded religionists and tough-minded scientists, but not between science and religion ”

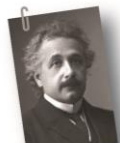


— Martin Luther King, Jr.

### Way Forward: Reconciling Faith and Reason

- **Adopting Intellectual Humility:** It involves recognizing that there are gaps in one's knowledge and that one's current beliefs might be incorrect.
  - Rigidity or intolerance on either side can stifle intellectual growth and impede the pursuit of truth.
- **Dialogue and Cooperation:** It can be guided by the humanistic principles of inclusivity, respect for diversity, and the preservation of cultural heritage.
  - Scientific community must approach religious beliefs with cultural sensitivity and an appreciation for their profound impact on individuals and societies.
    - ✓ For instance, the ancient Greek philosopher Aristotle, while revered for his contributions to scientific thought, also believed in the existence of an "Unmoved Mover" – a concept that aligned with the notion of a divine creator.
  - Religious institutions should not dismiss scientific findings outrightly, they should explore opportunities for reinterpreting religious texts and traditions in light of new evidence.

“ Science without religion is lame, religion without science is blind ”



— Albert Einstein

- **Developing Critical Minds:** A balanced and nuanced exploration of religious beliefs and scientific advancements in curricula, educators can equip students with the critical thinking skills necessary to navigate this conflict with wisdom and empathy.

**Check Your Ethical Aptitude**

A space company in the US is providing unique services in which human remains (ashes) are stored in an Aluminium capsule and they are sent into orbit near the Moon. A native tribe in the US has raised concern regarding the same. They argue that this would turn the Moon into a graveyard, impacting their religious customs. On the other hand, the Company argues that, it is the individual's right and choice as space is a collective good.

**Based on the given case study answer the given questions.**

- Identify the ethical dilemmas associated with this case.
- If you are given the task to resolve the above issue as a government arbitrator, then whose argument should be given Priority in your opinion-Company or the Native tribe?

**HEARTIEST**

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**AIR**

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**मोहन लाल**

**AIR**

**7**



**ANMOL RATHORE**

**AIR**

**9**



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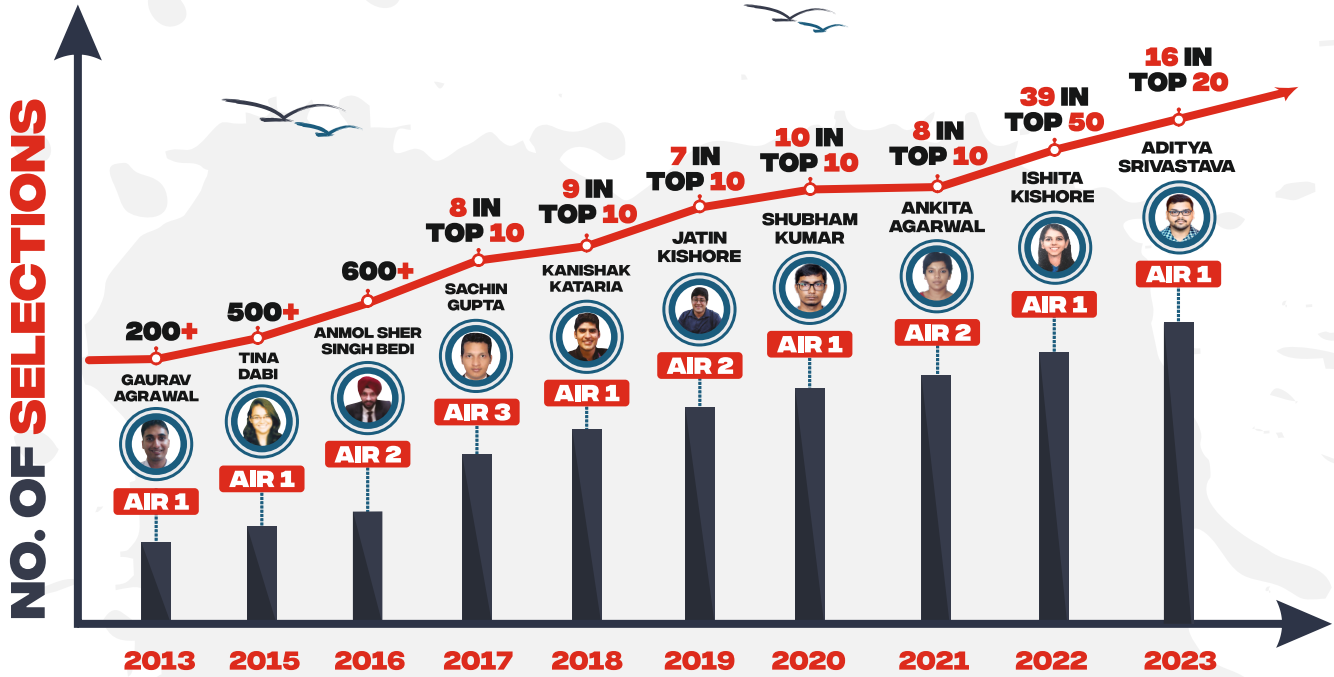
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# 10. SCHEMES IN NEWS

## 10.1. PRADHAN MANTRI ANUSUCHIT JAATI ABHYUDAY YOJNA

### Why in the News?

Ministry of Social Justice and Empowerment inaugurated and laid the foundation stone for several residential hostels across various states and central institutes under PM-AJAY.

### Pradhan Mantri Anusuchit Jaati Abhyuday Yojna (PM-AJAY)

Objectives	Salient features
<ul style="list-style-type: none"> <li>• <b>Reduce poverty of scheduled caste (SC) communities</b> by creating employment opportunities</li> <li>• <b>Improve socioeconomic developmental indicators</b> of the SC community.</li> <li>• <b>Increase literacy and encourage enrolment of SCs in schools and higher educational</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Ministry:</b> Ministry of Social Justice and Empowerment</li> <li>• <b>Launch year:</b> 2021-22</li> <li>• <b>Beneficiary:</b> Scheduled Caste Community.               <ul style="list-style-type: none"> <li>○ <b>Background:</b> PM- AJAY is a merged scheme of <b>03 Centrally Sponsored Scheme</b> namely <b>Pradhan Mantri Adarsh Gram Yojana (PMAGY), Special Central Assistance to Scheduled Castes Sub Plan (SCA to SCSP) and Babu Jagjivan Ram Chhatrawas Yojana (BJRCY)</b> for better for convergence of <b>public money and optimal utilization of resources.</b></li> </ul> </li> <li>• <b>Scheme's Sub- Components:</b> <ul style="list-style-type: none"> <li>○ Development of SC dominated villages into <b>"Adarsh Gram"</b> (erstwhile PMAGY)</li> <li>○ <b>Grants-in-aid for District/State-level Projects</b> for Socio-Economic betterment of SCs. (erstwhile SCA to SCSP).</li> <li>○ <b>Construction/Repair of Educational Hostels</b> for SC students (Boys and Girls) (erstwhile BJRCY)</li> </ul> </li> <li>• <b>About Adarsh Gram:</b> An 'Adarsh Gram' would have <b>all the infrastructure facilities and basic services</b> that are necessary for a <b>dignified living.</b> <ul style="list-style-type: none"> <li>○ <b>Eligibility:</b> Villages having <b>&gt;40% SC population</b> and a <b>total population ≥ 500;</b> <ul style="list-style-type: none"> <li>✓ <b>once these villages are covered,</b> such villages have less than or equal to 40% of the SC population but <b>overall a high number of persons belonging to SCs, shall also be taken up.</b></li> </ul> </li> <li>○ <b>Developmental Indicators:</b> <b>50 socioeconomic developmental monitorable indicators</b> identified under <b>10 domains.</b> E.g. education, health, etc.</li> </ul> </li> <li>• <b>About grants-in-aid for District/State-level Projects:</b> Socio-economic development of SCs through grants for the <b>creation of assets for beneficiaries/households, skill development, and infrastructure.</b> <ul style="list-style-type: none"> <li>○ <b>Eligibility:</b> <b>No fixed income limits for beneficiaries.</b> However, <b>priority is given to families having annual income not more than Rs. 2.50 lakh per;</b> SHGs having <b>SC majority members</b> will also be eligible.</li> <li>○ <b>Special Provisions for SC Women and Disabled</b> <ul style="list-style-type: none"> <li>✓ <b>Up to 15 % of the total Grants released</b> to the States/UTs will be utilized exclusively on viable income-generating economic development schemes/ programmes for SC women.</li> <li>✓ <b>Participation of at least 30% of women</b> candidates may be ensured in the skill development programmes.</li> <li>✓ At least 10% of the total funds are used for skill development</li> <li>✓ States/UTs may also promote Scheduled Caste Women Cooperatives engaged in the production and marketing of consumer goods and services.</li> </ul> </li> <li>○ <b>Special Provisions for North Eastern States:</b> 2% of the total budget allocation for the scheme component.</li> <li>○ <b>Projects for special tutoring of the children</b> of target group studying in class 9th to 12th can be taken under the Scheme.</li> <li>○ <b>Developmental Indicators of skill development program:</b> The overall placement of the trained persons should <b>be 70% in wage/self-employment.</b></li> </ul> </li> </ul>

- **About Construction/Repair of Educational Hostels for SC students:** The construction of hostels would **encourage students belonging to SC to attain quality education**; The objective is **containment and reduction** of the dropout rate of SC students, especially girls.
  - **Eligibility:** **Top-ranked higher educational institutions funded** by the Centre/State/UT Governments.
    - ✓ Similarly, **schools funded by the Centre/State/UT Governments and recommended by the Ministry of Education shall also be eligible.**
  - **Funding pattern:** The scheme is **100% funded by the Central Government**. However, the States/UTs are free to provide **additional funds from their own resources if they so desire.**
  - **Implementing Agencies:** Districts/ State Governments/Union Territory Administrations as well as Central/State Universities/Institutions would be the Implementing agencies for this component.
    - ✓ Implementing agencies to send proposals online through PMAJAY portal

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# Places in News: India

## Jantar Mantar (Ujjain, Madhya Pradesh)

- Vikramaditya Vedic Clock which is based on Indian 'panchang' calculations was inaugurated.

## Kochrab Ashram (Ahmedabad)

- Redeveloped Kochrab Ashram (the first Ashram established by Mahatma Gandhi after coming to India from South Africa in 1915) was inaugurated

## Guna (Madhya Pradesh)

- GAIL (India) Limited sets up India's first Small Scale Liquefied Natural Gas (SSLNG) unit at Vijapur, Madhya Pradesh

## Nagpur (Maharashtra)

- India's first City-Specific Zero Carbon Buildings Action Plan (ZCBAP) launched in Nagpur.

## Hyderabad (Telangana)

- World Economic Forum (WEF)'s Centre for Fourth Industrial Revolution (C4IR) inaugurated.

## Patna (Bihar)

- India's first National Dolphin Research Centre (NDRC) inaugurated in Patna.

## Sela tunnel (Arunachal Pradesh)

- Prime Minister inaugurated strategically important Sela tunnel in Arunachal Pradesh.

## Pandavula Gutta (Telangana)

- Geological Survey of India (GSI) emphasises preserving Geoheritage sites at Pandavula Gutta.

## Kazhuveli watershed region (Tamil Nadu)

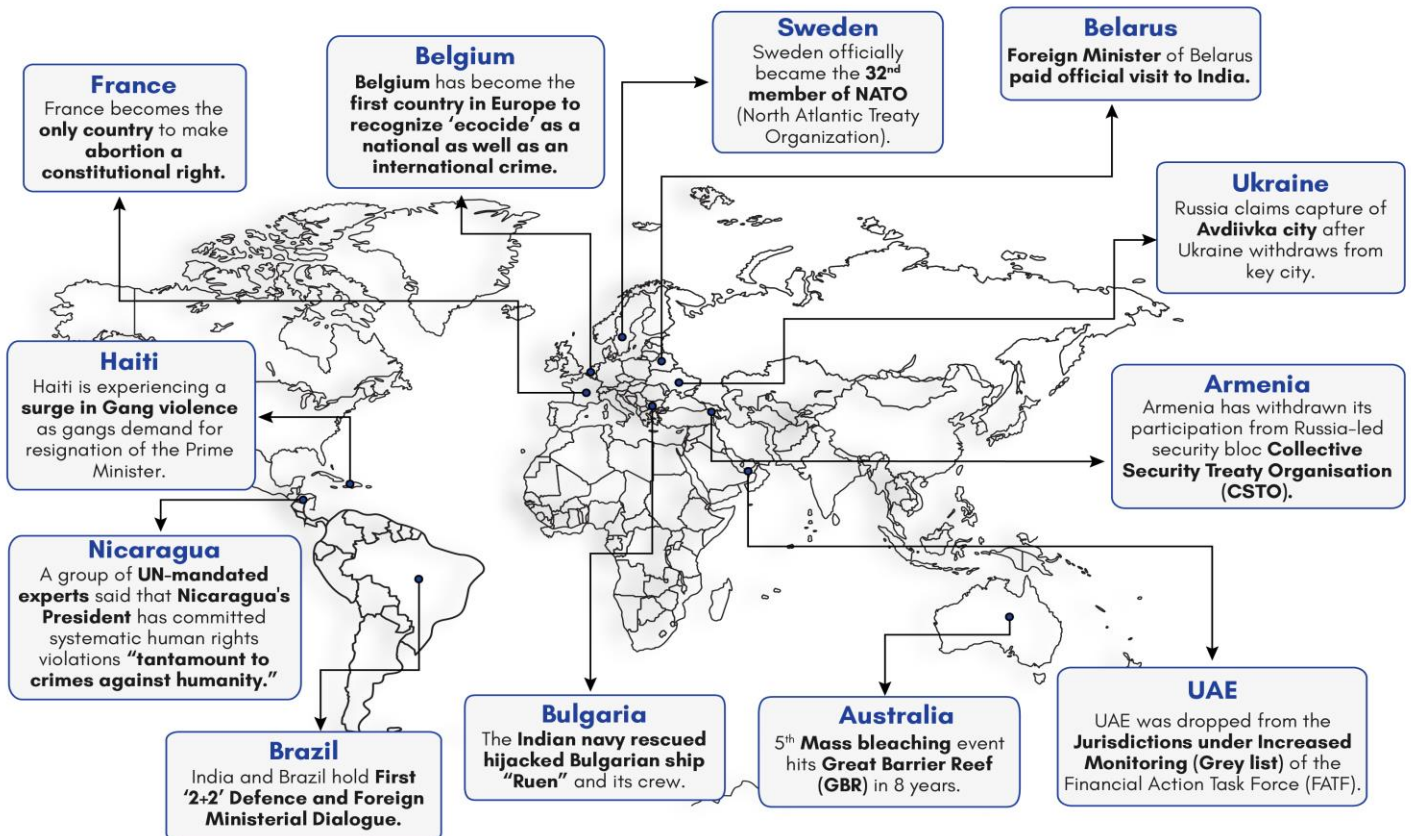
- The Eri (tank) network is to be proposed for nomination to the World Monuments Fund Watch 2025 program.

## Thoothukudi (Tamil Nadu)


- PM laid the foundation stone of Kulasekarapattinam spaceport




**Note:** Due to a typographical error in November Monthly Current Affairs 2023, the place marked in Gujarat was given as Dhordo. The correct information is "Ahmedabad, Gujarat. Declared Ghol Species as the state fish at the Global Fisheries Conference India 2023."

# Places in News: World



# Personalities In News

Personality	About	Ethical Values Exhibited by the Personality
 <p><b>Bhima Nayak</b></p>	<ul style="list-style-type: none"> <li>Recently, Government paid tribute to Great Tribal Leader Bhima Nayak.</li> <li><b>About Bhima Nayak</b> (sometimes spelled as <b>Bhima Naik</b>) <ul style="list-style-type: none"> <li>Resident of Dhaba Bawdi in <b>Badwani district of Madhya Pradesh</b>.</li> <li><b>Prominent leader of Bhils of Nimar</b>.</li> <li>First revolutionary to get <b>punishment of Kalapani</b> at the age of just 17 and died in 1876.</li> </ul> </li> <li><b>Contributions</b> <ul style="list-style-type: none"> <li>Took part in <b>Uprising of 1857 against British Raj</b> raising an <b>anti-British force</b> by bringing in men from Bhil, Bhilala, Mandoi, and Naik tribes, and <b>collaborated with Tantia Tope</b>.</li> <li>Known as <b>Robinhood of Nimar</b> as he looted British treasury and distributed same amongst poor people.</li> <li>Important role in <b>1857 Ambagani War</b>.</li> </ul> </li> </ul>	<p><b>Altruism and Valour</b></p> <ul style="list-style-type: none"> <li>He demonstrated a profound commitment to improving the welfare of his community, particularly evident in his efforts to redistribute wealth among the impoverished.</li> <li>His leadership in the anti-colonial struggle reflects a strong value of resisting injustice and fighting for the rights and freedom of his people.</li> </ul>
 <p><b>Sambhudhan Phonglo</b></p>	<ul style="list-style-type: none"> <li>Government paid tribute to the Janjatiya Nayak Sambhudhan Phonglo.</li> <li><b>About Sambhudhan Phonglo</b> <ul style="list-style-type: none"> <li>He was an Indian <b>freedom fighter</b> from <b>Longkhor in North Cachar Hills</b> of Assam's present-day Dima Hasao District.</li> </ul> </li> <li><b>Contribution</b> <ul style="list-style-type: none"> <li>His concern over <b>British annexation of Cachar in 1832, led him to revolt</b> against the regime.</li> <li>He understood the Britisher's '<b>divide and rule</b>' policy and <b>organized the Damasi youth</b> to deal with it.</li> <li>He organized his army and <b>attacked the British army led by Major Boyad</b> and killed him.</li> </ul> </li> </ul>	<p><b>Unity and Leadership</b></p> <ul style="list-style-type: none"> <li>He valued unity, especially in his efforts to bring together diverse groups to stand against colonial oppression, showing the importance of solidarity in the face of division.</li> <li>His ability to organize and lead his community against the British showcases a deep commitment to leading by example.</li> </ul>
 <p><b>Govind Ballabh Pant</b></p>	<ul style="list-style-type: none"> <li>Shri Govind Ballabh Pant's death anniversary has been commemorated on 7th March.</li> <li><b>About Govind Ballabh Pant</b> <ul style="list-style-type: none"> <li>He was a <b>freedom fighter</b> and served as <b>1<sup>st</sup> Chief Minister of Uttar Pradesh</b>.</li> </ul> </li> <li><b>Contributions</b> <ul style="list-style-type: none"> <li>Participated in <b>movements like Civil- disobedience, Quit India</b>, etc.</li> <li>Represented <b>Ramprasad Bismill, Ashfaqulla Khan</b> and other revolutionaries involved in the <b>Kakori case (1925)</b>.</li> <li>As a <b>Union Home Minister</b>, played key role in <ul style="list-style-type: none"> <li>✓ <b>Reorganisation</b> of States along linguistic lines.</li> <li>✓ <b>Establishment</b> of Hindi as an <b>official language</b> of the Union government and a few states.</li> </ul> </li> </ul> </li> <li><b>Awards:</b> Bharat Ratna (1957)</li> </ul>	<p><b>Justice and Public Service</b></p> <ul style="list-style-type: none"> <li>His legal representation of revolutionaries and active participation in movements for India's independence highlight his value for advocating freedom and justice.</li> <li>His contributions in governance and policy-making exemplify a life dedicated to public service and nation-building, focusing on creating a unified and democratic India.</li> </ul>

 <p><b>Potti Sriramulu</b></p>	<ul style="list-style-type: none"> <li>Recently, <b>birth anniversary</b> of <b>Potti Sriramulu</b> was observed.</li> <li>He was an <b>ardent Gandhian, eminent social reformer &amp; activist.</b></li> <li><b>Key Contributions:</b> <ul style="list-style-type: none"> <li>He took part in the Indian Independence Movements such as <b>Salt Satyagraha (1930), Individual satyagraha (1940), Quit India movement (1942) etc.</b></li> <li>He undertook three fasts, during 1946 to 1948, in support of <b>Dalits to enter temples.</b></li> <li>He died after <b>58 days of fasting</b> in support of creating a separate <b>Andhra from Madras Presidency.</b> He is revered as '<b>Amarajeevi</b>' for his supreme sacrifice for the <b>cause of people of Andhra.</b></li> </ul> </li> </ul>	<p><b>Non-Violence and Equality</b></p> <ul style="list-style-type: none"> <li>His use of hunger strikes as a form of protest embodies the value of non-violence and peaceful demonstration in seeking political and social change.</li> <li>His activism for the rights of Dalits and advocacy for linguistic states are rooted in a deep value for equality and inclusivity.</li> </ul>
 <p><b>Sher Singh Shah</b></p>	<ul style="list-style-type: none"> <li>He was a freedom fighter born in <b>Rudraprayag district of Uttarakhand.</b> <ul style="list-style-type: none"> <li>His father's name is <b>Padam Singh Shah,</b> and his mother's name is <b>Devki Devi.</b></li> </ul> </li> <li><b>Contribution</b> <ul style="list-style-type: none"> <li>He secretly <b>spread awareness</b> about the freedom struggle.</li> <li>He took an <b>oath in the Lalita Mai temple</b> in Nala, declaring that he would serve his country for his entire life.</li> <li>He led Quit India movement(1942) from <b>Kedar Ghati (Uttarakhand)</b></li> <li>He fought against the British regime at Kasaragod and Barmwadi</li> </ul> </li> <li><b>Awards:</b> Government of India honoured him with a Copper Plate in 1972.</li> </ul>	<p><b>Patriotism and Perseverance</b></p> <ul style="list-style-type: none"> <li>His lifelong dedication to India's freedom struggle showcases his profound patriotism and love for his country.</li> <li>His continuous fight against British rule, despite the risks and challenges, reflects a strong value of perseverance and resilience.</li> </ul>
 <p><b>Phanindra Nath Ghosh</b></p>	<ul style="list-style-type: none"> <li><b>Birth Anniversary</b> of Phanindra Nath Ghosh was celebrated,</li> <li><b>About</b> <ul style="list-style-type: none"> <li>Born in <b>Serampore in the Hooghly district of West Bengal,</b> Shri Ghosh was the son of Charuchandra Ghosh.</li> </ul> </li> <li><b>Contributions:</b> <ul style="list-style-type: none"> <li>His <b>leadership steered the revolutionary</b> movement across the <b>Hooghly district.</b></li> <li>He Joined the <b>Yugantar revolutionary party</b> alongside <b>J.N. Lahiri.</b></li> <li>Became an active member of the "<b>Gupt Samity</b>" in <b>Serampore.</b></li> <li>Played <b>a pivotal role during the Quit India Movement in 1942.</b></li> <li>Was deeply <b>committed to Gandhiji's philosophy.</b></li> </ul> </li> <li><b>Awards:</b> Government of India honoured him with a Copper Plate in 1972.</li> </ul> <p><b>NOTE:</b> Please do not confuse this personality with Phanindra Nath Ghosh who was approver of hanging of Bhagat Singh, Sukhdev and Rajguru and who was also murdered by revolutionary Baikuntha Shukla.</p>	<p><b>Courage of Conviction and Commitment to Social Change</b></p> <ul style="list-style-type: none"> <li>His leadership in the revolutionary movement against British rule demonstrates his courage to stand firm in his beliefs and to fight for them, despite potential consequences.</li> <li>His active participation in movements for India's independence and adherence to Gandhian principles reflect a deep commitment to social change.</li> </ul>

# UPSC TOPPERS PREPARATION APPROACH & STRATEGIES

*Insights from Toppers' Talk and Answer Scripts*



**Ishita Kishore**  
**Rank 1, 2022**

Ishita Kishore, the UPSC topper of 2022, serves as a remarkable inspiration for her unwavering determination and relentless efforts making her as a beacon of motivation for aspiring candidates. Through her methodical preparation approach, she emerged triumphant in the esteemed Civil Services Examination securing top rank. Ishita extensively relied on VisionIAS Mains test series to refine her answer writing abilities. To gain further insights into Ishita's answer writing approaches, kindly scan the QR code provided.

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# UPSC CSE TOPPERS 2022



**Waseem  
Ahmad Bhat**



Waseem Ahmad Bhat, an exceptional achiever who secured an All India Rank 7 in his third attempt in the UPSC Civil Services Examination 2022. He also achieved All India Rank 225 in his first attempt in 2020 and currently, he is training as an Assistant Commissioner Income Tax.

Waseem was a student of the **VisionIAS Foundation Course**, Batch in 2019.

Hailing from Doru Shahabad, Anantnag, Jammu & Kashmir, he completed his schooling in Anantnag and holds a degree in Civil Engineering from NIT Srinagar.

Waseem opted for **Anthropology** as his optional subject. His topper's talk covers vital topics such as preparing for the **changing pattern of Prelims**, essay writing and strategy, writing **quote-based essays**, utilizing topper's answer scripts for preparation, and **effective revision strategies**.

TOPPERS' TALK



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**Aniruddh  
Yadav**



Aniruddh Yadav, a remarkable achiever who secured an All India Rank 8 in his fourth attempt in the UPSC Civil Services Examination of 2022.

Aniruddh opted for **Anthropology** as his optional subject. He completed his dual degree course in Biochemical Engineering & Biotechnology from IIT Delhi.

His topper's talk covers crucial aspects such as **creating a schedule** and **subject-wise timetable**, honing answer writing skills through topic-based **practice**, **mastering the structure** and format of answers (Introduction, Body, Conclusion), **managing time effectively** during answer writing practice, and preparing **topic-wise notes** with the help of syllabus analysis and previous year questions.

TOPPERS' TALK



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**Siddharth  
Shukla**



Siddharth Shukla, belongs to Uttar Pradesh. He completed his BA in History (H) from Delhi University, which was also his optional subject.

He displayed exemplary resilience by appearing in the exam for the fourth attempt and secured AIR 18 in 2022.

The preparation strategy reflected in his talk and answer scripts include the strategy for Essay, **efficient use of PYQs**, **notes making**, among others.

Additionally, he has also focused upon **non-academic aspects** such as **stress management**, **habit formation**, and **role of meditation** which are critical for this examination.

TOPPERS' TALK



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**Anoushka  
Sharma**



Anoushka Sharma hailing from Madhya Pradesh completed her graduation from City University, New York with a bachelor's degree in Economics. She gained job experience through a three-month internship with the United Nations prior to taking the civil service examination.

She passed her CSE with AIR 20 in 2022 on her third attempt. **Economics** is her optional subject.

She has a very good command over ethics paper and she has shared her **insights on time management and strategy for attempting questions** in CSE Mains.

TOPPERS' TALK



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# UPSC CSE TOPPERS 2021



**Gamini Singla**



Gamini Singla, hailing from Punjab, completed her graduation in Computer Science Engineering from Punjab Engineering College Chandigarh. Thereafter, she honed her skills through a five-month internship as a finance analyst at JP Morgan.

She secured a remarkable All India Rank of 3 in the UPSC CSE 2021 in her second attempt with **Sociology** as her optional subject.

With her strategic **approach to GS Paper IV (Ethics) and Essay**, Gamini demonstrated her ability to **critically analyze ethical issues** and effectively express her thoughts in a coherent manner.

Her expertise in answer writing provided her with a competitive edge, allowing her to convey her knowledge and insights concisely.

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**Aishwarya Verma**



Aishwarya Verma hails from Madhya Pradesh. After graduating in Electrical Engineering, he opted for Civil Services as a career of choice.

He chose **Geography** as his optional subject and achieved an All-India Rank 4 in UPSC CSE 2021 in his fourth attempt.

Apart from the hard work, determination and resilience shown by Aishwarya, his success can also be attributed to his **short and enriched self-made notes, advanced answer writing skills**, and smart preparation strategy, including S&T.

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**Utkarsh Dwivedi**



Utkarsh Dwivedi, hailing from historic town of Ayodhya, Uttar Pradesh, a graduate in Mechanical Engineering from VIT Vellore, displayed resilience by attempting the exam for the third time and succeeding with remarkable achievement with the optional subject, **Political Science and International Relations**.

He displayed **exemplary command over Ethics Paper**, specially Case Studies and **quotation-based questions**. With his deep understanding of the demand of the UPSC Examination and excellent time management skills, he not only optimized his efforts, but also maximized his performance at all stages of the UPSC CSE.

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**Yaksh Chaudhary**



Yaksh Chaudhary, a resident of Amroha, Uttar Pradesh, through unwavering determination secured an All India Rank 6 in the prestigious exam on his third attempt in 2021. With his passion for Sociology, Yaksh opted for it as his optional subject and devised a winning strategy for his preparation.

Yaksh's **exceptional expertise in answer writing** and adeptness in attempting question papers during the mains exam provided him an edge. Moreover, his skill in crafting **well-structured diagrams** for General Studies, Ethics, and Sociology further enriched the quality and visual appeal of his responses. Yaksh's achievements serve as an inspiration to aspiring candidates nationwide, exemplifying the significance of perseverance, dedication, and strategic planning.

TOPPERS' TALK



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# UPSC CSE TOPPERS 2020



**Shubham  
Kumar**

**1**  
RANK  
2020

Shubham Kumar, hailing from Katihar District in Bihar, completed his graduation in Civil Engineering from IIT Bombay. He achieved the remarkable feat of securing All India Rank 1 in the UPSC examination of 2020 in his third attempt.

His success can be attributed to his **unique approach and meticulous preparation**. Shubham emphasized the importance of **regular mock tests** for prelims and carefully analyzing previous years' UPSC prelims questions.

Shubham was a student of the **VisionIAS Foundation Course**.

He also **utilized topper's copies to enhance his skills in ethics answer writing** and emphasized the **use of diagrams and graphs** in GS papers.

TOPPERS' TALK



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**Praveen  
Kumar**

**7**  
RANK  
2020

Praveen Kumar, achieved an impressive All India Rank 07 in the UPSC Civil Services Examination 2020. Hailing from Jammui, Bihar, Praveen holds a degree in Civil Engineering from IIT Kanpur.

His remarkable journey includes clearing the GATE examination with an AIR 5 and securing AIR 3 in the Indian Engineering Services (IES) exam, all while working for the Indian Railway Service.

Praveen's toppers talk provides invaluable insights, covering motivations for pursuing the IAS, **effective booklists and sources for exam preparation, strategies for newspaper reading and content extraction, note-making techniques** for mains, and **utilizing flow charts and diagrams** in answers.

TOPPERS' TALK



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**Jagrati  
Awasthi**

**2**  
RANK  
2020

Jagrati Awasthi, from Bhopal, Madhya Pradesh, completed her graduation in Electrical Engineering from NIT Bhopal. She gained two years of valuable work experience at BHEL.

With **Sociology** as her optional subject, she achieved an outstanding All India Rank of 2 in the UPSC examination of 2020.

She has emphasized the **importance of a well-structured daily routine** and shared a **detailed booklist** and recommended sources. Jagrati stressed the significance of thorough reading and utilizing previous years' questions to grasp the exam's demands.

Along with refined **note-making techniques**, she has provided insights on determining the optimal number of questions to attempt in the prelims and leveraging previous year's question papers for **Ethics case studies'** preparation.

TOPPERS' TALK



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**Satyam  
Gandhi**

**10**  
RANK  
2020

Satyam Gandhi, an exceptional achiever, secured an All India Rank 10 in the UPSC Civil Services Examination 2020. Hailing from Bihar, Satyam graduated in Political Sciences (H) from Dayal Singh College, University of Delhi.

With **Political Science and International Relations** as his optional subject, he cleared the exam on his first attempt, displaying remarkable determination.

In addition, Satyam achieved an impressive AIR 242 in the NDA Exam. His toppers talk offers invaluable insights into **time management strategies** for a first attempt success, the **significance of flowcharts and diagrams** in mains answers, **effective essay structuring**, and his experience in obtaining a remarkable 201 marks in the interview.

TOPPERS' TALK

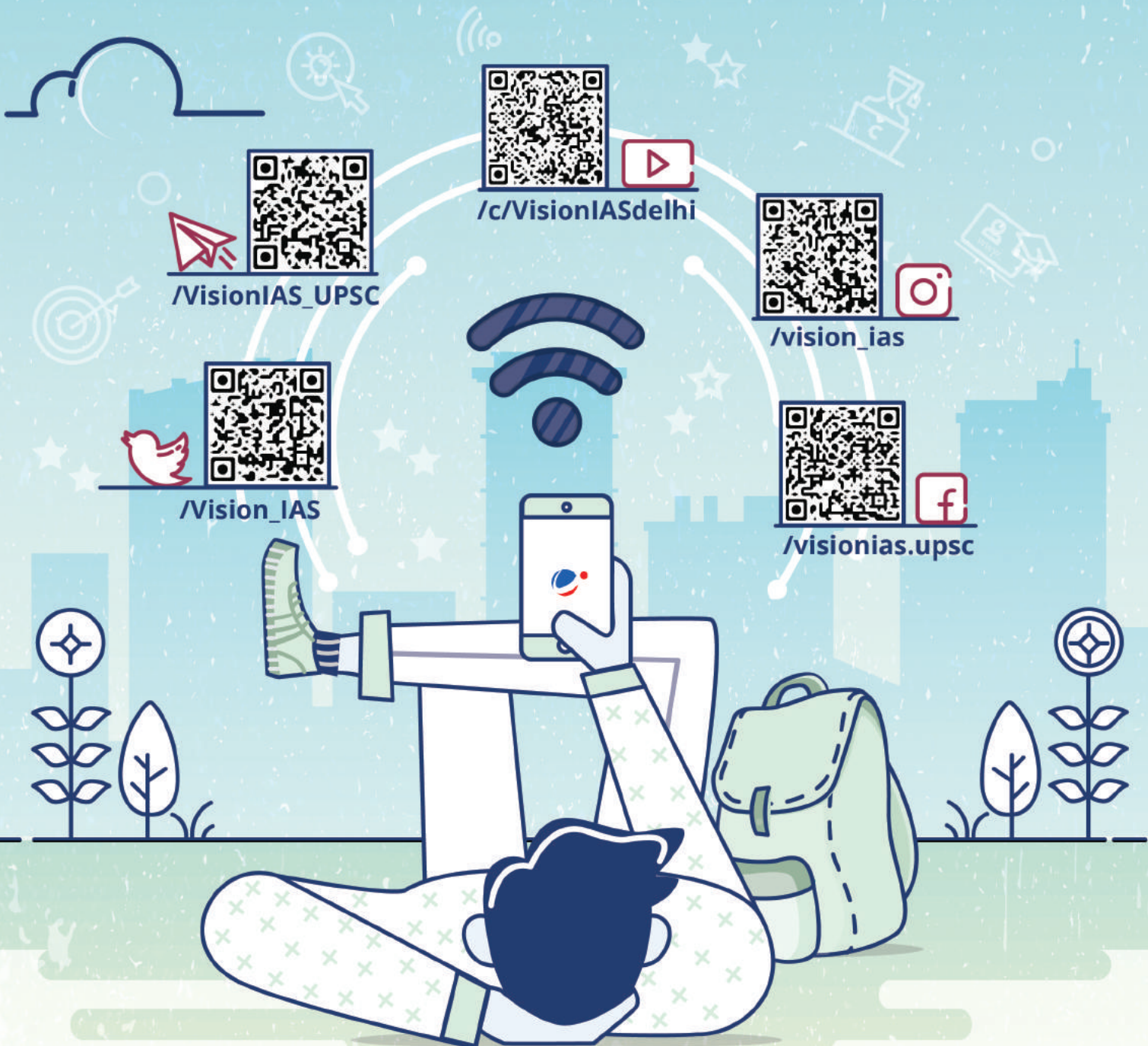


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1  
AIR

**Aditya Srivastava**

**16**

in **TOP 20** Selections in **CSE 2023**

from various programs of **Vision IAS**



**Animesh  
Pradhan**



**Ruhani**



**Srishti  
Dabas**



**Anmol**



**Nausheen**



**Aishwaryam  
Prajapati**

**39**  
Selections

in **TOP 50**

in **CSE 2022**



**Ishita  
Kishore**



**Garima  
Lohia**



**Uma  
Harathi N**



**1  
AIR**

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